

**CITY OF GREELEY  
INVITATION FOR BID**

**Recreation – Lighting & Painting Projects**

**BID #FD20-03-051  
DUE April 23, 2020 BEFORE 2:00 P.M.**



Serving Our  
Community  
It's A Tradition

*The Office of the Purchasing Manager is a service division  
established to build effective partnerships through efficient and responsive  
procurement processes to obtain high quality  
goods and services for the best value.*

**SECTION 00110**  
**BID #FD20-03-051**

**INVITATION FOR BID**

The City of Greeley, Colorado is requesting **sealed** bids for **Recreation Lighting and Painting Projects before April 23, 2020 at 2:00 p.m.** at the Public Works Building, 1001 9<sup>th</sup> Avenue, Greeley, Colorado 80631 at which time and place all bids will be publicly opened and read aloud. No late, faxed or electronic bids will be accepted.

The City of Greeley disseminates all bids and requests for proposals through the Rocky Mountain E-Purchasing System site. Go to <http://www.RockyMountainBidSystem.com>, then "Bid Opportunities" and then select "The City of Greeley". Bids submitted to the City of Greeley must include Sections 00120, 00130, 00140 and 00160. Addenda must be acknowledged in Section 00120 of the bidding documents. Bidders failing to acknowledge any and all addenda may be considered non-responsive.

A pre-bid meeting will be held on **April 7, 2020 at 10:00 am** at the Public Works Building, 1001 9<sup>th</sup> Avenue, 1st Floor Conference Room, Greeley, Colorado. All prospective bidders are encouraged to attend.

Each bid shall be accompanied, in a separate sealed envelope, by a certified check drawn on a bank which is insured by the Federal Deposit Insurance corporation or a bidder's bond executed by a surety company authorized to do business in Colorado, made payable to the City of Greeley, Colorado, in an amount not less than five percent (5%) of the proposal sum as security that the successful bidder will enter into a contract to construct this project in accordance with the plans and specifications, and give bonds in the sum as hereafter provided. Checks accompanying bids not accepted will be returned.

The successful responsive and responsible bidder will be required to furnish a satisfactory performance bond and payment bond in the amount of the contract sum.

No bid shall be withdrawn after the opening on the bids without the consent of the City of Greeley, Colorado, for a period of sixty (60) days after the scheduled time of the receiving the bids.

The City of Greeley retains the right to reject any and all bids and to waive any informality as deemed in the best interest of the city.

Questions pertaining to the project may be directed to Doug Clapp via email: [doug.clapp@greeleygov.com](mailto:doug.clapp@greeleygov.com) or at 970-350-9792. Deadline to receive questions is **April 10, 2020 by 3:00pm.**

Doug Clapp  
Purchasing Manager

Greeley Website  
April 18, 2020

## Section 00120

### BID PROPOSAL

#### **PROJECT: RECREATION LIGHTING AND PAINTING PROJECTS # FD20-03-051**

The Undersigned, having become familiar with the local conditions affecting the cost of the work, plans, drawings, and specifications attached herewith, and with advertisement for bids, the form of bid and proposal, form of bond, all of which are issued and attached and on file in the office of the Project Manager, hereby bid and propose to furnish all the labor, materials, necessary tools, and equipment and all utility and transportation service necessary to perform and complete in a workmanlike manner all of the work required in connection with the construction of the items listed on the bidding schedule in accordance with the plans and specifications as prepared by the City of Greeley, Colorado, for the sums set forth in the Bidding Schedule.

The total bid shall be the basis for establishing the amount of the Performance and Payment Bond for this project. The total bid is based on the quantities shown in the bid proposal form and the dimensions shown on the plans.

The undersigned has carefully checked the Bidding Schedule quantities against the plans and specifications before preparing this proposal and accepts the said quantities as substantially correct, both as to classification and the amounts, and as correctly listing the complete work to be done in accordance with the plans and specifications.

The undersigned, agrees to complete and file a Performance and Payment Bond and further agrees to complete the contract by August 31, 2020. Official notice to proceed will not be issued until adequate Performance and Payment Bonds and other required documents are on file with the City of Greeley.

NOTE: Bidders should not add any conditions or qualifying statements to this bid as otherwise the bid may be declared irregular as being non responsive to the Invitation for bids. The following numbered Addenda have been received and the bid, as submitted, reflects any changes resulting from those Addenda: \_\_\_\_\_

\_\_\_\_\_  
ATTEST

\_\_\_\_\_  
DATE

\_\_\_\_\_  
COMPANY NAME

\_\_\_\_\_  
BY

\_\_\_\_\_  
SIGNATURE

\_\_\_\_\_  
TITLE

## SECTION 00130

### Recreation Center & Family Funplex Lighting and Painting Projects Greeley, Colorado

City of Greeley

Bid Item	Description	Quantity	Unit		Total Cost
1	Rec. Center Lighting Upgrade		Lump sum		
2	Rec. Center Pool Area Painting		Lump sum		
3	Family Funplex Lighting Upgrade		Lump sum		
4	Family Funplex Pool Area Painting		Lump sum		

Grand Total

**TOTAL PROPOSAL**

**dollars**

Total Proposal (Written Out)

This Lump Sum Bid shall include all costs for materials, labor overhead and profit; insurance costs and incidental costs incurred by the Contractor to satisfactorily complete the work in accordance with the Standard General Conditions of the Construction Contract, Summary of Work, and Technical Specifications.

Company Name: \_\_\_\_\_

Authorized Signature: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Title: \_\_\_\_\_ Date: \_\_\_\_\_

Email Address: \_\_\_\_\_

Phone Number: \_\_\_\_\_

\*\* Bid will be awarded to the low, responsible, responsive bidder based on the total Lump Sum bid. \*\*

## **COOPERATIVE PURCHASING STATEMENT**

The City of Greeley encourages and participates in cooperative purchasing endeavors undertaken by or on behalf of other governmental jurisdictions. To the extent, other governmental jurisdictions are legally able to participate in cooperative purchasing endeavors; the City of Greeley supports such cooperative activities. Further, it is a specific requirement of this proposal or Request for Proposal that pricing offered herein to the City of Greeley may be offered by the vendor to any other governmental jurisdiction purchasing the same products. The vendor(s) must deal directly with any governmental agency concerning the placement of purchase orders, contractual disputes, invoicing, and payment. The City of Greeley shall not be liable for any costs or damages incurred by any other entity.

## SECTION 00140

### BID BOND

KNOW ALL MEN BY THESE PRESENT, that we, the undersigned \_\_\_\_\_ as Principal, and \_\_\_\_\_ as Surety, are hereby held and firmly bound unto the City of Greeley, Colorado, as Owner, in the penal sum of \_\_\_\_\_ for the Payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, successors, and assigns.

THE CONDITION of this obligation is such that whereas the Principal has submitted to the City of Greeley, Colorado, the accompanying bid and hereby made a part hereof to enter into a Contract Agreement for the construction of City of Greeley Project,

#### **RECREATION LIGHTING AND PAINTING PROJECTS # FD20-03-051**

WHEREAS, the Owner, as condition for receiving said bid, requires that the Principal to deposit with the Owner as Bid Guaranty equal to five percent (5%) of the amount of said bid.

NOW, THEREFORE,

(a) If said bid shall be rejected; or in the alternate,

(b) If said bid shall be accepted and the Principal shall execute and deliver a Contract Agreement (properly completed in accordance with said bid) and shall furnish a Performance and Payment Bond upon the forms prescribed by the Owner for the faithful performance of said Agreement; and shall in all other respects perform the agreement created by the acceptance of said bid;

then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall be in no way impaired or affected by any extension of the time within which the Owner may accept such bid; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

PRINCIPAL

SURETY

Name: \_\_\_\_\_

Address: \_\_\_\_\_

By: \_\_\_\_\_

Title: \_\_\_\_\_ Attorney \_\_\_\_\_

In-Fact: \_\_\_\_\_  
(Seal)

(Seal)

NOTE: Surety Companies executing bonds must be authorized to transact business in the State of Colorado and be accepted to the Owner.

# SECTION 00160

## NOTICE OF PRE-BID CONFERENCE

### RECREATION LIGHTING AND PAINTING PROJECTS # FD20-03-051

A pre-bid conference will be held:

On April 7, 2020 at 10:00 a.m., Public Works Building, 1<sup>st</sup> Floor Conference Room, 1001 9<sup>th</sup> Avenue, Greeley, CO 80631. All bidders are highly encouraged to attend.

Representatives of the City of Greeley will be present to answer questions.

Each bidder shall submit the following declaration of attendance, along with the other bid documents.

\*\*\*\*\*

I have attended the pre-bid conference \_\_\_\_\_

I have not attended the pre-bid conference \_\_\_\_\_

\_\_\_\_\_  
Name of Contracting Organization

\_\_\_\_\_  
Authorized Signature

\_\_\_\_\_  
Date



## SECTION 00210

### NOTICE OF AWARD

DATE:

TO:

Re: **RECREATION LIGHTING AND PAINTING PROJECTS # FD20-03-051**

Dear Contractor:

The City of Greeley, Colorado (hereinafter called "the Owner") has considered the bids submitted for referenced work in response to its Invitation for Bids. You are hereby notified that your bid has been accepted for items and prices stated in the Bid Schedule in the amount of \$\_\_\_\_\_. You are required to execute the Contract Agreement, provide the necessary insurance certificates, the Performance and Payment Bonds within ten (10) days from the date of this Notice. If you fail to execute said Contract Agreement and furnish the necessary insurance certificates and bonds within the time allotted from this date, the Owner will be entitled to consider your rights arising out of the Owner's acceptance of your bid as abandoned and to demand payment of bid guaranty as damages. The Owner will be entitled to such other rights as may be granted by law. You are required to return an acknowledged copy of this Notice of Award and enclosures to Purchasing.

CITY OF GREELEY, COLORADO

By: Doug Clapp

Title: Purchasing Manager

ACKNOWLEDGMENT: Receipt of the foregoing Notice of Award accompanied with a Performance and Payment Bond form and a signed copy of the Contract Document is hereby acknowledged this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

Bidder: \_\_\_\_\_

By: \_\_\_\_\_

## SECTION 00310

### CONTRACT

THIS AGREEMENT made and entered into this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, by and between the City of Greeley, Colorado, and under the laws of the state of Colorado, party of the first part, termed in the Contract Documents as the "Owner" and \_\_\_\_\_ party of the second part, termed in the Contract Documents as "Contractor."

WITNESSETH: In consideration of monetary compensation to be paid by the Owner to the Contractor at the time and in the manner hereinafter provided, the said Contractor has agreed, and does hereby agree, to furnish all labor, tools, equipment and material and to pay for all such items and to construct in every detail, to wit:

PROJECT: **RECREATION LIGHTING AND PAINTING PROJECTS # FD20-03-051**

at the price bid on the Proposal Form of \$ \_\_\_\_\_ all to the satisfaction and under the general supervision of the Project Manager for the City of Greeley, Colorado.

The Contract Documents consist of this Agreement, the Conditions of the Contract (General, Supplementary and other Conditions), the Drawings, the Specifications, all Addenda issued prior to and all Modifications issued after execution of this Agreement. These form the Contract, and all are as fully a part of the Contract as if attached to this Agreement or repeated herein.

The Project Manager named herein shall interpret and construe the Contract Documents, reconciling any apparent or alleged conflicts and inconsistencies therein; and all of the work and all details thereof shall be subject to the approval and determination of the Project Manager as to whether or not the work is in accordance with Contract Documents. Said City Project Manager shall be the final arbiter and shall determine any and all questions that may arise concerning the Contract Documents, the performance of the work, the workmanship, quality of materials and the acceptability of the completed project. The decision of the Project Manager on all questions shall be final, conclusive and binding.

AND FOR SAID CONSIDERATION IT IS FURTHER PARTICULARLY AGREED BETWEEN THE PARTIES TO THIS AGREEMENT.

1. That construction and installation of the above enumerated work for the Owner shall be completed and ready for use in accordance with the time of completion described in the Bid form of this Contract. That the above enumerated work shall begin within ten (10) days of the official "Notice to Proceed". (Contract shall become void if work is not started at specified time.)

2. That said work and materials for the project covered by the Contract Documents shall be completely installed and delivered to the Owner, within the time above stated, clear and free from any and all liens, claims, and demands of any kind.

3. The full compensation to be paid the Contractor by the Owner pursuant to the terms of this Contract shall be payable as provided in the Contract Documents.

4. This Contract consists of the following component parts, all of which are as fully a part of the Contract as herein set out verbatim, or if not attached, as if hereto attached:

Section 00110: Invitation for Bid  
Section 00120: Bid Proposal  
Section 00130: Bid Schedule  
Section 00140: Bid Bond  
Section 00160: Pre-bid meeting  
Section 00210: Notice of Award  
Section 00310: Contract  
Section 00320: Performance Bond  
Section 00330: Payment Bond  
Section 00340: Certificate of Insurance  
Section 00350: Lien Waiver Release  
Section 00360: Debarment/Suspension Certification Statement  
Section 00410: Notice to Proceed  
Section 00420: Project Manager Notification  
Section 00430: Certificate of Substantial Completion  
Section 00440: Final Completion  
Section 00510: General Conditions of the Contract  
Section 00520: Subcontractors List  
Section 00620: Special Provisions

Addenda Number \_\_\_\_\_ Inclusive

Any modifications, including change orders, duly delivered after execution of this Agreement.

**IN WITNESS WHEREOF**, the parties have caused this instrument to be executed as of the day and year first above written.

City of Greeley, Colorado

Contractor\_\_\_\_\_

Approved as to Substance

\_\_\_\_\_  
Authorized Signature

\_\_\_\_\_  
City Manager-Roy Otto

\_\_\_\_\_  
Printed Name

Reviewed as to Legal Form  
OFFICE OF THE CITY ATTORNEY

\_\_\_\_\_  
Title

By: \_\_\_\_\_  
City Attorney-Doug Marek

Certification of Contract  
Funds Availability

\_\_\_\_\_  
Director of Finance-Renee Wheeler

## SECTION 00320

### PERFORMANCE BOND

Bond No. \_\_\_\_\_

KNOWN ALL MEN BY THESE PRESENTS: that

(Firm) \_\_\_\_\_

(Address) \_\_\_\_\_

(an Individual), (a Partnership), (a Corporation), hereinafter referred to as "the Principal", and

(Firm) \_\_\_\_\_

(Address) \_\_\_\_\_

hereinafter referred to as "the Surety", are held and firmly bound unto the CITY OF GREELEY, 1000 10th Street, Greeley, CO. 80631, a Municipal Corporation, hereinafter referred to as "the Owner" in the penal sum of \_\_\_\_\_ in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors and assigns, jointly and severally, firmly by these present.

THE CONDITIONS OF THIS OBLIGATION are such that whereas the Principal entered into a certain Contract Agreement with the Owner, dated the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_, a copy of which is hereto attached and made a part hereof for the performance of City of Greeley Project,

### **RECREATION LIGHTING AND PAINTING PROJECTS # FD20-03-051**

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions and agreements of said Contract Agreement during the original term thereof, and any extensions thereof which may be granted by the Owner, with or without Notice to the Surety and during the life of the guaranty period, and if he shall satisfy all claims and demands incurred under such Contract Agreement, and shall fully indemnify and save harmless the Owner from all cost and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the Owner all outlay and expense which the Owner may incur in making good any default, and then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract Agreement or to the work to be performed thereunder or the specifications accompanying the same shall in any way affect its obligation on this bond; and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract Agreement or to the work or to the specifications.

IN WITNESS WHEREOF, this instrument is executed this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

PROVIDED, FURTHER, that no final settlement between the Owner and Contractor shall abridge the right of any beneficiary hereunder, whose claims may be unsatisfied.

IN PRESENCE OF:

PRINCIPAL

\_\_\_\_\_ By: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ (Corporate Seal) \_\_\_\_\_ (Address)

IN PRESENCE OF:

OTHER PARTNERS

\_\_\_\_\_ By: \_\_\_\_\_

\_\_\_\_\_ By: \_\_\_\_\_

By: \_\_\_\_\_

IN PRESENCE OF:

SURETY

\_\_\_\_\_ By: \_\_\_\_\_

(Attorney-in-Fact)

\_\_\_\_\_

\_\_\_\_\_ (SURETY SEAL) \_\_\_\_\_ (Address)

NOTE: Date of Bond must not be prior to date of Contract Agreement. If Contractor is Partnership, all partners should execute bond.

IMPORTANT: Surety Company must be authorized to transact business in the State of Colorado and be acceptable to the Owner.

## SECTION 00330

### PAYMENT BOND

Bond No. \_\_\_\_\_

KNOWN ALL MEN BY THESE PRESENT: that

(Firm) \_\_\_\_\_

(Address) \_\_\_\_\_

(an Individual), (a Partnership), (a Corporation), hereinafter referred to as "the Principal", and

(Firm) \_\_\_\_\_

(Address) \_\_\_\_\_

hereinafter referred to as "the Surety", are held and firmly bound unto the CITY OF GREELEY, 1000 10th Street, Greeley, Co. 80631, a Municipal Corporation, hereinafter referred to as "the Owner", in the penal sum of

\_\_\_\_\_ in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITIONS OF THIS OBLIGATION are such that whereas the Principal entered into a certain Contract Agreement with the Owner, dated the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_, a copy of which is hereto attached and made a part hereof for the performance of

### **RECREATION LIGHTING AND PAINTING PROJECTS # FD20-03-051**

NOW, THEREFORE, if the Principal shall make payment to all persons, firms, subcontractors and corporations furnishing materials for or performing labor in the prosecution of the work provided for in such Contract Agreement, and any equipment and tools, consumed, rented or used in connection with the construction of such work and all insurance premiums on said work, and for all labor, performed in such work whether by subcontractor or otherwise, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract Agreement or to the work to be performed thereunder or the specifications accompanying the same shall in any way affect its obligation on this bond; and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract Agreement or to the work or to the specifications.

IN WITNESS WHEREOF, this instrument is executed this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

PROVIDED, FURTHER, that no final settlement between the Owner and Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN PRESENCE OF:

PRINCIPAL

\_\_\_\_\_ By: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_  
(Corporate Seal)

\_\_\_\_\_  
(Address)

IN PRESENCE OF:

OTHER PARTNERS

\_\_\_\_\_ By: \_\_\_\_\_

\_\_\_\_\_ By: \_\_\_\_\_

\_\_\_\_\_ By: \_\_\_\_\_

IN PRESENCE OF:

SURETY

\_\_\_\_\_ By: \_\_\_\_\_

\_\_\_\_\_  
(Attorney-in-Fact)

\_\_\_\_\_

\_\_\_\_\_  
(SURETY SEAL)

\_\_\_\_\_  
(Address)

NOTE: Date of bond must not be prior to date of Contract Agreement. If Contractor is Partnership, all partners should execute Bond.

IMPORTANT: Surety Company must be authorized to transact business in the State of Colorado and be acceptable to the Owner.



## SECTION 00350

### LIEN WAIVER RELEASE

TO: City of Greeley, Colorado (hereinafter referred to as "the OWNER".)

FROM: (hereinafter referred to as "the CONTRACTOR")

PROJECT: **RECREATION LIGHTING AND PAINTING PROJECTS # FD20-03-051**

1. The CONTRACTOR does hereby release all Mechanic's Liens Rights, Miller Act Claim (40 USCA 270), Stop Notice, Equitable Liens and Labor and Material Bond Rights resulting from labor and/or materials, subcontract work, equipment or other work, rents, services or supplies heretofore furnished in and for the construction, design, improvement, alteration, additions to or repair of the above described project.
2. This release is given for and in consideration of the sum of \$            and other good and valuable consideration. If no dollar consideration is herein recited, it is acknowledged that other adequate consideration has been received by the CONTRACTOR for this release.
3. In further consideration of the payment made or to be made as above set forth, and to induce the OWNER to make said payment, the CONTRACTOR agrees to defend and hold harmless the OWNER, employees, agents and assigns from any claim or claims hereinafter made by the CONTRACTOR and/or its material suppliers, subcontractors or employees, servants, agents or assigns of such persons against the project. The CONTRACTOR agrees to indemnify or reimburse all persons so relying upon this release for any and all sums, including attorney's fees and costs, which may be incurred as the result of any such claims.
4. It is acknowledged that the designation of the above project constitutes an adequate description of the property and improvements for which the CONTRACTOR has received consideration for this release.
5. It is further warranted and represented that all such claims against the CONTRACTOR or the CONTRACTOR's subcontractors and/or material suppliers have been paid or that arrangements, satisfactory to the OWNER and CONTRACTOR, have been made for such payments.
6. It is acknowledged that this release is for the benefit of and may be relied upon by the OWNER, the CONTRACTOR, and construction lender and the principal and surety on any labor and material bond for the project.

Dated this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

By: \_\_\_\_\_

STATE OF \_\_\_\_\_ )  
 )ss.  
COUNTY OF \_\_\_\_\_ )

The foregoing instrument was acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_,  
20\_\_\_\_ by \_\_\_\_\_.

Notary Public

\*\*\*Strike when not applicable

## SECTION 00360

### RECREATION LIGHTING AND PAINTING PROJECTS # FD20-03-051

#### Debarment/Suspension Certification Statement

The proposer certifies that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from participation in this transaction by any Federal, State, County, Municipal or any other department or agency thereof. The proposer certifies that it will provide immediate written notice to the City if at any time the proposer learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstance.

DUNS # (Optional) \_\_\_\_\_

Name of Organization\_\_\_\_\_

Address\_\_\_\_\_

Authorized Signature\_\_\_\_\_

Title\_\_\_\_\_

Date\_\_\_\_\_

## SECTION 00410

### NOTICE TO PROCEED

Month , 20

TO: NAME

PROJECT: **RECREATION LIGHTING AND PAINTING PROJECTS # FD20-03-051**

To Whom It May Concern:

You are hereby notified to commence work on the above-referenced project in accordance with the Contract Agreement dated Month , 20 .

You are to complete this project by Month , 20

CITY OF GREELEY, COLORADO

By: \_\_\_\_\_

Title: \_\_\_\_\_

\_\_\_\_\_  
Signature

## SECTION 00420

### PROJECT MANAGER NOTIFICATION

\_\_\_\_\_, 20\_\_\_\_

TO:

PROJECT: **RECREATION LIGHTING AND PAINTING PROJECTS # FD20-03-051**

The Owner hereby designates Dale Blehm as its Project Manager and authorizes this individual, under the authority of the Director of Public Works to make all necessary and proper decisions with reference to the project. Contract interpretations, change orders and other requests for clarification or instruction shall be directed to the Project Manager. The Director of Public Works shall be authorized to bind the Owner with respect to any decision made in accordance with the contract document.

CITY OF GREELEY, COLORADO

By: \_\_\_\_\_

Title: \_\_\_\_\_

## **SECTION 00430**

### **CERTIFICATE OF SUBSTANTIAL COMPLETION**

**TO: CONTRACTOR**

**PROJECT: RECREATION LIGHTING AND PAINTING PROJECTS # FD20-03-051**

Project or designated portion shall include: Describe Scope.

The work performed under this contract has been reviewed and found to be substantially complete. The Date of Substantial Completion of the Project or portion thereof designated above is hereby established as Month , 20 .

The date of commencement of applicable warranties required by the Contract Documents is stipulated in Section 00440 - Certificate of Final Acceptance.

#### **DEFINITION OF DATE OF SUBSTANTIAL COMPLETION**

The Date of Substantial Completion of the Work or designated portion thereof is the date certified by the Project Manager when construction is sufficiently complete, in accordance with the Contract Documents, so the Owner can occupy or utilize the Work or designated portion thereof for the use for which it is intended, as expressed in the Contract Documents.

A list of items to be completed or corrected, prepared by the Contractor and verified and amended by the Project Manager is attached hereto. The failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. The date of commencement of warranties for items on the attached list is as stipulated in Section 00440 – Certificate of Final Acceptance.

The Owner shall operate and maintain the Work or portion of the Work described above from the Date of Substantial Completion and be responsible for all costs associated with the completed work excluding cost related to warrantee work.

Certificate of Substantial Completion

Page 2

The Contractor will complete or correct the Work on the list of items attached hereto within  
days from the above Date of Substantial Completion.

---

Contractor

---

Owner

(Note--Owner's and Contractor's legal and insurance counsel should review and determine insurance requirements and coverage; Contractor shall secure consent of surety company, if any.)

## SECTION 00440

### CERTIFICATE OF FINAL ACCEPTANCE

TO: **CONTRACTOR**

PROJECT NAME: **RECREATION LIGHTING AND PAINTING PROJECTS # FD20-03-051**

The work performed under this contract has been reviewed and found to meet the definition of final acceptance. This Certificate of Final Acceptance applies to the whole of the work.

The Date of Final Acceptance of the Project designated above is hereby established as: Month \_\_\_\_\_, 20\_\_\_\_ at 2:00 pm. This date is also the date of commencement of applicable warranties associated with the Project described above and as required by the Contract Documents.

#### DEFINITION OF DATE OF FINAL ACCEPTANCE

The Date of Final Acceptance of the Work is the date certified by the City of Greeley's Project Manager when the work is 100% complete, in accordance with the Contract Documents, as amended by change order(s), or as amended below:

Amendment to the Certificate of Final Completion (if any): Describe Amendments.

The Contractor and/or the City Of Greeley shall define any claims or requests for additional compensation above (or as attachments to this document).

Final Acceptance shall not be achieved until the Contractor provides the City Of Greeley with all contract specified Contractor and Sub-contractor close out documents including final lien waivers, releases, insurances, manuals, training, test results, warranties, and other documents required by the Contract Documents, as amended.

Upon issuance of the Certificate of Final Acceptance the Contractor may submit an application for payment requesting final payment for the entire Work. Liquidated damages (if any) will be assessed at this time.

Contractor's acceptance of the final payment shall constitute a waiver by the Contractor of all claims arising out of or relating to the Work; except as noted under 'Amendment to the Certificate of Final Acceptance' above.

Agreed:

_____ Contractor's Representative	_____ DATE	_____ Project Manager (COG)	_____ DATE
--------------------------------------	---------------	--------------------------------	---------------

---



**SECTION 00510**  
**CITY OF GREELEY**  
**GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION**  
**(REVISED MAY 2017)**

**ARTICLE 1**  
**DEFINITIONS**

- 1.1 **Bidder:** An architect, engineer, individual, firm, partnership, corporation or combination thereof, submitting a Bid for the Work.
- 1.2 **Change Notice:** A document issued to the Contractor specifying a proposed change to the Contract Documents. Unless otherwise expressly stated on the face of the Change Notice, a Change Notice is a proposal which may result in a Change Order.
- 1.3 **Change Order:** A document issued to the Contractor modifying the Contract.
- 1.4 **Construction Contract:** The Contract Documents, including the Contract for construction (hereinafter "the contract") executed by the Contractor and the Owner covering the performance of the Work including the furnishing of labor, superintendence, materials, tools and equipment as indicated in the Contract Documents.
- 1.5 **Contract Documents:** Documents applicable to and specific to the construction of an individual Project, including the Contract and all other documents executed by the Contractor and Owner covering the performance of the work including but not limited to Specifications, Insurance Requirements, Contract Drawings, Conditions of the Contract (General and Supplementary), Owner Contractor Agreement, all Addenda, all change orders issued after execution of the Contract, Performance and Payment Bonds, and any other special provisions.
- 1.6 **Contract Drawings(Project Drawings):** Contract drawings, The plans, to include but not limited to plans, profiles, typical cross sections, general cross-sections, elevations, schedules, schematics, notes and details which show locations, character, dimensions, and details of the Work.
- 1.7 **Contractor:** The individual, firm, partnership, or corporation, or combination thereof, private, municipal, or public, including joint ventures, which, as an independent contractor, has entered into a contract with the Owner, who is referred to throughout the Contract Documents by singular number and masculine gender.
- 1.8 **Days:** Unless otherwise designated, days mean calendar days.
- 1.9 **Extra Work:** Work not provided for in the Contract as awarded but found to be essential to the satisfactory completion of the Contract, within its intended scope. Reimbursement for extra work is governed by Article 28, CHANGES, or Article 31, CONTRACTOR PROPOSALS.

- 1.10 **Field Order:** A written order issued to a contractor by the Owner, or Project Manager, effecting a minor change or clarification with instructions to perform work not included in the contract. The work will eventually become a Change Order. A field Order is an expedient process used in an emergency or need situation that in many cases does not involve an adjustment to the contract sum or an extension of the contract sum or an extension of the contract time.
- 1.11 **Final Acceptance:** The formal written acceptance by the Owner of the completed Work.
- 1.12 **Force Account:** A method of payment, other than lump sum or unit price, for Work ordered by Change Order or by written notice from the Owner. Reimbursement for force account work is governed by Article 36, FORCE ACCOUNT WORK.
- 1.13 **Furnishing:** Manufacturing, fabricating and delivering to the site of the Work materials, plant, power, tools, patterns, supplies, appliances, vehicles and conveyances necessary or required for the completion of the Work.
- 1.14 **General Conditions (GC):** A section of the Contract Documents which specifies, in general, the contractual conditions.
- 1.15 **General Terms:** Directed, required, permitted, ordered, designated, selected, prescribed or words of like import shall be understood to mean the direction, requirement, permission, order, designation, selection or prescription of the Project Manager. Approved, satisfactory, equal, necessary or words of like import shall be understood to mean approved by, acceptable to, satisfactory to, equal, necessary in the opinion of the Project Manager.
- 1.16 **Indicated:** A term meaning as shown on the Contract Drawings, or as specified and detailed in the Contract Documents.
- 1.17 **Installation, Install, or Installing:** Completely assembling, erecting and connecting material, parts, components, appliances, supplies and related equipment specified or required for the completion of the Work.
- 1.18 **Limit of Work:** Boundary within which the Work, excepting utility and drainage work in Public Right Of Way and Easements, is to be performed.
- 1.19 **Notice to Proceed:** Written notice from the Owner to the Contractor to proceed with the Work.
- 1.20 **Notice of Termination:** Written notice from the Owner to the Contractor to stop work under the Contract on the date and to the extent specified in the Notice of Termination.
- 1.21 **Owner:** The City of Greeley.
- 1.22 **Permanent Drainage Easement:** Area required to construct and maintain permanent drainage facilities for retention, release, and passage of surface water.
- 1.23 **Permanent Utility Easement:** Area required to construct and maintain utility facilities.

- 1.24 **Project:** That specific portion of the Work indicated in the Contract Documents.
- 1.25 **Project Manager:** The Owner's designated representative. The Project Manager has the authority to delegate portions of his responsibilities to others.
- 1.26 **Provide:** In reference to work to be performed by the Contractor, provide means furnish and install completely in place.
- 1.27 **Punch List:** Work determined to be incomplete or unacceptable at time of inspection for substantial completion.
- 1.28 **Samples:** Physical examples which illustrate materials, equipment, fixtures and workmanship which establish standards by which the Work will be judged.
- 1.29 **Schedule:** Acceptable schedules are BAR or GANTT Chart or CPM schedule.
- 1.30 **Shop Drawings:** Documents furnished by the Contractor to illustrate specific portions of the Work. Shop Drawings include drawings, diagrams, illustrations, schedules, charts, brochures, tables and other data describing fabrication and installation of specific portions of the Work.
- 1.31 **Specifications:** A document applicable to construction contracts containing the Technical Provisions.
- 1.32 **Subcontractor:** Any person, firm or corporation, other than the employees of the Contractor, who contracts with the Contractor to furnish labor, material or labor and materials, under this Contract.
- 1.33 **Special Provisions:** Provisions especially applicable to this Contract which invoke, modify and supplement the General Conditions which are included in the Contract Documents.
- 1.34 **Substantial Completion:** The state in the progress of Work when the Work, or a designated portion thereof, is sufficiently complete in accordance with the Contract Documents, so that Owner may access, occupy, use, and enjoy the Project, or designated portion thereof, for its intended purpose. Substantial Completion shall not occur until a temporary or permanent Certificate of Occupancy is issued and only minor punch list items remain for such Work.
- 1.35 **Technical Provisions:** Those provisions which specify the materials and execution of construction for work entering into the project.
- 1.36 **Work:** The construction, labor, materials, equipment, and contractual requirements as indicated in the Contract Documents, including alterations, amendments, or extensions thereto made by authorized changes.
- 1.37 **Work Site:** The area enclosed by the Limit of Work indicated in the Project Drawings and boundaries of local streets and public easements in which the Contractor is to perform work under the

Contract. It shall also include areas obtained by the Contractor for use in connection with the Contract, when contiguous to the Limit of Work.

## **ARTICLE 2**

### **INTERPRETATION**

2.1 The documents comprising the Contract Documents are complementary and indicate the construction and completion of the Work. Anything mentioned in the Contract Specifications and not shown on the Contract Drawings, or shown on the Contract Drawings and not mentioned in the Contract Specifications, shall be of like effect as if shown or mentioned in both.

2.2 Where "as indicated", "as detailed", or words of similar import are used, it shall be understood that the reference is made to the specifications or drawings accompanying this Contract unless stated otherwise.

2.3 References to Articles or Sections include sub articles or subsections under the Article Reference (for example, a reference to Article 2 is also a reference to 2.1 through 2.9, and references to paragraphs similarly include references to subparagraphs).

2.4 Referenced Standards: Material and workmanship specified by the number, symbol, or title of a referenced standard shall comply with the latest edition or revision thereof and amendments and supplements thereto in effect on the date of the Invitation to Bid except where a particular issue is indicated.

2.5 Precedence of Contract Documents: Except as provided by Paragraph 2.1 of this Article, the Construction Contract governs over other Contract Documents, except that a Change Order governs over the Contract and previously issued Change Orders. The Contract Conditions govern over the General Conditions.

2.6 Explanations: Should it appear that the Work to be done or any of the matters relative thereto are not sufficiently detailed or explained in the Contract Documents, the Contractor shall apply to the Owner for such explanation provided as part of the Contract. Disputes over questions of fact which are not settled by agreement shall be decided by Owner. Such decision thereon will be final, subject to remedies under Article 35, DISPUTES.

2.7 Should there be any conflict, detailed instructions govern over general instructions, detail drawings have precedence over small scale drawings, and dimensions have precedence over scale.

2.8 Omissions and Misdescriptions: The Contractor shall carefully study and compare all drawings, specifications, Contract Documents and other instructions; shall verify all dimensions on the Contract Drawings before laying out the Work; shall notify the Project Manager of all errors, inconsistencies or omissions which he may discover; and obtain specific instructions in writing before proceeding with the Work. The Contractor shall not take advantage of apparent errors or omissions which may be found in the Contract Documents, but the Project Manager shall be entitled to make such corrections therein and interpretations thereof as he may deem necessary for the fulfillment of their intent. The Contractor shall be responsible for all errors in construction which could have been avoided by such examination and notification, subject to remedies under Article 35, Disputes.

## **ARTICLE 3**

## **ENTITY OF CONTRACTOR**

3.1 If the Contractor hereunder is comprised of more than one legal entity, each such entity shall be jointly and severally liable hereunder.

## **ARTICLE 4 LIABILITY AND INDEMNIFICATION**

4.1 It is agreed that the Contractor assumes responsibility and liability for damages, loss or injury of any kind or nature whatever to persons or property caused by or resulting from or in connection with any act, action, neglect, omission, or failure to act when under a duty to act on the part of the Contractor or any of his officers, agents, employees, or subcontractors in his or their performance of the Work. The Contractor shall indemnify and hold harmless the Government, the State, the Owner and the Project Manager and their members, officers, agents, or employees from claims, losses, damages, charges, costs, or expenses, including attorney's fees, whether direct or indirect, to which they or any of them may be put or subjected to by reason of any such loss or injury.

## **ARTICLE 5 PROTECTION OF EXISTING VEGETATION, STRUCTURES, UTILITIES, AND IMPROVEMENTS AND LAND SURVEY MONUMENTS**

5.1 A Contractor shall preserve and protect existing vegetation such as trees, shrubs, and grass on or adjacent to the work site which are not indicated to be removed and which do not unreasonably interfere with the construction work and he shall replace in kind any vegetation, shrubs and grass damaged by him at his own expense.

5.2 The Contractor shall protect from damage all utilities, structures, or improvements on or near the site of the Work and shall repair or restore any damage to such utilities, structures, or improvements resulting from failure to comply with the requirements of the Contract or the failure to exercise reasonable care in the performance of the Work. If the Contractor fails or refuses to repair any such damage promptly, the Owner may have the necessary work performed and charge the cost thereof to the Contractor.

5.3 All land survey monuments shall be protected from any damage by any work and/or shall be replaced by a licensed land surveyor licensed in the state of Colorado at the contractor's expense before final acceptance is issued.

## **ARTICLE 6 CONTRACTUAL RELATIONSHIPS**

6.1 No contractual relationship will be recognized under the Contract other than the contractual relationship between the Owner and the Contractor.

## **ARTICLE 7 ASSIGNMENT**

7.1 The performance of the Work under the Contract shall not be assigned except upon written consent of the Owner. Consent will not be given to any proposed assignment which would relieve the Contractor or his surety of their responsibilities under the Contract. The Contractor shall not assign any monies due or to become due to him under the Contract without the previous written consent of the Owner.

## **ARTICLE 8 SUBCONTRACTORS**

8.1 Unless otherwise required by the Contract Documents or the Bidding Documents, the Contractor, as soon as practicable after the award of the Contract, not to exceed 3 days, shall furnish to the Owner and the Project Manager, in writing the names of the subcontractors, persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each of the principal portions of the Work. The Project Manager will promptly reply to the Contractor in writing whether or not the Owner or the Project Manager, after due investigation, has reasonable objection to any such proposed person or entity. Failure of the Owner or Project Manager to reply promptly shall constitute notice of no reasonable objections.

## **ARTICLE 9 CONDITIONS AFFECTING THE WORK**

9.1 The Contractor shall be responsible for taking steps reasonably necessary to ascertain the nature and location of the Work, and the general and local conditions which can affect the Work or the cost thereof. Failure by the Contractor to do so will not relieve him from responsibility for successfully performing work without additional expense to the Owner. The Owner will not be responsible for any understanding or representations concerning conditions, unless such understanding or representations are expressly stated in the Contract.

## **ARTICLE 10 GRATUITIES AND CONFLICTS OF INTEREST**

10.1 The Owner may, by written notice to the Contractor terminate the right of the Contractor to proceed under this Contract if it is found that gratuities (in the form of entertainment, gifts, or otherwise) were offered or given by the Contractor, or any agent or representative of the Contractor or any director, officer or employee of the Owner or its Project Manager with a view toward securing a contract or securing favorable treatment with respect to the awarding or amending, or the making of any determinations with respect to the performance of such contract. The Owner's determination shall be final subject only to judicial review.

10.2 In the event this Contract is terminated for any reason, the Owner shall be entitled to pursue the same remedies against the Contractor as it could pursue in the event of a breach of the Contract by the Contractor.

10.3 No member, officer or employee of the Owner or of a local public body during his tenure or for one year thereafter shall have any interest, direct or indirect, in this Contract or the proceeds thereof. "Local public body" means the State, any political subdivision of the State, or any agency of the State or any political subdivision thereof.

10.4 The rights and remedies of the Owner provided in this article are not exclusive and are in addition to any other rights and remedies provided by law or under the Contract.

## **ARTICLE 11      WARRANTY OF WORK**

11.1 Except where longer periods of warranty are indicated for certain items, the Contractor warrants work under the Contract to be free from faulty materials and workmanship for a period of not less than two years from date of Final Acceptance, which two year period shall be covered by the Performance Bond and Payment Bond as specified in this Contract. The Contractor shall immediately remedy, repair, or replace, without cost to the Owner and to the entire satisfaction of the Owner, defects, damages, or imperfections due to faulty materials or workmanship appearing in said work within said period of not less than two years. Remedied work shall carry the same warranty as the original work starting with the date of acceptance of the replacement or repair. Payment to the Contractor will not relieve him of any obligation under this Contract.

11.2 The Contractor, at no additional expense to the Owner, shall also remedy damage to equipment, the site, or the building or the contents thereof which is the result of any failure or defect in the Work, and restore any work damaged in fulfilling the requirements of the Contract. Should the Contractor fail to remedy any such failure or defect within a reasonable time but no longer than ten (10) days after receipt of notice thereof, the Owner will have the right to replace, repair, or otherwise remedy such failure or defect at the Contractor's expense.

11.3 Subcontractors', manufacturers', and suppliers' warranties and guarantees, expressed or implied, respecting any part of the Work and any material used therein shall be deemed obtained and shall be enforced by the Contractor for the Benefit of the Owner without the necessity of separate transfer or assignment thereof.

11.4 The rights and remedies of the Owner provided in this Article are in addition to and do not limit any rights and remedies afforded by the Contract or by law.

## **ARTICLE 12      MATERIAL**

12.1 Unless otherwise indicated in this Contract, equipment, material and products incorporated in the Work covered by this Contract shall be new and of the grade specified in the Contract for the purpose intended. Unless otherwise specifically indicated, reference to equipment, material, product or patented process by trade names, make, or catalog number, shall be regarded as establishing a standard of quality and shall not be construed as limiting competition, and the Contractor may, at his option, use any equipment, material, article, or process which is equivalent to that named, subject to the requirements of Paragraph 12.2 of this Article.

12.2 Within the scope of his authority, the Project Manager shall be the sole judge of the quality and suitability of proposed alternative equipment, material, article or process. The burden of proving the quality and suitability of the alternative shall be upon the Contractor. Information required by the Project Manager in judging an alternative shall be submitted for approval by the Contractor at the Contractor's expense prior to installation.

12.3 Where use of an alternative material involves redesign of or changes to other parts of the Work, the cost and the time required to affect such redesign or change will be considered in evaluating the suitability of the alternative material. Redesign and changes in other parts of the Work shall be at the Contractor's expense.

12.4 No action relating to the approval of alternative materials will be taken by the Project Manager until the request for substitution is made in writing by the Contractor accompanied by complete data as to the quality and suitability of the materials proposed. Such request shall be made in ample time to permit approval without delaying the Work.

12.5 Disposal of material outside the Work Site: The Contractor shall make his own arrangements for legally disposing of waste and excess materials outside the Work Site and he shall pay costs therefore.

12.6 Property rights in materials: The Contractor shall have no property right in materials after they have been attached or affixed to the Work or the soil, or after payment has been made by the Owner to the Contractor for materials delivered to the site of the Work, or stored subject to or under the control of the Owner as provided in Article 24, PROGRESS PAYMENTS.

### **ARTICLE 13 WORKMANSHIP AND UNAUTHORIZED WORK**

13.1 Work under this Contract shall be performed in a skillful and workmanlike manner. The Project Manager may, in writing, require the Contractor to remove from the work any employee the Project Manager determines incompetent, careless or otherwise objectionable.

13.2 Unauthorized work: Work performed beyond the lines and grades shown on the Contract Drawings, approved Working and Shop Drawings and Extra work done without written authorization, will be considered as unauthorized work, and the Contractor will receive no compensation therefore. If required by the Owner, unauthorized work shall be remedied, removed, or replaced by the Contractor at the Contractor's expense. Upon failure of the Contractor to remedy, remove or replace unauthorized work, the Owner may take courses of action set out in Paragraph 15.3 of Article 15, INSPECTION.

### **ARTICLE 14 SUPERINTENDENCE BY CONTRACTOR**

14.1 The Contractor shall give his personal superintendence to the Work or have a competent foreman or superintendent, hereinafter designated his authorized representative, satisfactory to the Owner, on the Work Site at all times during progress, with authority to act for him. There shall be provided at all times, a reasonable method of communication directly to the Contractor if the Owner experiences any problems or difficulties with the Superintendent.

### **ARTICLE 15 INSPECTION/TESTING**

15.1 Work (which term includes but is not restricted to materials, workmanship and manufacture and fabrication of components) will be subject to inspection and test by the Project Manager at all



reasonable times and at all places prior to acceptance. Such inspection and test is for the sole benefit of the Owner and shall not relieve the Contractor of the responsibility of providing quality control measures to assure that the Work strictly complies with the Contract Documents. No inspection or test by the Project Manager shall be construed as constituting or implying acceptance. Inspection or test shall not relieve the Contractor of responsibility for damage to or loss of the material prior to acceptance, nor in any way affect the continuing rights of the Owner after acceptance of the completed Work.

15.2 The Contractor shall, at his own expense, replace any material or correct any workmanship found not to conform to the contract requirements, unless the Owner consents in writing to accept such material or workmanship with an appropriate adjustment in contract price. The Contractor shall promptly segregate and remove rejected material from the premises at his own expense.

15.3 If the Contractor does not promptly replace rejected material or correct the rejected workmanship, the Owner (1) may, by separate contract or otherwise, replace such material or correct such workmanship and charge the cost thereof to the Contractor, or (2) may terminate the Contractor's right to proceed in accordance with Article 38, TERMINATION FOR DEFAULT-DAMAGES FOR DELAY--TIME EXTENSIONS.

15.4 The Contractor shall give the Project Manager ample notification of inspections and tests, and the Project Manager will perform, except as otherwise specifically provided, said inspections and tests in such manner as not to unnecessarily delay the work. The Owner will have the right to charge to the Contractor any additional cost of inspection or test or when reinspection or retest is necessitated by prior rejection.

15.5 Should it be considered necessary, before acceptance of the entire work, to make an examination of work already completed by removing or tearing out same, the Contractor shall on request promptly furnish all necessary facilities, labor and material therefore. If such work is found to be defective or nonconforming in any material respect, due to the fault of the Contractor or his subcontractors, he shall defray the expenses of such examination and of satisfactory reconstruction. If, however, such work is found to meet the requirements of the Contract, an equitable adjustment will be made in the contract price to compensate the Contractor for the additional services involved in such examination and reconstruction. If completion for the work has been delayed thereby, he will, in addition, be granted an equitable extension of time.

15.6 The Project Manager shall have access to the work during its construction. Work done and materials provided will be subject to the Project Manager's on-site and off-site inspection and approval. When work is to be performed during hours other than during his normal schedule, the Contractor shall so advise the Project Manager not less than 24 hours in advance. The Contractor shall provide access to the work for authorized representatives of the Owner.

15.7 The Project Manager's inspection and approval of work or materials shall not relieve the Contractor of any of his obligations to fulfill the requirements of the Contract Documents. Work and materials not meeting the requirements of the Contract shall not be incorporated in the Work. Unsuitable or substandard work or materials may be rejected by the Project Manager, notwithstanding that such work or materials may have been previously inspected by the Project Manager, or that payment therefore has been included in a progress payment.

## **ARTICLE 16      PERMITS AND COMPLIANCE WITH LAWS**

16.1      The Contractor shall without additional expense to the Owner be responsible for obtaining necessary licenses and permits and for complying with applicable Federal, State, County and Municipal laws, codes and regulations in connection with the commencement of the work. The Contractor is required to supply the Project Manager with complete and final copies of license and permits including final inspection documentation. The Contractor shall be required to obtain permits at his own expense. The Contractor shall protect, indemnify and hold harmless the Owner and the Project Manager and their members, officers, agents and employees against claims and liabilities arising from or based on the violation of requirements of law or permits whether by the Contractor, his employees, agents or subcontractors.

## **ARTICLE 17      RIGHTS IN LAND IMPROVEMENT**

17.1      The Contractor shall make no arrangements with any person to permit occupancy or use of any land, structure or building within the work site for any purpose whatsoever, either with or without compensation, in conflict with any agreement between the Owner and any owner, former owner or tenant of such land, structure or building. The Contractor shall not occupy Owner property outside the work site without obtaining prior written approval from the Owner.

## **ARTICLE 18 DAMAGE TO THE WORK AND RESPONSIBILITY FOR MATERIALS**

18.1      The Contractor shall be responsible for materials delivered and work performed until completion and final acceptance of the entire construction thereof.

18.2      The Contractor shall bear the risk of injury, loss or damage to any and all parts of the work for whatever cause, whether arising from the execution or from the non-execution of work. The Contractor shall rebuild, repair or restore work and materials which have been damaged or destroyed from any cause before completion and acceptance of the work and shall bear the expense thereof. The Contractor shall provide security and drainage and erect temporary structures as necessary to protect the work and materials from damage.

18.3      The Contractor shall be responsible for materials not delivered to the site for which any progress payment has been made to the same extent as if the materials were so delivered.

## **ARTICLE 19 EMERGENCIES**

19.1      In an emergency affecting the safety of life, the work, or adjacent property, the Contractor shall notify the Project Manager as early as possible that an emergency exists. In the meantime, without special instruction from the Project Manager as to the manner of dealing with the emergency, the Contractor shall act at his own discretion to prevent such threatened loss or injury. As emergency work proceeds, the Project Manager may issue instruction, which the Contractor shall follow. The

amount of compensation to which Contractor is entitled on account of emergency work will be determined in accordance with Article 28, CHANGES.

## **ARTICLE 20 NOTICE TO PROCEED**

20.1 The Owner will issue a Notice to Proceed to the Contractor within 15 days after the Contractor has executed the Contract and has delivered the specified bonds and Certificates of Insurance as required by the Owner. Except as specifically authorized in writing by the Owner, the Contractor is not authorized to perform work under the Contract until the effective date of the Notice to Proceed. Within 10 days after the effective date of such Notice to Proceed, the Contractor shall commence work and shall diligently prosecute the Work to completion within the time limits specified. These time periods may be modified by mutual written agreement of both the Owner and Contractor.

## **ARTICLE 21 PROGRESS SCHEDULE AND REQUIREMENTS FOR MAINTAINING PROGRESS**

21.1 The Contractor shall, at the pre-construction meeting, prepare and submit to the Project Manager for approval a practicable schedule, showing the order in which the Contractor proposes to carry on the work, the date on which he will start the several salient features (including procurement of materials, plant and equipment) and the contemplated dates for completing the same. The schedule shall be in the form of a progress chart of suitable scale to indicate appropriately the percentage of work scheduled for completion at any time. The Contractor shall update the chart with the actual progress monthly or at such intervals as directed by the Project Manager, and shall immediately deliver three copies thereof. If the Contractor fails to submit a progress schedule within the time herein prescribed, the Project Manager may withhold approval of progress payment estimates until such time as the Contractor submits the required progress schedule.

21.2 The Contractor shall prosecute the work in accordance with the latest approved Progress Schedule. In the event, that the progress of items along the critical path is delayed, the Contractor shall revise his planning to include additional forces, equipment, shifts or hours as necessary to meet the time or times of completion specified in this Contract. Additional costs resulting therefrom will be borne by the Contractor. The Contractor shall make such changes when his progress at any check period does not meet at least one of the following two tests:

21.2.1 The percentage of dollar value of completed work with respect to the total amount of the Contract is within ten percentage points of the percentage of the Contract time elapsed, or;

21.2.2 The percentage of dollar value of completed work is within ten percentage points of the dollar value which should have been performed according to the Contractors own network analysis previously approved by the Project Manager.

21.3 Failure of the Contractor to comply with the requirements under this provision will be grounds for determination that the Contractor is not prosecuting the work with such diligence as will ensure completion within the time of completion specified in this Contract. Upon such determination, the Owner may terminate the Contractor's right to proceed with the work, or any separate part thereof, in accordance with Article 38, TERMINATION FOR DEFAULT--DAMAGES FOR DELAY-TIME EXTENSIONS of these General Conditions.

## **ARTICLE 22      SUSPENSION OF WORK**

22.1      The Owner reserves the right to suspend, delay or interrupt execution of the whole or any part of the work for such period of time as he may determine to be appropriate for his convenience.

22.2      If the performance of all or any part of the work is, for an unreasonable period of time, suspended, delayed, or interrupted by an act of the Owner in the administration of this Contract or by his failure to act within the time specified in this Contract (or if no time is specified, within a reasonable time), an adjustment shall be made for any increase in the cost of performance of this Contract (excluding profit) necessarily caused by such unreasonable suspension, delay, or interruption and the contract modified in writing accordingly. However, no adjustment shall be made under this clause for any suspension, delay, or interruption to the extent (1) that performance would have been so suspended, delayed or interrupted by any other cause, including the fault or negligence of the Contractor or (2) for which an equitable adjustment is provided for or excluded under any other provision of this Contract.

22.3      No claim under this clause shall be allowed (1) for any costs incurred more than 20 days before the Contractor shall have notified the Owner in writing of the act of failure to act involved (but this requirement shall not apply as to a claim resulting from a suspension order), and (2) unless the claim, in an amount stated is asserted in writing as soon as practicable after the termination of such suspension, delay, or interruption, but not later than the date of final payment under the Contract.

## **ARTICLE 23 FINAL INSPECTION AND ACCEPTANCE**

23.1      Final inspection: When the Contractor notifies the Project Manager in writing that the work has been completed, the Owner will make the final inspection for the purpose of ascertaining that the work has been completed in accordance with the requirements of the Contract Documents.

23.2      Acceptance of the work: When the Owner has made the final inspection and has determined that the work has been completed in accordance with the Contract Documents, the Owner will accept the work. Immediately upon and after Final Acceptance, the Contractor will be relieved of the duty of maintaining and protecting the work as a whole. The Contractor will be relieved of his responsibility for injury to persons or property or damage to the work which occurs after Final Acceptance, except that the Contractor will not be relieved of his responsibility for injury to persons or property arising from his duties and obligations under Article 4, LIABILITY AND INDEMNIFICATION.

23.3      Final Acceptance shall be final and conclusive, and no further performance of work shall be required except with regards to latent defects, fraud or such gross mistakes as may amount to fraud, or with regard to the Owner's rights under any warranty or guarantee. All punch list items must be completed and building permits provided to Owner before final acceptance is issued.

23.4      Date of Substantial Completion for all Work shall be within the number of calendar days bid by the Contractor on the Bid proposal.

23.5      Date of Final Completion shall be the date specified on the Certificate of Final Completion.

## **ARTICLE 24      PROGRESS PAYMENTS**

24.1      The Owner will make progress payments monthly as the work proceeds, on estimates approved by the Project Manager. Payment will be made within 15 days after progress estimates are approved by the Project Manager and Department Head. On request of the Project Manager, the Contractor shall furnish a detailed estimate of the total contract price each showing the amount included therein for each principal category of the work, to provide a basis for determining the amount of progress payments. In the preparation of estimates, the Owner, at its sole discretion, may authorize material delivered on the site and preparatory work done to be taken into consideration which is to be submitted at the pre-construction meeting.

24.2      In making such progress payments, five percent of the estimated amount will be retained until Final Acceptance of the Contract work; in addition, the Owner shall retain from all Progress payments an amount equal to all statutory claims filed against the Contractor. Also, whenever the work is substantially complete, the Owner if it considers the amount retained to be in excess of the amount adequate for its protection, may release to the Contractor all or a portion of such excess amount. Substantial completion as used in this Paragraph 24.2 shall mean the following: Substantial completion of the work or a portion thereof shall be when, as determined by both the Project Manager and the Owner, the construction is sufficiently completed in accordance with the Contract Documents and any modification thereto as provided in the Contract to permit the Owner to occupy the work or a portion of the work for the use which it is intended.

24.3      Material and work covered by progress payments shall become the sole property of the Owner. This provision shall not be construed as relieving the Contractor from the sole responsibility for material and work upon which payments have been made, the restoration of damaged work or as waiving the right of the Owner to require the fulfillment of the terms of the Contract.

## **ARTICLE 25      PAYMENT TO SUBCONTRACTORS**

25.1      The Contractor shall pay all subcontractors for and on account of work performed by such subcontractors in accordance with the terms of their respective subcontract. Prior to final payment an unconditional lien waiver release form will be required by the Owner.

## **ARTICLE 26**

### **PAYMENT OF TAXES**

26.1      The price or prices for the work will include full compensation for taxes that the Contractor is or may be required to pay. The Contractor shall bear the risk of any added or increased taxes occurring during the prosecution of the work. A change in taxes shall under no circumstances entitle the Contractor to an adjustment under the Contract.

26.2      The Contractor's attention is directed to the fact that this project is exempt from payment of City of Greeley Sales and Use taxes, and such taxes must not be included in the amount of bid.

26.3 The Contractor shall pay all sales and use taxes required to be paid, shall maintain such records in respect of his work, which shall be separate and distinct from all other records maintained by the Contractor and shall be available for inspection by the Owner at any and all reasonable times, and shall furnish the Owner with such data, as may be necessary to enable the Owner to obtain any refunds of such taxes which may be available to the Owner under the laws, ordinances, rules or regulations applicable to such taxes. The Contractor shall require each of his subcontractors to pay all sales and use taxes required to be paid and to maintain such records and furnish the Contractor with such data as may be necessary to enable the Owner to obtain a refund of the taxes paid by such subcontractors.

## **ARTICLE 27**

### **FINAL PAYMENT**

27.1 After the Work has been accepted by the Owner, subject to the provisions of Article 11, WARRANTY OF WORK and Article 23, FINAL INSPECTION AND ACCEPTANCE of these General Conditions, a final payment due the Contractor under this Contract shall be paid upon the presentation of properly executed voucher and after the Contractor shall have furnished the Owner with a release of all claims against the Owner arising by virtue of this Contract, other than claims in stated amounts as may be specifically excepted by the Contractor from the operation of the release. If the Contractor's claim to amounts payable under the contract has been assigned under the assignment of Claims Act of 1940, as amended (31 U.S.C. 203, 41 U.S.C. 15), a release may also be required of the assignee.

27.2 If any mechanic's or material man's lien or notice of claim of such lien is filed or recorded against the project for labor, materials, supplies or equipment claimed to have been furnished to or incorporated into the Work, or for other alleged contribution thereto, the Owner will have the right to retain from payments otherwise due the Contractor, in addition to other amounts properly withheld under this Article or under other provisions of the Contract, an amount equal to such lien or liens claimed.

27.3 Further, the Owner will have the right to retain from final payment an amount equal to all liquidated damages claimed by the Owner.

27.4 Retainages held by the Owner for any state or federal statutory claim arising out of the project will be held by the Owner in addition to all retainages held under the provisions of the Contract.

## **ARTICLE 28**

### **CHANGES**

28.1 The Owner may, at any time, without notice to the sureties, by written notice or order designated or indicated to be a Change Notice or Change Order, make any change in the work within the general scope of the Contract in accordance with all of the Owner's processes and procedures whether or not set forth herein, including but not limited to changes:

28.1.1 In the Contract (including drawings and designs);

28.1.2 In the method or manner of performance of the work;

28.1.3 In Owner furnished facilities, equipment, materials, services, or site; or

28.1.4 Directing acceleration in performance of the work.

28.2 Any other order (which terms as used in Paragraph 28.2 of this Article shall include direction, instruction, interpretation, or determination) from the Project Manager, which causes any change, shall be treated as a Change Notice under this Article provided that the Contractor gives the Project Manager written notice stating the date, circumstances and source of the order, and that the Contractor regards the order as a Change Notice. The Contractor shall notify the Project Manager when he receives direction, instruction, interpretation or determination from any source which may cause any change in the work. Such notification shall be given to the Project Manager before the Contractor acts on said direction, instruction, interpretation or determination.

28.3 Except as herein provided, no order, statement, or conduct of the Architect/ Project Manager or any other person shall be treated as a change under this Article or entitle the Contractor to an equitable adjustment hereunder.

28.4 If any change under this Article causes an increase or decrease in the Contractor's cost of, or the time required for, the performance of any part of the Work under this Contract, whether or not changed by an order, an equitable adjustment will be made and the Contract modified accordingly by a written Change Order; provided, however, that except for claims based on errors in the Contract Documents, no claim for change under Paragraph 28.2 of this Article will be allowed for costs incurred more than 20 days before the Contractor gives written notice as herein required; and provided that in the case of errors in the Contract Documents for which the Owner is responsible, the adjustment will include increased cost, reasonably incurred by the Contractor in attempting to comply with such errors in the Contract Documents. No claim shall be made for the type of errors in the Contract Documents which are set forth in Article 2, INTERPRETATION.

28.5 If the Contractor intends to assert a claim for an equitable adjustment under this Article, he shall, within 30 days after receipt of a written Change Order under Paragraph 28.1 of this Article or the furnishing of a written notice under Paragraph 28.2 of this Article, submit to the Project Manager a written statement setting forth the general nature and monetary extent of such claim, unless this period is extended in writing by the Owner. The statement of claim hereunder may be included in the notice under Paragraph 28.2 of this Article.

28.6 No claim by the Contractor for an equitable adjustment hereunder will be allowed unless asserted as described in Paragraphs 28.4 and 28.5 above.

28.7 Payment will not be made under the provisions of this Article for such work or materials which are so required to be done or furnished in or about or for the performance of the Work and which are not mentioned, specified or indicated or otherwise provided for in this Contract or in the Contract Documents so far as such work or materials may be, in the opinion of the Project Manager, susceptible of classification under or reasonably inferred to be included in the Bid Items of the Bid Form.

28.8 In case the Contractor is ordered to perform work under this Article for which payments are not determined under Paragraph 28.7 of this Article, which in the opinion of the Owner it is impracticable to have performed by the Contractor's own employees, the Contractor will, subject to the approval of the Owner, be paid the actual cost to him of such work and, in addition thereto, a negotiated amount to cover the Contractor's superintendence, administration and other overhead expenses. The terms and conditions of any subcontract which the Contractor may propose to enter into in connection with work under the provision of this Article shall be subject to the written approval of the Project Manager before such subcontract is made. The contractor shall be responsible for the work of the subcontractors and shall be liable therefore as if he had performed the work directly.

28.9 In cases other than those described in Paragraphs 28.7 and 28.8 above, the Owner and the Contractor (on his own behalf and on behalf of his subcontractors) shall endeavor to negotiate a reasonable contract price and line adjustment in a Change Order on terms appropriate to the changed work. The Contractor will be required to submit a sufficiently detailed price proposal supported with sufficient documentation that (1) the Owner can determine that the proposal reflects all impacts on the Contract from work additions, deletions and modifications shown in the Change Notice being priced, (2) the proposed prices are set out in such a way that their reasonableness can be evaluated against prices based on adequate price competition, bid unit prices, established catalog or market prices of commercial items sold in substantial quantities to the general public, prices set by law or regulation, recognized published price lists and indices, independently developed cost estimates and other appropriate price comparisons, and (3) contract provisions relating to Contract changes costing over \$100,000.00 are complied with. If any prices or other aspects are conditional, such as on firm orders being made by a certain date or the occurrence or nonoccurrence of an event, the Contractor shall identify these aspects in his proposal. A negotiated Change Order shall set out prices, scheduling requirements, time extensions and all costs of any nature arising out of the issuance of a Change Notice except for those cost and time aspects explicitly reserved on the face of the Change Order. Except for these explicit reservations, the execution of a Change Order by both parties will be deemed accord and satisfaction of all claims of any nature arising from the issuance of the Change Notice negotiated.

28.10 In the event the Contractor and the Owner are unable to agree upon the Contractor's entitlement to an equitable adjustment or upon the amount thereof, or in the event that it is in the best interest of the Owner to have the Work proceed pending negotiation of amount of an equitable adjustment, the Owner may direct the Contractor to perform the Work in accordance with the Owner order, direction, instruction, interpretation, or determination, with any Contract price adjustments and progress payments for the Work to be determined on a Force Account basis in accordance with Article 36. The Contractor shall continue diligently to perform the Contract in accordance with the Owner's order, direction, instruction, interpretation, or determination during negotiations with respect to the Contractor's entitlement to an equitable adjustment hereunder or to the amount of any Contract price adjustment or time extension. The Contractor and the Owner may agree on certain aspects of an equitable adjustment and take those aspects out of operation of Force Account provisions. In the event a mutually agreeable equitable adjustment cannot be made, the Contractor shall continue diligently to perform the orders as he proceeds with his remedies under Article 35, DISPUTES, and shall continue to receive compensation on a Force Account basis.

28.11 For contract changes, the Owner, State and Government or their representative shall have the audit and inspection rights as described below:



28.11.1 Where the agreed payment method for any contract changes is to be by cost reimbursement, time and material, labor hours or any combination thereof, the Contractor shall maintain and the Owner or its representatives shall have the right to examine books, records, documents and other evidence and accounting principles and practices sufficient to reflect properly all direct and indirect costs of whatever nature claimed to have been incurred and anticipated to be incurred for the performance of the contract changes under this sub article.

28.11.2 Contract changes exceeding \$100,000.00 in cost: For submitted cost and pricing data in connection with pricing a contract modification referred to in this sub article, unless such pricing is based on bid unit prices, adequate price competition, established catalog or market prices of commercial items sold in substantial quantities to the public, or prices set by law or regulation, the Owner or his representatives and the Comptroller General of the United States and his representatives who are employees of the United States shall have the right to examine all books, records, documents and other data of the Contractor related to the negotiation of or performance under the contract Change Orders for the purpose of evaluating the accuracy, completeness and currency of the cost or pricing data submitted. The right of examination shall extend to all documents necessary to permit adequate evaluation of the cost or pricing data submitted, along with the computations and projections used therein.

28.11.3 Contract changes exceeding \$10,000.00 but not \$100,000.00 in cost: The Owner or his representatives prior to the execution of any contract Change Order in this sub article or for a period of twelve months after execution shall, unless such pricing is based on bid unit prices, adequate price competition, established catalog of market prices or commercial items sold in substantial quantities to the public, or prices set by law or regulation, have the right to examine all books, records, documents, and other data of the Contractor relating to the negotiation and contract Change Order for the purpose of evaluating the accuracy, completeness, and currency of the data is submitted upon which negotiation is or has been based. To the extent the examination reveals inaccurate, incomplete or noncurrent data, the Project Manager may renegotiate the contract Change Order price based on such data.

28.11.4 Contract changes of less than \$10,000.00 in cost: The Owner may require from the Contractor appropriate documentation to support the prices being negotiated for contract changes under this sub article, and may refuse to complete negotiations until satisfactory documentation is submitted.

28.11.5 Availability: The materials described in Paragraphs 28.11.1 and 28.11.2 above shall be available at the office of the Contractor at all reasonable times for inspection, audit or reproduction until three years from the date of final payment under this Contract and for records which relate to Article 35, DISPUTES, or litigations or the settlement of claims arising out of the negotiation or the performance of contract changes over 100,000.00, records shall be made available until such litigations or claims have been resolved.

28.11.6 The Contractor shall insert a clause containing all the provisions in this Paragraph 28.11, including this subparagraph 28.11.6, in all subcontracts hereunder except altered as necessary for proper identification of the contracting parties and Owner.

28.11.7 For the purposes of Paragraph 28.11 of this Article, costs shall include liquidated damages which would be assessed if extension(s) of time were not granted by contract Change Order.

28.11.8 The requirements of this audits and records article are in addition to other audit, inspection and record keeping provisions elsewhere in the Contract Documents.

28.12 Changes involving aggregate increases and decreases in excess of \$100,000.00 shall be subject to the following:

28.12.1 A change involves aggregate increases and decreases in excess of \$100,000.00 if the total value of work affected, without regard to the arithmetic sign, exceeds this amount; for example, a change order adding work in the amount of \$75,000.00 and deleting work in the amount of \$50,000.00 will be considered to involve aggregate increases and decreases of \$125,000.00.

28.12.2 The Contractor shall submit in support of all items not based upon unit prices or lump sum prices contained in the Contract or upon the established prices at which commercial items are sold in substantial quantities to the public, statements by his vendors that the prices charged the Contractor are not greater than the prices charged by the respective vendors to their most favored customers for the same items in similar quantities.

28.12.3 Price reductions for Defective Cost or Pricing Data--Pricing Adjustments: If any price, including profit and fee, negotiated in connection with any price adjustment was increased by any significant sums because:

28.12.3.1 The Contractor furnished cost or pricing data which were not complete, accurate, and current as certified in the Contractor's Certificate of Current Cost or Pricing Data;

28.12.3.2 A subcontractor, pursuant to Paragraph 28.13 of this Article entitled Subcontractor Cost or Pricing Data--Pricing Adjustments or any subcontract provision therein required, furnished costs or pricing data which were not complete, accurate, and current as certified in the Subcontractor's Certificate of Current Cost or Pricing Data;

28.12.3.3 The subcontractor or his prospective subcontractor furnished cost or pricing data which were required to be complete, accurate, and current and to be submitted to support a subcontract cost estimate furnished by the Contractor but which were not complete, accurate, and current as of the date certified in the Contractor's Certificate of Current Cost or Pricing Data; or

28.12.3.4 The Contractor or a subcontractor or his prospective subcontractor furnished any data, not within subparagraphs 28.12.3.1, 28.12.3.2, or 28.12.3.3 above, which were not complete, accurate, and current as submitted, the price shall be reduced accordingly and the Contract shall be modified in writing as may be necessary to reflect such reduction. Any reduction in the Contract Price due to defective subcontract data of a prospective subcontractor, when the subcontract was not subsequently awarded to such subcontractor, will be limited to the amount (plus applicable overhead and profit markup) by which the actual subcontract, or actual cost to the Contractor if there was no subcontract, was less than the prospective subcontract cost estimate submitted by the Contractor, provided the actual subcontract price was not affected by defective cost or pricing data.

### 28.13 Subcontract Cost of Pricing Data-- Pricing Adjustment:

28.13.1 When negotiating a change involving increases or decreases in excess of \$100,000.00, the Contractor shall require subcontractors hereunder to submit cost or pricing data under the following circumstances. Prior to award of any cost-reimbursement type, incentive or price redeterminable subcontract;

28.13.1.2 Prior to the award of any subcontract the price of which is expected to exceed \$100,000.00;

28.13.1.3 Prior to the pricing of any subcontract change modifications for which the price is expected to exceed \$100,000.00, except in the case of 28.13.1.2 and 28.13.1.3 where the price is based on adequate price competition, established catalog or market prices, commercial items sold in substantial quantities to the general public, or prices set by law or regulation.

28.13.2 The Contractor shall require subcontractors to certify to the best of their knowledge and belief that the cost and pricing data submitted under subparagraph 28.13.1 of this Article are accurate, complete, and current as of the date of execution, which date shall be as close as possible to the date of agreement on the negotiated price of the contract Change Order.

28.13.3 The Contractor shall insert the substance of Paragraph 28.13 of this Article, including this subparagraph 28.13.3, in each subcontract hereunder which exceeds \$100,000.00.

## **ARTICLE 29                      PERFORMANCE BOND AND LABOR AND MATERIAL PAYMENT BOND**

29.1 The Contractor shall furnish a Performance Bond in the amount equal to one hundred percent (100%) of the Contract Sum as security for the faithful performance of this Contract and also a Labor and Material Payment Bond in an amount not less than one hundred percent (100%) of the Contract Sum or in a penal sum not less than that prescribed by State, or local law, as security for the payment of all persons performing labor on the Project under this Contract and furnishing materials in connection with this Contract. The Performance Bond and the Labor and Material Payment Bond may be in one or in separate instruments in accordance with local law and shall be delivered to the Owner not later than the date of execution of the Contract.

29.2 Performance Bonds, Labor and Material Payment Bonds and other such sureties shall provide that the surety and the Contractor are both jointly and severally liable and obligated under respective Bond or other surety agreement and shall incorporate acknowledge of applicable provisions of state law into all documents furnished in connection with the project.

## **ARTICLE 30 DIFFERING SITE CONDITIONS**

30.1 The Contractor shall within 10 days of actual or constructive notice of a differing site condition, promptly, and before such conditions are disturbed, notify the Project Manager in writing of: (1) subsurface or latent physical conditions at the site differing materially from those indicated in

the Contract Documents, or (2) unknown physical conditions at the site, of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract. The Project Manager will promptly investigate the conditions, and if such conditions materially differ and cause an increase or decrease in the Contractor's cost of, or the time required for, performance of any part of the work under the Contract, whether or not changed as a result of such conditions, an equitable adjustment may be made subject to Owner's approval and the Contract modified in writing accordingly.

30.2 No claim of the Contractor under this Article will be allowed unless the Contractor has given the notice required in Paragraph 30.1 of this Article.

30.3 No claim by the Contractor for an equitable adjustment hereunder will be allowed if asserted after final payment under this Contract.

## **ARTICLE 31 CONTRACTOR PROPOSALS**

31.1 The Contractor may at any time submit to the Project Manager for his review proposed modifications to the Contract Documents, supported by a cost/price proposal. Upon acceptance of the proposed modifications by the Owner, a Change Order will be issued. Denial of the proposed modification will neither provide the Contractor with any basis for claim for damages nor release the Contractor from contractual responsibilities. An equitable adjustment in the form of a contract price reduction will be made if the change results in a reduction of the cost of performance and the Contractor will not be entitled to share in said savings unless the proposal is made under Paragraph 31.2 of this Article. Except as provided in Paragraph 31.2 of this Article, the Contractor will not be compensated for any direct, incidental or collateral benefits or savings the Owner receives as a result of the proposal.

31.2 Value Engineering Change Proposals: The Contractor may submit to the Project Manager one or more cost reduction proposals for changing the Contract requirements. The Proposals shall be based upon a sound study made by the Contractor indicating that the proposal:

31.2.1 Will result in a net reduction in the Total Contract amount;

31.2.2 Will not impair any essential function or characteristic of the Work such as safety, service life, reliability, economy of operation, ease of maintenance and necessary standardized features.

31.2.3 Will not require an unacceptable extension of the contract completion time; and

31.2.4 Will require a change in the Contract Documents and such change is not already under consideration by the Owner.

31.3 The Owner may accept in whole or in part any proposal submitted pursuant to the previous Paragraph 31.2 by issuing a Change Order which will identify the proposal on which it is based. The Change Order will provide for an equitable adjustment in the Contract Price and will revise any other affected provisions of the Contract Documents. The equitable adjustment in the Contract price will be established by determining the net savings resulting from the accepted change. The net savings resulting from the change will be shared between the Contractor and the Owner on the basis of 50

percent for the Contractor and 50 percent for the Owner and will be limited to this contract for any one Value Engineering Change Proposal. Net savings will be determined by deducting from the estimated gross savings, the Contractor's costs of developing and implementing the proposal (including any amount attributable to a subcontractor) and the estimated amount of increased costs to the Owner resulting from the change, such as evaluation, implementation, inspection, related items, and the Owner-furnished material. Estimated gross savings will include Contractor's labor, material, equipment, overhead, profit and bond. The Contract price will be reduced by the sum of the Owner's costs and share of the net savings. For the purpose of this Article, the applicable provisions of Article 28, CHANGES, shall be used to determine the equitable adjustment to the Contract price.

31.4 The Owner will not be liable for delay in acting upon, or for failure to act upon, any proposal submitted pursuant to Paragraph 31.2 of this Article. The decision of the Owner as to the Acceptance or rejection of any such proposal under the Contract will be final. The submission of a proposal by the Contractor will not in itself affect the rights or obligations of either party under the Contract.

31.5 The Contractor shall have the right to withdraw part or all of any proposal he may make under Paragraph 31.2 of this Article at any time prior to acceptance by the Owner. Such withdrawal shall be made in writing to the Project Manager. Each such proposal shall remain valid for a period of 60 days from the date submitted. If the Contractor wishes to withdraw the proposal prior to the expiration of the 60-day period, he will be liable for the cost incurred by the Owner in reviewing the proposal.

31.6 The Contractor shall specifically identify any proposals under Paragraph 31.2 of this Article with the heading "Value Engineering Change Proposal", or the proposal will be considered as made under Paragraph 31.1 of this Article.

31.7 The Contractor, in connection with each proposal he makes for a Contract Change Notice under this Article shall furnish the following information:

31.7.1 a description of the difference between the existing Contract requirement and the proposed change, and the comparative advantages and disadvantages of each, justification when a function or characteristic of an item is being altered, and the effect of the change on the performance of the end item;

31.7.2 an analysis and itemization of the requirements of the Contract which must be changed if the Value Engineering Change Proposal is accepted and a recommendation as to how to make each such change (e.g., a suggested specification revision);

31.7.3 a separate detailed cost estimate for both the existing Contract requirement and the proposed change to provide an estimate of the reduction in costs, if any, that will result from acceptance of the Value Engineering Change Proposal taking into account the costs of development and implementation by the Contractor;

31.7.4 a prediction of any effects the proposed change would have on collateral costs to the Owner such Government-furnished property costs, costs of related items, and costs of maintenance and operation;

31.7.5 a statement of the time by which a contract modification accepting the Value Engineering Change Proposal must be issued so as to obtain the maximum cost reduction, noting any effect on the contract completion time or delivery schedule; and

31.7.6 identification of any previous submission of the Value Engineering Change Proposal to the Owner, including the dates submitted, the numbers of contracts involved, and the previous actions by the Owner, if known.

## **ARTICLE 32      EXTENSION OF TIME**

32.1 In addition to the provisions stated in Article 38, the Contractor will be granted an extension of time and will not be assessed liquidated damages for any portion of the delay in completion of the Work, performed under the latest approved progress schedule, arising from acts of God, war, fires, floods, epidemics, quarantine restrictions, freight embargoes, or weather more severe than the norm, provided that the aforesaid causes were not foreseeable and did not result from the fault or negligence of the Contractor, and provided further that the Contractor has taken reasonable precautions to prevent further delays owing to such causes, and has notified the Project Manager in writing of the cause or causes of delay within five days from the beginning of any such delay. Within 15 days after the end of the delay, the Contractor shall furnish the Project Manager with detailed information concerning the circumstances of the delay, the number of days actually delayed, the appropriate Contract Document references, and the measures to be taken to prevent or minimize the delay. Failure to submit such information will be sufficient cause for denying the delay claims. The Owner will ascertain the facts and the extent of the delay, and its findings thereon will be final and conclusive to provisions under Article 35, DISPUTES. The extension of time granted for these reasons shall not be the basis for additional compensation for any costs incurred during the time of delay.

32.1.1 Every effort shall be made by the Contractor to complete the project within the "Contract Time". The "Contract Time" anticipates "Normal" weather and climate. The Contractor's schedule must anticipate normal adverse weather delays on all weather dependent activities. The following specifies the procedure for determining time extensions for unusually severe weather. Listed below are the anticipated numbers of calendar days lost to normal adverse weather for each month.

### **Monthly Anticipated Calendar Days Lost to Adverse Weather Conditions**

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	(7)	(4)	(4)	(6)	(3)	(4)
(2)	(3)	(3)	(2)	(5)													

The above schedule of anticipated adverse weather days will constitute the base line for monthly (or portion thereof) weather time evaluations. It is assumed that the work will be carried out Mondays through Fridays (holidays excepted) unless and approved construction schedule or written authorization from the Owner indicates otherwise.

An actual adverse weather day must prevent work for 50 percent or more of the Contractor's workday. When the Contractor anticipates documenting a weather day, he/she shall first notify the Project Manager or his/her designee observing the construction to determine whether or not work can proceed or if work is delayed due to adverse weather or the effects thereof. If in agreement, the

Contractor shall formally request a weather day in writing to the Owner's Project Manager or his/her designee. The Contractor shall also notify the Owner's Project Manager in writing or his/her designee of any disagreement as to whether or not work could have proceeded on a given date within 2 calendar days of that date. The final decision regarding an adverse weather day will be made by the Project Manager or his/her designee.

The number of workdays delayed due to adverse weather or the effects thereof will then be converted to Calendar Days. Weekends and holidays will only count as calendar day delays if a workday delayed due to adverse weather is counted before and after the weekend/holiday. The number of calendar days of delay due to adverse weather or the impact thereof will then be compared to the monthly adverse weather schedule above. The Contract time period will then be increased by change order for the number of calendar days that are in excess of the above schedule and a new Contract Completion day and date will be set.

32.1.2 An extension of time will not be granted for a delay caused by a shortage of materials, except Owner-furnished materials, unless the Contractor furnishes to the Project Manager documentary proof that he has diligently made every effort to obtain such materials from every known source within reasonable reach of the Work. The Contractor shall also submit proof that the inability to obtain such materials when originally planned did in fact cause a delay in final completion of the Work which could not be compensated for by revising the sequence of his operations. Only the physical shortage of material will be considered under these provisions as a cause for extension of time. No consideration will be given to any claim that material could not be obtained at reasonable, practical, or economical costs, unless it is shown to satisfaction of the Project Manager that such material could have been obtained only at exorbitant prices, entirely inconsistent with current rates taking into account the quantities involved and the usual practices in obtaining such quantities.

32.2 A Change Order will be furnished to the Contractor within a reasonable period of time after approval of a request for extension of time, specifying the number of days allowed, if any, and the new date for completion of the Work or specified portions of the Work.

32.3 See also Article 38, TERMINATION FOR DEFAULT--DAMAGES FOR DELAY--TIME EXTENSIONS.

### **ARTICLE 33**

#### **NOTICE OF POTENTIAL CLAIM**

33.1 The Contractor will not be entitled to additional compensation otherwise payable for an act or failure to act by the Owner, the happening of any event or occurrence, or any other cause, unless he shall have given the Project Manager a written notice of potential claim therefore as specified in this Article.

33.2 The written notice of potential claim shall set forth the reasons for which the Contractor believes additional compensation will or may be due, the nature of the costs involved, and insofar as possible, the amount of the potential claim. If based on an act or failure to act by the Owner, such notice shall be given to the Project Manager prior to the time that the Contractor has started performance of work giving rise to the potential claim for additional compensation. Notice shall be given within five days after the happening of the event or occurrence giving rise to the potential claim.

33.3 It is the intention of this Article that differences between the parties arising under and by virtue of the contract shall be brought to the attention of the Project Manager at the earliest possible time in order that such matters may be settled, if possible, or other appropriate action promptly taken.

33.4 The notice requirements of this Article are in addition to those required in other Articles of the General Conditions.

## **ARTICLE 34 SUBMITTAL OF CLAIMS**

34.1 Claims filed by the Contractor shall contain sufficient detail to enable the Owner to ascertain the basis and amount of said claims. The Owner will review and evaluate the Contractor's claims. It will be the responsibility of the Contractor to furnish when requested by the Project Manager such further information and details as may be required to determine the facts or contention involved in his claims. Failure to submit such information and details will be sufficient cause for denying the Contractor's claims.

34.2 Each claim the Contractor may make for equitable adjustment on account of delay for any cause shall be accompanied by a progress schedule reflecting the effects of the delay and proposals to minimize these effects. If no progress schedule has been submitted to the Project Manager reflecting conditions prior to the delay for which relief is sought, then a progress schedule so reflecting these conditions shall be prepared and submitted with the claim.

34.3 Depending upon the grounds for relief and the nature of relief sought, additional submittals and conditions upon submitting claims may be required elsewhere in these General Conditions.

34.4 In no event shall claims be made after final payment is made under Article 27, FINAL PAYMENT, of these General Conditions.

34.5 Inasmuch as notice of potential claim requirements of Article 33, NOTICE OF POTENTIAL CLAIM, are intended to enable the Project Manager to investigate while facts are fresh and to take action to minimize or avoid a claim which might be filed thereafter, the Contractor's failure to make the required notice on time is likely to disadvantage the Owner. Therefore no claim for which a notice of potential claim is required will be considered unless the Contractor has complied with the notice of Article 33, NOTICE OF POTENTIAL CLAIM.

## **ARTICLE 35 DISPUTES**

35.1 General: Notwithstanding any other provisions of this Contract, disputes and disagreements by and between the Owner and the Contractor shall be resolved through progressive, sequential process of negotiation, mediation, and in certain cases, arbitration. For contracts which are for \$250,000 or less, amounts in dispute which are less than \$10,000 shall not progress beyond negotiation and shall ultimately be decided by the Owner if not by mutual agreement. For contracts which are for more than \$250,000, amounts in dispute which are less than \$25,000 should not progress beyond negotiation. For all contracts, amounts in dispute greater than those amounts set forth above, but less than \$100,000 shall be resolved through a sequential process of negotiation, mediation, and binding arbitration. Amounts in dispute which are \$100,000 or more shall be resolved through a sequential process of negotiation, mediation, and thence either arbitration or litigation.



35.2 Negotiation: In the event of disputes, unsettled claims, questions or disagreements between the contractor and the City relating to or arising out of the provisions of this Contract, the representatives of those parties shall meet promptly in recognition of mutual interests and in a good faith effort to resolve the dispute. Either the Contractor or the City shall arrange for this meeting at a time and place within the City of Greeley, mutually acceptable to both parties, within fifteen (15) days of notification of the dispute, unsettled claim, question, or disagreement between the parties. Seven (7) days prior to the meeting, the initiating party shall deliver to the other party, a written and complete summary of the evidence and arguments substantiating its claim. If the parties do not reach a solution within thirty (30) days after said initial meeting, then upon notice of either party to the other, the dispute, claim, question, or difference, may be referred to a mediator pursuant to Section 35.3. The parties can extend the negotiation period by mutual written agreement.

35.3 Mediation: If the dispute, claim, question, or difference is not resolved by negotiation within thirty (30) days after the initial meeting between the parties or within the extended period agreed upon, the parties agree to next request that the American Arbitration Association provide a mediator to assist the Owner and Contractor in resolving the dispute, claim, question, or difference. The rules of mediation shall be the Construction Industry Mediation Rules of the American Arbitration Association. A different mediation/dispute resolution agency may be selected for mediation upon the mutual written agreement between the parties. The dispute resolution agency shall select a qualified mediator who shall have a background in construction. The selected mediator may be rejected by the parties only for bias. The mediator shall have thirty (30) days from the time of appointment to meet with the parties and sixty (60) days from the time of the appointment to resolve the dispute unless the parties mutually consent to an extension of the sixty day deadline. All reasonable fees, costs, and expenses of the mediator, the mediator's association and the mediation agency, shall be borne equally by the parties. Each party shall bear the expense of its own counsel, experts, witnesses, and preparation and presentation of proofs at mediation.

The Contractor shall not cause a delay of work during mediation proceedings except by mutual agreement. All mediation proceedings shall be conducted in the City of Greeley, unless an alternate location is agreed upon in writing by the Owner and the Contractor.

**Amounts in dispute which are less than \$10,000 shall not progress beyond mediation.**

35.4 Litigation prerequisites: The procedures enumerated in Sections 35.2 and 35.3 shall be a prerequisite to the filing of any litigation between the parties to the Contract. Failure of the Contractor to follow the provisions of Section 35.2 and Section 35.3 shall be a complete defense, and grounds for immediate dismissal of any litigation filed prior to Contractor engaging in negotiation and mediation with the City of Greeley as provided above. Litigation may be filed only if the amount in dispute is \$100,000 or more. In the event litigation is filed by and between the parties after mediation, venue and jurisdiction of any and all suits and causes of action in connection with this Contract shall lie exclusively in Weld County, Colorado.

35.5 Arbitration: After mediation, instead of litigation, any remaining unresolved controversy or claim arising out of or relating to this Contract or the performance or breach thereof, may be settled by arbitration in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association. For amounts in dispute which are \$100,000 or more, arbitration shall be

engaged only upon mutual written agreement by the Owner and the Contractor, and the written agreement shall specify whether the arbitration shall be binding or nonbinding; however, amounts in dispute which are less than \$100,000 shall necessarily be settled by binding arbitration. The sole arbitrator shall be appointed by the Arbitration Association, unless a different arbitrator or dispute resolution agency is mutually agreed upon. The award of the arbitrator shall be accompanied by a reasoned opinion, and shall include findings of fact and conclusions. All fees and expenses of the arbitration, including the expense of each party's counsel, experts, witnesses, and preparation and presentation of proofs, shall be borne by the party against whom arbitration judgment is made.

35.6 Litigation: Each party shall bear its own litigation fees and expenses, including the expense of its counsel, experts, witnesses, and preparation and presentation of proofs, regardless of the prevailing party.

## ARTICLE 36

### FORCE ACCOUNT WORK

36.1 This Article shall become operative upon failure of the Contractor and the Owner to arrive at an amount of compensation under Article 28, CHANGES. In the event that no equitable adjustment is arrived at either by mutual agreement or pursuant to the Article 35, DISPUTES, the compensation paid hereunder will be the total compensation.

36.2 Work Performed by or for Contractor: The Contractor will be paid for labor, materials, and equipment as hereinafter provided, except where agreement has been reached to pay in accordance with Paragraph 36.3 of this Article. The following percentages, as full compensation for profit, overhead and small tools, will be added to the totals computed as provided in subparagraphs 36.2.1 through 36.2.3 of this Article.

	Labor 25 percent	Materials 20
	percent	
Equipment	10 percent	

Labor, materials, and equipment shall be furnished by the Contractor or by a subcontractor. When work paid on a force account basis is performed by forces other than the Contractor's, the Contractor shall reach agreement with such other forces as to the distribution of the payment made by the Owner for such work and, except as specified herein, no additional payment therefore will be made by the Owner by reason of performance of work by a subcontractor or by others. In addition to the markups, if any, for labor, equipment, and materials, for subcontracted work, the Contractor may add an additional five percent markup. The cost of subcontracted work will be the actual cost to the contractor for work performed by a subcontractor as computed in accordance with this Paragraph 36.2 and its subparagraphs 36.2.1, 36.2.2, and 36.2.3.

36.2.1 Labor: The cost of labor used in performing the work, whether the employer is the Contractor or a subcontractor, will be the sum as determined on the basis of the following three subparagraphs:

36.2.1.1 The gross actual wages, including income tax withholdings but not including employer payments to or on behalf of workmen for health and welfare, pension, vacation, insurance and similar purposes.

36.2.1.2 To the gross actual wages, as defined in the previous subparagraph,

36.2.1.1, will be added a percentage based upon current State and Federal laws and applicable labor contracts concerning payments made to or on behalf of workmen other than actual wages, which percentage will constitute full compensation for all payments imposed by State and Federal laws and for all other payments made to or on behalf of the workmen, other than actual wages as defined in the previous subparagraph 36.2.1.1 and the subsistence and travel allowance as specified in the following subparagraphs 36.2.1.3. The Contractor shall compute a separate percentage for each craft, or a composite percentage for all crafts, if so approved by the Owner. Computed percentages shall be submitted to the Project Manager for approval by the Owner.

36.2.1.3 Subsistence and travel allowance paid to workmen as required by established agreements.

36.2.1.4 The charges for labor shall include all classifications up to but not including foremen, and when authorized by the Owner, shall include foremen engaged in the actual and direct performance of the work. Labor charges shall not include charges for assistant superintendents, office personnel, timekeepers, and maintenance mechanics, unless authorized by the Owner in advance of the start of work.

36.2.2 Materials: The cost of materials required for the accomplishment of the work will be delivered cost to the purchaser, whether contractor or subcontractor, from the supplier thereof, except as the following are applicable:

36.2.2.1 If a cash or trade discount by the actual supplier is offered or available to the Contractor, it shall be credited to the Owner notwithstanding the fact that such discount may not have been taken.

36.2.2.2 If materials are procured by the Contractor by a method which is not a direct purchase from and a direct purchase from and a direct billing by the actual supplier, the cost of such materials will be deemed to be the price paid to the actual supplier, as determined by the Owner. No additional markup for supplier work will be allowed except to the extent of actual cost to the Contractor in handling the material, not to exceed five percent of the price paid to actual supplier.

36.2.2.3 If the materials are obtained from a supply or source owned wholly or in part by the Contractor, payment therefore will not exceed the price paid for similar materials furnished from said source on Contract Items or the current wholesale price for such materials delivered to the work site, whichever price is lower.

36.2.2.4 If the cost of the materials is, in the opinion of Owner, excessive, then the cost of such materials will be deemed to be the lowest current wholesale price at which such materials are available in the quantities concerned, delivered to the job site, less discounts as provided in subparagraph 36.2.2.1 of this Article.

36.2.2.5 If the Contractor does not furnish satisfactory evidence of the cost of such materials from the actual supplier thereof, the cost will be determined in accordance with subparagraph 36.2.2.4 of this Article.

36.2.2.6 The Contractor shall have no claims for costs and profit on Owner-furnished materials.

36.2.3 Equipment: The Contractor will be paid for the use of contractor-owned or rented equipment at the rental rates shown in the Colorado State Department of Highways Construction Equipment Rental Rate Schedule, except as modified below, which edition shall be the latest edition in effect at the time of commencement of the Force Account work. For equipment used in excess of eight hours per day, the rental rate shall be 60 percent of the listed hourly rate. If it is deemed necessary by the Contractor to use equipment not listed in the C.D.O.H. Construction Equipment Rental Rate Schedule, the Contractor shall furnish the necessary cost data and paid invoices to the Project Manager for his use in establishment of such rental rate.

36.2.3.1 The rates paid as above provided will include the cost of fuel, oil, lubricants, supplies, small tools, necessary attachments, repairs and maintenance, depreciation, storage, insurance and incidentals.

36.2.3.2 Equipment operators will be paid for as stipulated in subparagraph 36.2.1 of this Article.

36.2.3.3 Equipment shall be in good working condition and suitable for the purpose for which the equipment is to be used.

36.2.3.4 Unless otherwise specified, manufacturer-approved modifications shall be used to classify equipment for the determination of applicable rental rates. Equipment which has no direct power unit shall be powered by a unit of at least the minimum rating recommended by the manufacturer of that equipment.

36.2.3.5 Individual pieces of equipment or tools having a net individual value of \$300 or less, whether or not consumed by use, will be considered to be small tools and no payment will be made therefore.

36.2.3.6 Compensation will not be allowed while equipment is inoperative due to breakdown. Except as specified in paragraph 36.2.3.7 of this Article, time will be computed in half and full hours. In computing the time for use of equipment, less than 30 minutes shall be considered one half hour.

36.2.3.7 Equipment at the Work Site: The time to be paid for use of equipment on the work site will be the time the equipment is in operation on the force account work being performed. The time will include the time required to move the equipment to location of the force account work and return it to the original location or to another location requiring no more time than that required to return it to its original location. Moving time will not be paid for if the equipment is used at the site of the force account work on other than such force account work. Loading and transporting costs will be allowed, in lieu of moving time, when the equipment is moved by means other than its own power. No payment for loading and transporting will be made if the equipment is used at the site of the force account work on other than such force account work.

36.3 Special Items of Work: If the Owner and the Contractor, by agreement, determine that (a) an item of force account work does not represent a significant portion of the total Contract price, and (b) such items of work cannot be performed by the forces of the Contractor or the forces of any of his subcontractors, and (c) it is not in accordance with the established practice of the industry involved to keep the records which the procedure outlined in Paragraph 36.2 of this Article would require, charges for such special force account work items may be made on the basis of invoices for such work without complete itemization of labor, materials, and equipment rental costs. To such invoiced price, less a credit to the Owner for any cash or trade discount offered or available, will be added five percent of the discounted price, in lieu of the percentages provided in Paragraph 36.2 of this Article. In no event will the price paid exceed the current fair market value of such work plus five percent.

6.4 Records: The Contractor shall maintain his records to provide a clear distinction between the direct costs of work paid for on a force account basis and costs of other operations.

36.4.1 The Contractor shall prepare and furnish to the Project Manager, on the following work day, report sheets in duplicate of each day's work paid for on a force account basis. The daily report sheets shall itemize the materials used and shall cover the direct cost of labor and the charges for equipment, whether furnished by the Contractor, subcontractor, or other forces, except for charges described in Paragraph 36.3 of this Article. The daily report sheets shall provide names or identifications and classifications of workmen and the hourly rate of pay and hours worked. In addition, a report of the size, type and identification number of equipment and hours operated shall be furnished to the Project Manager. Daily report sheets shall be signed by the Contractor or his authorized agent.

36.4.2 Material changes shall be substantiated by valid copies of vendor's invoices or conformed copies, certified true by the Contractor. Such invoices shall be submitted with the daily report sheets. Should the vendor's invoices not be submitted within 20 days after the date of delivery of the material or 15 days after acceptance of the work, whichever comes first, the Owner reserves the right to establish the cost of such materials at the lower current wholesale prices at which such materials are available in the quantities concerned delivered to the location of the work, less any discounts provided in subparagraph 36.2.1. of this Article.

36.4.3 The Project Manager will compare his records with the daily report sheets furnished by the Contractor, make any necessary adjustment and compile the costs of work paid for on a force account basis on daily force account work report forms. When these daily reports are agreed upon and signed by the Project Manager, they shall become the basis of payment for the work performed, but shall not preclude subsequent adjustment based on a later audit.

36.4.4 The Contractor's original cost records pertaining to work paid for on a force account basis shall be retained and shall be open to inspection and audit as required by Article 28, CHANGES, and any other provisions of the Contract.

36.5 If, in the Project Manager's opinion, the Contractor or any of his subcontractors, in performing Force Account work, is not making efficient use of labor, material or equipment or is proceeding in a manner which makes Force Account work unnecessarily more expensive to the Owner, the Project Manager may, in whole or part, direct the Contractor in the deployment of labor, material and equipment. By way of illustration, inefficiency may arise in the following ways: (1) the timing of the

work, (2) the use of unnecessary labor or equipment, (3) the use of a higher percentage of apprentices than in non-force account work, (4) failure to procure materials at the lowest price, or (5) using materials of quality higher than necessary.

## **ARTICLE 37            TERMINATION FOR CONVENIENCE OF THE OWNER**

37.1      The performance of Work under this contract may be terminated by the Owner in accordance with this Article in whole, or from time to time in part, whenever such termination is in the best interest of the Owner. Such termination shall be effected by delivery to the Contractor of a Notice of Termination specifying the extent to which performance of work under the Contract is terminated, and the date upon which such termination becomes effective.

37.2      After receipt of a Notice of Termination, and except as otherwise directed by the Owner, the Contractor shall:

37.2.1 Stop work under the Contract on the date and to the extent specified in the Notice of Termination.

37.2.2 Place no further orders or subcontracts for materials, services or facilities, except as may be necessary for completion of such portion of the work under the Contract as is not terminated;

37.2.3 Terminate all orders and subcontracts to the extent that they relate to the performance of work terminated by the Notice of Termination;

37.2.4 Assign to the Owner in the manner, at the times, and to the extent directed by it, all of the rights, title and interest of the Contractor under the orders and subcontracts so terminated, in which case the Owner will have the right, in its discretion, to settle or pay any or all claims arising out of the termination of such orders and subcontracts;

37.2.5 Settle outstanding liabilities and claims arising out of such termination of orders and subcontracts, with the approval or ratification of the Owner to the extent it may require, which approval or ratification shall be final for the purposes of this Article;

37.2.6 Transfer title and deliver to the Owner in the manner, at the times, and to the extent, if any directed by it, (a) the fabricated or unfabricated parts, work in process, completed work, supplies and other material procured as part of, or acquired in connection with the performance of, the work terminated by the Notice of Termination, and (b) the completed or partially completed plans, drawings, information, and other property, which, if the Contract had been completed, would have been required to be furnished to the Owner;

37.2.7 Use his best efforts to sell, in the manner, at the times, to the extent, and at the price or prices direction or authorized by the Owner, property of the types referred to in (37.2.5) above; provided, however, that the Contractor (a) shall not be required to extend credit to any purchaser and (b) may acquire any such property under the conditions prescribed by and at a price or prices approved by the Owner; provided further that the proceeds of any such transfer or disposition will be applied in reduction of any payments to be made by the Owner to the contractor under this Contract

or will otherwise be credited to the price or cost of the work covered by this Contract or paid in such other manner as the Owner may direct;

37.2.8 Complete performance of each part of the work as shall not have been terminated by the Notice of Termination; and

37.2.9 Take such action as may be necessary, or as the Project Manager may direct, for the protection and preservation of the property related to this Contract which is in the possession of the Contractor and in which the Owner has or may acquire an interest.

37.3 After receipt of a Notice of Termination, the Contractor shall submit to the Project Manager his termination claim, in the form and with certification prescribed by the Owner. Such claims shall be submitted promptly but in no event later than the earliest of the following: (1) one year from the effective date of termination or (2) thirty days after the remainder of the project has been accepted by the owner.

37.4 Subject to the provision of Paragraph 37.3, the contractor and the Owner may agree upon the whole or any part of the amount or amounts to be paid to the Contractor by reason of the total or partial termination of work pursuant to this Article, which amount or amounts may include an allowance for profit on work done; provided that such agreed amount or amounts, exclusive of settlement costs, shall not exceed the total contract price as reduced by the amount of payments otherwise made and as further reduced by the Contract price of work terminated. The Contract will be amended accordingly, and the Contractor will be paid the agreed amount.

37.5 In the event of failure of the Contractor and the Owner to agree, as provided in Paragraph 37.4, upon the whole amount to be paid the Contractor by reason of the termination of work pursuant to this Article, the Owner will pay the Contractor the amounts determined by the Owner as follows, but without duplication of any amounts agreed upon in accordance with Paragraph 37.4;

37.5.1 With respect to contract work performed prior to the effective date of the Notice of Termination, the total (without duplication of any items) of:

37.5.1.1 The cost of such work;

37.5.1.2 The cost of settling and paying claims arising out of the termination of work under subcontracts or orders as provided in subparagraph 37.2.5 above, exclusive of the amounts paid or payable on account of supplies or materials delivered or services furnished by the subcontractor prior to the effective date of the Notice of Termination of work under this Contract, which amounts shall be included in the cost on account of which payment is made under 37.5.1 above.

37.5.1.3 A sum, as profit on 37.5.1.1 above, determined by the Owner to be fair and reasonable; provided, however, that if it appears that the Contractor would have sustained a loss on the entire Contract had it been completed, no profit shall be included or allowed under this subparagraph 37.5.1.3 and an appropriate adjustment shall be made by reducing the amount of the settlement to reflect the indicated rate of loss.

37.5.2 The reasonable cost of the preservation and property incurred pursuant to subparagraph 37.2.9 and any other reasonable cost incidental to termination of work under this Contract, including

expense incidental to the determination of the amount due to the Contractor as the result of the termination of work under this Contract.

37.5.3 The total sum to be paid to the contractor under paragraph 37.5.1 above will not exceed the total contract price as reduced by the amount of payments otherwise made and as further reduced by the Contract price of the work terminated.

37.6 In arriving at the amount due the Contractor under this Article, there will be deducted (1) any claim which the Owner may have against the Contractor in connection with this Contract, (2) the agreed price for, or the proceeds of sale, of materials, supplies or other things acquired by the contractor or sold, pursuant to the provisions of this Article, and not otherwise recovered by or credited to the Owner and (3) the full amount of any statutory or other claim against the Contractor filed with the Owner.

37.7 Unless otherwise provided for in this Contract, or by applicable statute, the Contractor, from the effective date of termination and for a period of three years after final settlement under this Contract, shall preserve and make available to the Owner at all reasonable times at the office of the Contractor but without direct charge to the Owner, all his books, records, documents, electronic/digital media and other evidence bearing on the costs and expenses of the Contractor under this Contract and related to the work terminated hereunder, or to the extent approved by the Owner, or other authentic reproductions thereof.

37.8 The Contractor shall insert in all subcontracts that the subcontractor shall stop work on the date of and to the extent specified in a Notice of Termination from the Owner and shall require that any tier subcontractors insert the same provision in any tier subcontracts.

37.9 Under no circumstances is the Contractor entitled to anticipatory, unearned profits or consequential damages as a result of a termination or partial termination under this Article.

## **ARTICLE 38            TERMINATION FOR DEFAULT**

38.1 If, in the opinion of the Owner, the Contractor has failed to prosecute work, the Owner will notify the Contractor. The Contractor will then have 5 days to remedy the failure to prosecute work or to obtain the Owner's authorization for the delay or an extension of time as set forth in Article 32.

38.2 If the Contractor refuses or fails after reasonable notice as set forth above to prosecute Work, or any separable part thereof, with such diligence as will insure its completion within the time specified in this Contract, or refuses or fails to complete said Work within such time, the Owner may, by written notice to the Contractor, terminate for default his right to proceed with the Work or such part of the Work as to which there has been unauthorized delay. In such event the Owner may take over the work and prosecute the same to completion, by Contractor or otherwise, and may take possession of and utilize in completing the Work such materials, appliances, and plant as may be on the Work Site and necessary therefore. Whether or not the Contractor's right to proceed with the Work is terminated, he and his sureties shall be liable for any damage to the Owner resulting from his refusal or failure to complete the Work in the specified time.

38.3 If the Owner so terminates the Contractor's right to proceed, the resulting damage will consist of liquidated damages until such time as may be required for final completion of the Work together



with any increased costs incurred by the Owner in completing the Work as further set forth in Article 41.

38.4 If, after Notice of Termination of the Contractor's right to proceed under the provisions of this Article, it is determined for any reason that the Contractor was not in default under the provisions of this Article or that the Contractor was entitled to an extension of time under Article 32, EXTENSION OF TIME, the rights and obligations of the parties shall be the same as if the Notice of Termination had been issued pursuant to Article 37, TERMINATION FOR CONVENIENCE OF THE OWNER.

38.5 The right to terminate for default and any other rights and remedies of the Owner provided in this clause are in addition to any other rights and remedies provided by law or under this Contract.

## **ARTICLE 39            TERMINATION OF RIGHT TO PROCEED FOR CERTAIN DEFAULTS**

39.1 In addition to the Owner's right to terminate for default under other Articles of this Contract, the Owner will have the right to terminate the Contractor's performance of work in whole or in part for default for any of the following reasons:

39.1.1 The Contractor's or subcontractor's performance of work is in violation of the terms of the Contract.

39.1.2 The Contractor or subcontractor has violated an authorized order or requirement of the Owner.

39.1.3 Abandonment of Contract.

39.1.4 Assignment or subcontracting of the Contract or any work under the Contract without approval of the Owner.

39.1.5 Bankruptcy or appointment of a receiver for the Contractor's property.

39.1.6 Performance of the Contractor in bad faith.

39.1.7 Contractor allowing any final judgment to stand against him for a period of 48 hours (excluding weekends and legal holidays).

39.2 If, in the opinion of the Owner, the Contractor is in default of the Contract, the Owner will notify the Contractor. If the Contractor fails to remedy or commence to remedy the default within five days after receipt of such notice, the Owner may terminate the Contractor's right to proceed with the Work or that portion of the Work which the Owner determines is most directly affected by the default.

39.3 If, after Notice of Termination of Contractor's right to proceed under this Article it is determined for any reason Contractor was not in default, the rights and obligations of the parties shall be the same as if the Notice of Termination had been issued pursuant to Article 37, TERMINATION FOR CONVENIENCE OF THE OWNER.

**ARTICLE 40**  
**RIGHTS AND OBLIGATIONS OF PARTIES AT TERMINATION FOR DEFAULTS**

40.1 This Article shall apply to terminations for defaults covered in Article 15, 38, and 39 of these General Conditions.

40.2 On receipt of a Notice of Termination from the Owner, the Contractor shall:

40.2.1 Stop all work under the Contract on the date and to the extent specified in the Notice of Termination.

40.2.2 Place no further orders or subcontracts for materials, equipment or services except as they relate to the performance of work covered by the Notice of Termination.

40.2.3 Cancel or terminate all orders or subcontracts to the extent that they relate to the performance of work covered by the Notice of Termination.

40.2.4 Comply with all other requirements of the Owner as may be specified in the Notice of Termination.

40.3 Upon the Owner termination of the Contractor's right to proceed with the Work because of the Contractor's default under the Contract, the Owner will have the right to complete the Work by whatever means and method it deems advisable. The Owner shall have the right to take possession of and use any or all the Contractor's materials, plat, tools, equipment and property of any kind provided by or on behalf of the Contractor for the purpose of the Work, or a portion of them, without being responsible to the Contractor for fair wear and tear. The Contractor shall have no rights in such property during their use by the Owner. The Owner will not be required to obtain the lowest prices for completing the Work but shall make such expenditures as, in the Owner's sole judgment, best accomplish such completion.

40.4 The expense of completing the Work, together with a reasonable charge for engineering, managerial and administrative services, as certified by the Owner, will be charged to the Contractor and the expense so charged will be deducted by the Owner out of such monies as may be due or may at any time thereafter become due to the Contractor. In case such expense is in excess of the sum which otherwise would have been payable to the Contractor under the Contract, the Contractor or his surety shall promptly pay the amount of such excess to the Owner upon notice from the Owner of the excess so due. The Owner may, in its sole discretion, withhold all or any part of any progress payments otherwise due the Contractor until completion and final settlement of the Work covered by the Notice of Termination of Contractor's right to proceed.

40.5 The Contractor shall insert in all subcontracts that the subcontractor will stop work on the date of or to the extent specified in a Notice of Termination from the Owner and shall require the subcontractors to insert the same provision in any tier subcontracts.

40.6 The Contractor shall immediately upon receipt communicate any Notice of Termination issued by the Owner to the affected subcontractors and suppliers at any tier.

40.7 Rights of Surety: The Surety on the Performance Bond provided for in this Contract shall not be entitled to take over the Contractor's performance of work in case of termination under this Article, except with the consent of the Owner.

## **ARTICLE 41 LIQUIDATED DAMAGES**

41.1 Time is of the essence of the Contract. In the event the Contractor fails to achieve Substantial Completion of the Work within the Contract Time, or fails to meet any other time requirement or the time limit set forth in the Contract, after due allowance for any extension or extensions of time made in accordance with the Contract, the Contractor shall pay to the Owner as fixed, agreed and liquidated damages, pursuant to the clause of the Contract entitled TERMINATION FOR DEFAULT—DAMAGES FOR DELAY—TIME EXTENSIONS, the sum of \$500.00 for each calendar day of delay unless otherwise stated in the Special Provisions. Such liquidated damages shall be assessed for each and every day that the Contractor shall be in default. The Owner shall have the right to deduct said liquidated damages from any amount due or that may become due the Contractor, or to collect such liquidated damages from the Contractor or its surety.

41.2 Liquidated damages in the amount stipulated do not include any sums of money to reimburse the City for actual damages which may be incurred between Substantial Completion and Final Completion because of the Contractor's failure to achieve Final Completion within the Contract Time. For such delay in Final Completion, the Contractor shall reimburse the City, as a mitigation of City damages and not as a penalty, those administrative costs incurred by the City as a result of such failure.

41.3 Liquidated damages in the amounts stipulated do not include any sums of money to reimburse the City for extra costs which the City may become obligated to pay on other contracts which were delayed or extended because of the Contractor's failure to complete the Work within the Contract Time. Should the City incur additional costs because of delays or extensions to other contracts resulting from the Contractor's failure of timely performance, the City will assess these extra costs against the Contractor, and these assessments will be in addition to the stipulated liquidated damages.

41.4 The City reserves all of its rights to actual damages from the Contractor for injury or loss suffered by the City from actions or omissions of the Contractor, including but not limited to any other breach or default of the Contract, outside of the scope of the above sections.

## **ARTICLE 42 USE AND POSSESSION PRIOR TO COMPLETION**

42.1 The Owner shall have the right to take possession of or use any completed or partially completed parts of the Work. Such possession or use will not be deemed an acceptance of Work not completed in accordance with the Contract. While the Owner is in such possession, the Contractor, notwithstanding the provisions of Article 18, DAMAGE TO WORK AND RESPONSIBILITIES FOR MATERIALS, will be relieved of the responsibility for loss or damage to the work other than that resulting from the Contractor's fault or negligence or breach of warranty. If such prior possession or use by the Owner delays the progress of the Work or causes additional expense to the Contractor, an equitable adjustment in the Contract price or the time of completion will be made, and the Contract will be modified in writing accordingly.

## **ARTICLE 43**

### **RIGHTS IN SHOP DRAWINGS AND WORKING DRAWINGS**

43.1 Shop Drawings and Working Drawings, submitted to the Project Manager by the Contractor, subcontractor or any lower tier subcontractor pursuant to the Work, may be duplicated by the Owner and the Owner may use and disclose, in any manner and for any purpose, Shop Drawings and Working Drawings delivered under this Contract.

43.2 This Article, including this Paragraph 43.2, shall be included in all subcontracts hereunder at all tiers.

## **ARTICLE 44 PATENT AND COPYRIGHT**

44.1 The Contractor shall warrant that the materials, equipment or devices used on or incorporated in the Work shall be delivered free of any rightful claim of any third party for infringement of any United States patent or copyright. If notified promptly in writing and given authority, information and assistance, the Contractor shall defend, or may settle, at his expense, any suit or proceeding against the Owner or the Project Manager based on a claimed patent or copyright infringement which would result in a breach of his warranty. The Contractor shall pay all damages and costs awarded therein against the Owner or the Project Manager due to such breach. If any use of materials, equipment or devices is held to constitute an infringement and such use is enjoined, the Contractor shall, at his expense and option, either procure for the Owner the right to continue using said materials, equipment or devices, or replace same with noninfringing materials, equipment or devices, or modify same so it becomes noninfringing. The Contractor shall report to the Owner promptly and in reasonable written detail, each notice or claim of patent or copyright infringement based on the performance of this Contract of which the Contractor has knowledge. In the event of any claim or suit against the Owner on account of any alleged patent or copyright infringement arising out of the performance of this Contract or out of the use of any supplies furnished or work or services performed hereunder, the Contractor shall furnish to the Owner when requested by the Owner, all evidence and information in possession of the Contractor pertaining to such suit or claim. Such evidence and information shall be furnished at the expense of the Owner except where the Contractor has agreed to indemnify the Owner. This clause shall be included in all subcontracts.

## **ARTICLE 45 HISTORICAL, SCIENTIFIC AND ARCHAEOLOGICAL DISCOVERIES**

45.1 All articles of historical, scientific or archaeological interest uncovered by the Contractor during progress of the Work shall be preserved in accordance with applicable law and reported immediately to the Project Manager. Further operations of the Contractor with respect to the find, including disposition of the articles, will be decided by the Owner in accordance with applicable law.

## **ARTICLE 46 SUBSTITUTIONS**

46.1 Where reference is made to one or more proprietary products but restrictive descriptive material of only one manufacturer is used, it is understood that the products of other manufacturers will be accepted, provided they equal or exceed the standards set forth in the plans and specifications and are compatible with the intent and purpose of the design, subject to the written approval of the Owner and the Project Manager. If the descriptive material is not restrictive, the products of other

manufacturers specified will be accepted without prior approval provided they are compatible with the intent and purpose of the design.

46.2 The Contractor may propose the substitutions of any material as a supplement to his bid with the monetary amount, additive or deductive as may be the case, clearly stated. Manufacturer's information, catalog numbers, and complete descriptive information shall be included with the proposed substitution. This shall be completely apart and separate from the base bid quotation and shall be solely for the information of the Owner, and the use of such proposed substitutions shall be strictly at the decision of the Owner. If substitution is accepted by the Owner, the Contract sum shall be adjusted from the base bid either up or down as indicated on the supplementary list.

## **ARTICLE 47**

### **INSURANCE**

#### **47.1 General**

47.1.1 The Contractor shall provide from insurance companies, acceptable to the Owner, the insurance coverage designated hereinafter and pay all costs. The Contractor also indemnifies the Owner as further described in Article 4.

47.1.2 Before commencing work under this Agreement, the Contractor shall furnish the Owner with certificates of insurance specified herein showing the type, amount, class of operations covered, effective dates, and date of expiration of policies. Furthermore, each such certificate shall contain a valid provision or endorsement that the policy may not be cancelled, terminated, changed or modified without first giving ten (10) days written notice to the Owner, which notice must be sent registered mail, return receipt requested, to the Project Manager.

47.1.3 In case of the breach of any provision of this Article, the Owner, at his option, may take out and maintain, at the expense of the Contractor, such insurance as the Owner may deem proper at the Contractor's expense and may deduct the cost of such insurance from any monies which may be due or become due the Contractor under this Agreement.

47.1.4 The Contractor shall either: (1) require each of his subcontractors to procure and maintain during the life of his subcontract, subcontractors' comprehensive General Liability, Automobile Liability and Property Damage Liability Insurance of the type and in the same amounts as specified in this subparagraph, or (2) insure the activity of his subcontractors in his own policy.

47.1.5 Co-Insurance: The Contractor herein agrees to name the Owner as an insured party on all liability insurance policies provided for by this Article 47, INSURANCE.

47.1.6 No insurance shall be cancelled or otherwise voided during the Contract period, without at least 10 days prior written notice to the Owner, nor shall any insurance be invalidated should the insured waive any or all right of recovery against any party.

47.1.7 Liability insurance may be arranged by Comprehensive General Liability and Comprehensive Automobile Liability policies for the full limits required; or by a combination of underlying Comprehensive Liability policies for lesser limits with the remaining limits provided by an Excess or Umbrella Liability policy.

47.1.8 The Owner shall purchase and maintain such boiler and machinery insurance as may be required by the Contract Documents or by law. This insurance shall include the interest of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the Work.

47.1.9 Any loss insured under Article 47 is to be adjusted with the Owner and made payable to the Owner as trustee for the insured, as their interests may appear, subject to the requirements of any applicable mortgage clause. The Contractor shall pay each subcontractor a just share of any insurance monies received by the Contractor, and by appropriate share of any insurance monies received by the Contractor, and by appropriate agreement, written where legally required for validity, shall require each subcontractor to make payments to his subcontractors in similar manner.

47.1.10 If the Contractor requests in writing that insurance for risks other than those described in this Article or other special hazards be included in the Owner's property insurance policy, the Owner shall, if possible, include such insurance, and the cost thereof shall be charged to the Contractor by appropriate Change Order.

47.1.11 The Owner as trustee shall have power to adjust and settle any loss with the insurers.

47.1.12 If the Owner finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion thereof, such occupancy or use shall not commence prior to a time mutually agreed to by the Owner and Contractor and to which the insurance company or companies providing the property insurance have consented by endorsement to the policy or policies. This insurance shall not be cancelled or lapsed on account of such partial occupancy or use. Consent of the Contractor and of the insurance company or companies to such occupancy or use shall not be unreasonably withheld.

#### 47.2 Workmen's Compensation and Employer's Liability Insurance:

47.2.1 The Contractor shall provide coverage and amounts as required by the Workmen's Compensation Act of the State of Colorado.

47.2.2 The Contractor shall provide Employer's Liability Insurance in an amount not less than \$100,000 for each occurrence.

47.2.3 The Contractor shall require any subcontractor to provide Workmen's Compensation and Employer's Liability Insurance in the same amounts for all of the subcontractor's employees to be engaged in work under this Agreement.

#### 47.3 General Liability

47.3.1 General Liability Insurance shall be on a Comprehensive General Liability form and shall provide coverage for the following: Premises and Operations, Owners and Contractors Protective, Elevators, Independent Contractors, Products and Completed Operations, Contractual, Personal Injury, and Broad Form Property Damage; "XCU" exclusions must be deleted.

47.3.2 Minimum requirements for Comprehensive General Liability are: bodily injury, \$1,000,000.00 each person, \$2,000,000.00 each occurrence; property damage, \$1,000,000.00 each occurrence.

#### 47.4 Automobile Liability

47.4.1 Comprehensive Automobile Liability Insurance shall include coverage for all owned motor vehicles and hired and non-owned motor vehicles.

47.4.2 Minimum requirements for Comprehensive Automobile Insurance are: bodily injury, \$1,000,000.00 each person, \$2,000,000.00 each occurrence; property damage, \$1,000,000.00 each occurrence.

#### 47.5 Property Insurance:

47.5.1 The Owner may require the Contractor to purchase and maintain "Builder's Risk" Property Insurance for all work at the site to the full insurable value thereof. The Owner and the Project Manager shall be named as co-insured.

### **ARTICLE 48 UNCOVERING AND CORRECTION OF WORK**

48.1 During construction, whenever materials requiring inspection in place by the Project Manager and the Owner to be permanently covered up, it shall be Contractor's responsibility to notify the Project Manager at least 24 hours in advance of commencement of such covering operation. In the event of failure by Contractor to give such notification, Contractor shall, at his own expense, uncover such portions of work as required by the Project Manager or the Owner, and reinstall such covering after satisfactory inspection and correction of any and all deficiencies.

### **ARTICLE 49 EQUAL OPPORTUNITY**

49.1 The Contractor agrees to comply with the letter and spirit of the Colorado Antidiscrimination Act of 1957, as amended, and other applicable laws respecting discrimination and unfair employment practices (24-34-402, CRS 1973, as amended). The Contractor shall be responsible for any discriminatory or unfair employment practices of his subcontractors.

Neither the Contractor nor any subcontractor will discriminate against any employee or applicant for employment because of race, creed, color, national origin, sex, religion, ancestry, mental or physical handicap, or age. Contractor shall take affirmative action to insure that applicants are employed, and that employees are treated during employment without regard to their race, creed, color, national origin, sex, religion, ancestry, mental or physical handicap, or age. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment, or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the policies of non-discrimination.

49.2 Contractor and all subcontractors shall, in all solicitations or advertisement for employees placed by them or on their behalf, state that qualified applicants will receive consideration for employment without regard to race, creed, color, national origin, sex, religion, ancestry, mental or physical handicap, or age.

## **ARTICLE 50                      CLAIMS**

50.1      The Contractor shall not assert any claim arising out of any act or omission by any officer, agent or employee of the Owner in the execution or performance of this Contract against such officer, agent or employee in his or her individual or official capacities.

50.2      The Contractor shall require each Separate Contract Design Professional or Contractor to agree in his Contract not to make any claim against the Owner, its officers, agents or employees, by reason of such Contract with the contractor.

50.3      Nothing in this Contract shall be construed to give any person other than the Owner and the Contractor any legal or equitable right, remedy or claim under this Contract; and it shall be held to be for the sole and exclusive benefit of the Owner and the Contractor.

## **ARTICLE 51**

### **NOTICES**

51.1      Except as otherwise provided herein, any notice, approval, acceptance, request, bill, demand or statement hereunder from either party to the other shall be in writing and shall be deemed to have been given when either delivered personally or deposited in a U.S. mailbox in a postage prepaid envelope, addressed to the other party via certified mail. Notices to the Owner shall be addressed to the Project Manager by name. Either party may at any time change such address by delivering or mailing, as aforesaid, to the other party a notice stating the change and the changed address.

## **ARTICLE 52**

### **LEGAL INSERTIONS, ERRORS, INCONSISTENCIES, OR DISCREPANCIES IN CONTRACT**

52.1      It is the intent and understanding of the parties to this Contract that each and every provision of law required to be inserted in this Contract shall be and is inserted herein. Furthermore, it is hereby stipulated that every such provision is deemed to be inserted herein, and if through mistakes or otherwise, any such provision is not inserted in correct form, then this Contract shall upon application of either party, be amended by such insertion so as to comply strictly with the law and without prejudice to the right of either party.

52.2      If this Contract contains any errors, inconsistencies, ambiguities, or discrepancies, including typographical errors, the Contractor shall request a clarification of same by writing to the Project Manager whose decision shall be binding upon the parties.

## **ARTICLE 53**

### **CAPTIONS OR HEAD NOTES**

53.1      The captions or head notes on articles or sections of this Agreement, and marginal notes are intended for convenience and reference purposes only and in no way define, limit or describe the scope or intent hereof, or of this Agreement not in any way affect this Agreement.

## **ARTICLE 54**



## **EFFECTIVE AND BINDING**

54.1 This Contract shall not become effective or binding upon the Owner unless it has been authorized and executed in accordance with the ordinances of the City of Greeley.

## **ARTICLE 55 CONTRACTOR**

55.1 All personnel assigned to the Project by the Contractor shall be required to cooperate fully with personnel of the Owner and if in the sole discretion of the Owner the Contractor's personnel fails so to cooperate, the Contractor shall relieve them of their duties on the Project when required by the Owner.

55.2 Within seven (7) consecutive calendar days after date of written notice to commence work, the Contractor shall designate in writing one person who, on his behalf, shall be responsible for coordinating all of the services to be rendered by the Contractor hereunder. Such designee shall be subject to the approval of the Owner. Any change to the approved designee shall be proposed in writing seven (7) days in advance and subject to Owner approval.

55.3 The Contractor shall engage, at his sole expense, all engineers, architects, cost estimators, lawyers, experts and Contractors as may be required for the proper performance of the Contract. The Contractor shall be responsible for the performance of the work of all architects, engineers, cost estimators, lawyers, experts and Contractors so engaged by him, including maintenance of schedules, correlation of their work and resolution of all difference between them. It is understood that all architects, engineers, cost estimators, lawyers, experts and Contractors are employees of the Contractor and not of the Owner, and the Contractor alone is responsible for their work.

55.4 All drawings, tracings, specifications, digital media/electronic files and other material prepared and furnished under and for this Contract shall become the property of the Owner upon substantial completion and/or their acceptance by the Owner and/or upon termination of the services of the Contractor. Such documents shall be promptly delivered to the Owner upon demand and thereafter may be used by the Owner in whole or in part or in modified form, for those purposes it may deem advisable without further employment of, or payment of additional compensation to, the Contractor.

55.5 The Contractor shall not, without the prior written approval of the Owner, specify for the project, or necessarily imply the required use of any article, product, material, fixture or form of construction, the use of which is covered by a patent, or which is otherwise exclusively controlled by a particular firm or group of firms.

55.6 Should any claim be made or any action brought against the Owner relating to the design and satisfactory operation of the Project herein, the Contractor shall diligently render to the Owner without additional compensation any and all assistance which may be requested by the Owner.

55.7 The Owner's Project Manager's decision shall be final and binding upon the Contractor as to all matters arising in connection with or relating to this Contract. The Project Manager shall determine the amount, quality, acceptability and fitness of the work being performed hereunder and shall determine all matters relative to the fulfillment of this Contract on the part of the Contractor and such determination shall be final and binding on the Contractor. Acceptance by the Owner of any

document hereunder and all supporting documents shall not relieve the Contractor of sole responsibility for work performed under this contract, including, but not limited to, the final design of the Project, including the plans, specifications and all supporting documents, except as to any feature thereof which the Owner had specifically directed in writing to be included over the written objection of the Contractor. In case any question shall arise, the decision of the Owner's Project Manager, who is hereby accepted by the Contractor as the arbiter, shall be a condition precedent to the right of the Contractor to receive any money under this Contract.

## **ARTICLE 56            APPEALS**

56.1      Except as otherwise provided in this Contract, any dispute concerning a question of fact arising under this Contract which is not disposed of by Agreement shall be decided by the Project Manager, who shall reduce his decision to writing and mail or otherwise furnish a copy thereof to the Contractor. The decision of the Project Manager shall be final and conclusive unless, within fifteen (15) days from the date of receipt of such copy, the Contractor mails or otherwise furnishes to the Project Manager a written notice of appeal.

56.2      In the event a decision of the Project Manager is the subject of an appeal, such dispute may be settled by appropriate legal proceeding, or, if the parties mutually agree, through arbitration or administrative process. Pending any binding arbitative or administrative decision, appeal, or judgment referred to in this section or the settlement of any dispute arising under this Contract, the Contractor shall proceed diligently with the performance of this Contract.

56.3      Venue and jurisdiction of any suit, right, or cause of action arising under or in connection with this Contract shall lie exclusively in Weld County, Colorado.

## **ARTICLE 57**

### **PROHIBITED INTEREST**

57.1      No member, officer or employee of the City of Greeley shall have any financial or pecuniary interest, direct or indirect, in this Contract or the proceeds thereof.

## **ARTICLE 58**

### **FINDINGS CONFIDENTIAL**

58.1      Any reports, information, data, etc., available to or prepared or assembled by Contractor under this Contract shall not be made available to any individual or organization by Contractor without consent in writing from the Owner subject to applicable law.

## **ARTICLE 59            GENERAL PROVISIONS**

59.1      Services and work performed by Contractor under this Contract shall conform to reasonable and normal professional standards known and accepted within the community.

59.2      No reports, graphics or other material produced directly or indirectly for the Owner under this Contract shall be the subject of an application for copyright or trademark by or on behalf of Contractor.

59.3 The laws of the State of Colorado and applicable Federal, state and local laws, regulations and guidelines shall govern hereunder.

59.4 The headings of the articles, clauses, and paragraphs of this Contract are inserted for reference purposes only and are not restrictive as to content.

59.5 This Contract and any subsequent amendment shall be deemed an original having identical legal effect, and all of which together constitute one and the same instrument.

59.6 Nothing contained herein shall be deemed to give any third party any claim or right of action against the Owner which does not otherwise exist without regard to this Contract.

59.7 Where a number of days is specified in this Contract it shall mean calendar days unless otherwise specified.

59.8 This Contract shall not be assigned, in whole or in part, without the written consent of the Project Manager and Contractor.

59.9 The Owner certifies the following;

A. An amount of money equal to or greater than the Contract amount has been appropriated and budgeted for the Project which this Contract concerns.

B. No Change Order which requires additional compensable work to be performed by the Contractor will be issued by the Owner unless an amount of money has been appropriated and budgeted sufficient to compensate the Contractor for such additional compensable work unless such work is covered under the remedy-granting provisions of this Contract.

C. As used in this paragraph, "remedy granting provision" shall mean any clause of this Contract which permits additional compensation in the event of a specific contingency or event occurs. This term shall include, but not be limited to, change clauses, differing site conditions clauses, variation in quantities clauses, and termination for convenience clauses.

## **ARTICLE 60 CONTRACTOR ACCEPTANCE**

60.1 The acceptance by the Contractor, his successors or assigns of any payment made on the final acceptance of the Project under this Contract or of any final payment due on termination of this Contract, shall constitute a full and complete release of the Owner from any and all claims, demands and causes of action whatsoever which the Contractor, his successors or assigns have or may have against the Owner under the provisions of this Contract.

60.2 No action shall be maintained by the Contractor, its successors or assigns, against the Owner on any claims based upon or arising out of this Contract or out of anything done in connection with this Contract unless such action shall be commenced within 180 days after the date of filing of the voucher for final payment hereunder in the office of the Finance Director, or within 180 days of the termination of this Contract.

## **ARTICLE 61 SUCCESSORS AND ASSIGNS**

61.1 The Contractor binds itself, its partners, successors, assigns and legal representatives to the other party to this Contract and to the partners, successors, assigns and legal representatives of such other party with respect of all covenants of this Agreement. The Contractor shall not transfer, assign, or subcontract any interest in this Agreement.

## **ARTICLE 62 SEVERABILITY CLAUSE**

62.1 If any provision of this Agreement is subsequently declared by legislative or judicial authority to be unlawful, unenforceable, or not in accordance with applicable laws, statutes, and regulations of the United States of America and the State of Colorado, all other provisions of this Agreement shall remain in full force and effect.

## **ARTICLE 63**

63.1 This Agreement represents the entire and integrated Agreement between the Owner and the Contractor and supersedes all prior negotiations, representations or agreements, either written or oral. This Agreement may be amended only by written instrument signed by both Owner and Contractor.

## **ARTICLE 64**

64.1 In accordance with C.R.S. §8-17-101, all parties contracting with the City of Greeley on public works projects shall employ Colorado labor to perform the work to the extent of not less than eighty percent (80%) of each type or class of labor in the several classifications of skilled and common labor employed on this project.

## **ARTICLE 65**

65.1 The Contract Documents may be executed in two or more counterparts, each of which shall be deemed an original but all of which together shall constitute one and the same document. The Contract Documents, including all component parts set forth above, may be executed and delivered by electronic signature by any of the parties and all parties consent to the use of electronic signatures.



SECTION 00520  
SUBCONTRACTORS/MATERIALS SUPPLIERS AND RELATED DATA

Firm Name: \_\_\_\_\_ City Contractors License # \_\_\_\_\_

Primary Contractor \_\_\_\_\_

PROJECT: \_\_\_\_\_ Address: \_\_\_\_\_

For each Subcontractor and/or Materials Suppliers to be utilized, please provide the following information  
(use additional sheets as necessary):

Phone Number: \_\_\_\_\_ Fax Number: \_\_\_\_\_

Proposed work and percentage of total work to be assigned \_\_\_\_\_  
Percentage: \_\_\_\_\_ %

Firm Name: \_\_\_\_\_ City Contractors License # \_\_\_\_\_

Address: \_\_\_\_\_

Phone Number: \_\_\_\_\_ Fax Number: \_\_\_\_\_

Proposed work and percentage of total work to be assigned \_\_\_\_\_  
Percentage: \_\_\_\_\_ %

Firm Name: \_\_\_\_\_ City Contractors License # \_\_\_\_\_

Address: \_\_\_\_\_

Phone Number: \_\_\_\_\_ Fax Number: \_\_\_\_\_

Proposed work and percentage of total work to be assigned \_\_\_\_\_  
Percentage: \_\_\_\_\_ %

Firm Name: \_\_\_\_\_ City Contractors License # \_\_\_\_\_

Address: \_\_\_\_\_

Phone Number: \_\_\_\_\_ Fax Number: \_\_\_\_\_

Proposed work and percentage of total work to be assigned \_\_\_\_\_  
Percentage: \_\_\_\_\_ %

Firm Name: \_\_\_\_\_ City Contractors License # \_\_\_\_\_

Address: \_\_\_\_\_

Phone Number: \_\_\_\_\_ Fax Number: \_\_\_\_\_

Proposed work and percentage of total work to be assigned \_\_\_\_\_  
Percentage: \_\_\_\_\_ %

If the Primary Contractor adds any Subcontractors or Materials Suppliers during the duration of the project, the Primary Contractor will supply the City with an updated form before the Subcontractor or Materials Supplier will be allowed to work on the project.

## **SECTION 00620**

### **SPECIAL PROVISIONS**

#### **Recreation Center & Family Funplex LED Lighting Up-grade and Painting Projects. Greeley, Colorado**

#### **DESCRIPTION OF THE PROJECT:**

**The intent of this project is replace all existing lighting fixtures with LED Fixtures and pressure wash and paint the existing pool area in both facilities.**

#### **LOCATION OF WORK:**

**All work is located at two different locations; Greeley Recreation Center Pool at 651 10<sup>th</sup> Avenue and the Family Funplex pool at 1501 65<sup>th</sup> Avenue.**

#### **SPECIFICATIONS:**

This project subject to the following drawings and specifications: See attached Fixture Specifications and Electrical Drawings provided by Travis Pofahl Electrical Engineering at RJ Mc Nutt and Associates. Paint specifications and colors to be provide by the City of Greeley within the scope document.

- 1. Construction scheduled time frame for the Recreation Center is May 25<sup>th</sup> thru August 15<sup>th</sup>, 2020,**
- 2. Construction scheduled time frame is August 15<sup>th</sup> thru October 18<sup>th</sup>, 2020**
3. Work hours are 7:00 AM to 5:00 pm, unless coordinated with Facilities Division.
4. Restroom facilities will be available within the facility.
- 5. All Lighting and Control equipment must be completed & operational by December 18, 2020.**
6. Parking will be available at facility.  
Facility keys will be issued at the front desk for access the work area. Must be returned upon completion of each work day.
- 7. Contractor must obtain all necessary permits. (Electrical contractor must be licensed with the City of Greeley).**
- 8. All lighting electrical power shutdowns for this project during construction period must be coordinated with Recreation Center and Family Funplex staff. Contact person Amanda Gustafson @ 970/ 336-4218**

**9. Contact person for Facilities Division. (Dale Blehm @ 970/539-6230) for issues during project.**

10. Per-bid meeting and walk-through is highly recommended to bid this project.

11. The Contractor must provide documentation with the bid that the company has journeyman electricians do the work on project.

**12. All work shall be completed at the Recreation Center including other trades by August 15<sup>th</sup>, 2020. Family Funplex Completion by October 18<sup>th</sup>, 2020.**

13. Construction work area shall be cleaned up at the end each workday.

#### **PERMITS:**

The Contractor must be licensed with City of Greeley. Contractor will obtain necessary permits for work in public facilities. City will waive permit fees.

#### **CONTRACT TIME, LIQUIDATED DAMAGES, DELAYS:**

Work shall be completed within (120) days, calendar days of the Notice to Proceed. The Notice to Proceed will be issued after a meeting with the selected contractor, and that contractor has an opportunity to schedule this work.

Liquidated damages will be withheld from the final payment to the Contractor for each day that the project's substantial completion is delayed beyond the contract completion date (60 calendar days plus any additional time allowed by the City per change orders).

Liquidated damage amount will be \$500.00 per calendar day.

Liquidated damages are based on additional costs to the City of Greeley for delay of project completion and are not a "late penalty".

Additional time will be allowed for formal seasonal "bad weather" days. The Contractor shall provide documentation of weather history as described below when submitting requests for additional time for severe weather. An actual adverse weather day must prevent work for 50 percent or more of the CONTRACTOR'S workday, delay work critical to the timely completion of the project, and must be documented by the CONTRACTOR. The OWNER'S representative observing the construction shall determine on a daily basis whether or not work can proceed or if work is delayed due to adverse weather or the effects thereof. The CONTRACTOR shall notify the OWNER'S representative in writing of any disagreement as to whether or not work can proceed on a given date, within two (2) calendar days of that date. The OWNER'S representative will



use the above written notification in determining the number of working days for which work was delayed during each month.

While extensions of time shall be granted for “unusually severe” weather or climate conditions, no monetary compensations shall be made by the OWNER for any costs to the CONTRACTOR arising out of such delays. The CONTRACTOR shall comply with the portions of these contract documents relating to his project schedule and amendments thereto which result from “unusual severe” weather condition.

#### **Work Hours:**

The Contractor is limited to working between 7.00 am to 5:00 pm or per-determined after hours. The work must be coordinated with Dale Blehm @ 970/539-6230 Project Manager or Janet Timko @ 970/350-9334 Facilities Manager.

#### **MEASUREMENT AND PAYMENTS:**

This contract is a Lump sum price for construction, etc. No additional payment for work not described in these documents will be allowed, whether a bid item exists or not. The Contractor shall include the costs of all incidentals of construction, labor, equipment, and materials in the appropriate bid item.

#### **FINAL CLEAN UP:**

At the completion of the contract and prior to submittal of final pay request, the Contractor shall clean up all construction material and debris. The Contractor shall notify the City when final cleanup is ready for inspection.

#### **POST CONSTRUCTION INSPECTION AND WARRANTY:**

Please see General conditions 501 article 11

#### **END OF SECTION 00620**

# **Family Funplex and Recreation Center Pool Painting and Lighting Replacement**

**Family Funplex at 1501 65<sup>th</sup> Avenue**

**&**

**Recreation Center at 651 10<sup>th</sup> Avenue**

**Greeley CO 80631**

## **Summary of Work:**

This project will replace existing lighting and painting of pool areas in to different facility. The pool areas will require lighting replacement and painting of the entire existing areas. Use paint products and colors that are called out in the scope below, use manufacturer's approved product for primer and painting. The building ceiling and walls are approximately 25' feet tall. Most of the ceiling areas are over pool areas, however all are accessible with a lift or scaffolding. The pool bottom areas must be protected during the replacement of lighting and painting. If these areas are damaged they must be repaired at no cost to the owner.

## **Scope:**

1. Clean all pool areas via power washing, following the paint manufacturers approved product before paint application in both pool areas.
2. Both pool projects to be completed by same general contractor.
3. Bidding general contractors to verify square footage of both pool areas
4. Paint specifications and paint colors will be provide for both pools.
5. Protect and cover all window and door frames, aquatic play structures, concrete walk-ways, and new lighting fixture surfaces from paint.
6. Apply a manufacturer approved primer as recommended by the manufacturer.
7. Seal any voids or failed caulk joints with sealant.
8. Re-paint all CMU walls and steel structure surfaces.
9. Provide at least 2 coats to cover the existing paint colors, confirmed with the owner.
10. Contractor will be responsible for all ventilation of the building during all painting.

11. Standard 2 year workmanship warranty
12. Timeline for the Recreation Center lighting replacement and painting will be from May 25<sup>th</sup> thru August 15<sup>th</sup> 2020. Project will be 84 calendar day to complete.
13. Timeline for the Family Funplex lighting replacement and painting will be from August 15<sup>th</sup> thru October 15<sup>th</sup>, 2020. Project will be 63 calendar days to complete
14. Chosen contractor will submit color and finish sample to the owner for approval.

#### CMU WALLS PAINT SPECIFICATOINS

15. Use Block Filler: Tnemec 130 Envirofill
16. Intermediate Coat: Tnemec L69 Hi Build Epoxoline II
17. Finish Coat: Tnemec 1081 Endura Shield
18. Color : Snowbound SW 7004

#### EXPOSED STRUCTURE/CEILING PAINT SPECIFICATIONS

19. First & Second Coats Tuemec 115 Uni Bond DF
20. Color: High Reflective White SW 7757

#### ELECTRICAL SPECIFCATION

Lighting specification will be provide RJ McNutt and Associates

### **Equipment:**

Any equipment needed or rented is the responsibility of the approved contractor.

Scaffolding set-up and boom lifts for this project shall be provided by general contractor unless provided by their subcontractors.

**Protection:**

It is the responsibility of the approved contractor to protect the pool surfaces including the pool bottom itself in the work zone.

Protect any other surface from the repair area, such as, but not limited to, walls, sidewalks, windows, doors. Any damage done will be repaired by the contractor.

The contractor needs to be aware that the building will remain open during the repair. Safety rules and regulations apply in regards to operating equipment around the general public.

**Building Permit:**

A building permit is not required.

**Questions:**

Please refer to City Of Greeley General Terms and Conditions for items not listed on these pages.

Questions about the project can be answered at the Per-Bid walkthrough or by email Purchasing Manager. [doug.clapp@greeleygov.com](mailto:doug.clapp@greeleygov.com)

**Contact:**

**Dale Blehm, Project Manager**

Office phone: 970-350-9253

Cell phone: 970-539-6230

Fax # 970-350-9252

## TABLE OF CONTENTS

Section 26 01 00 .....	General Provisions
Section 26 01 01 .....	Miscellaneous Equipment and Systems
Section 26 05 00 .....	Common Work Results for Electrical
Section 26 05 01 .....	Remodel Work
Section 26 05 19 .....	Low-Voltage Electrical Power Conductors and Cables
Section 26 05 29 .....	Hangers and Supports for Electrical Systems
Section 26 05 33 .....	Raceway and Boxes for Electrical Systems
Section 26 27 26 .....	Wiring Devices
Section 26 51 00 .....	Interior Lighting

**THIS PAGE INTENTIONALLY LEFT BLANK**

## **SECTION 26 01 00**

### **GENERAL PROVISIONS**

#### **PART 1 - GENERAL**

##### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

##### **1.2 SUMMARY**

- A. Principal work in this Section
  1. Coordinate the electrical work with that of other trades.
  2. Complete branch circuit wiring for new and existing lighting
  3. Lighting fixtures and lamps.
  4. Adjustment of adjustable lighting fixtures and lamps.
  5. Dimming
- B. Available to Owner: Electrical Contractor shall be available to Owner for additional hook up to lights, equipment, etc. on time and material.

##### **1.3 LEGAL REQUIREMENTS AND STANDARDS**

- A. Particular attention is called to the following documents:
  1. National Electrical Code (NEC), 2017 Edition.
  2. International Building Code (IBC), 2018 Edition.
  3. International Energy Code (IECC) 2018 Edition.
- B. The requirements of the authority having jurisdiction shall be the minimum acceptable requirements for the work and nothing described in these Specifications or indicated on Drawings shall be construed to permit work not conforming to the most stringent of the applicable codes and regulations. When Drawings or Specifications call for materials or construction of better quality or larger size than by codes, laws, rules and regulations, Drawings and Specifications shall take precedence.
- C. New/Contractor furnished equipment not complying with the final inspection shall be removed and replaced with approved equipment at Contractor's expense.
- D. Should any changes to the work as indicated on Drawings or described in Specifications be necessary in order to comply with the above requirements notify Owner immediately and cease affected work until approval for any required modifications to the construction has been obtained from Owner.
- E. The Authority Having Jurisdiction (AHJ) on this project is the City of Greeley

##### **1.4 PERMITS AND FEES**

- A. Obtain and pay for fees, permits and inspections related to the electrical work. Deliver certificates of inspection to Owner. Provide copy of Permit to Owner as start of project.
- B. The Electrical Contractor shall be on site during all electrical inspections. No additional fees or overtime will be paid for after-hours inspections. Additionally, the Electrical Contractor should notify the Project Manager a minimum of 48 hours before all electrical inspections.

##### **1.5 MATERIALS**

- A. The label of listing by UL shall appear on materials and equipment for which standards have been established by that agency.
- B. Where State of Colorado or City of Greeley has established label of approval requirements,

furnish materials and equipment with either the required labels affixed or the necessary written approval.

- C. Drawings are designed around standard products of one or more of Manufacturers listed as being acceptable for the products involved.
- D. All materials shall be brand new and current production runs. No close-out items are allowed. Bear all costs associated with removing and replacing with specified materials.

#### **1.6 SUBSTITUTIONS**

- A. It is the intent of Specifications to establish quality standards of materials and equipment installed. Specific items are identified by Manufacturer, trade name or catalog designation. Should Contractor propose to furnish materials and equipment other than those specified as permitted by the "or approved equal" clauses, he shall submit a written request in duplicate at least seven days, excluding Saturdays, Sundays and Holidays prior to bidding date for any or all substitutions to the Owner along with a stamped self-addressed return envelope. Such a request shall be accompanied with complete descriptive and technical data and all other information deemed necessary by the Owner for evaluation. Substitutions submitted for approval shall list items as specified with the alternate substitution.
- B. Alternates: Where substitutions alter the design, conduit, wiring or space requirements indicated on the drawings, Contractor shall include items of cost for the revised design and construction.
- C. Approvals: Acceptance or rejection of proposed substitutions shall be subject to approval by Owner. Under no circumstances will Owner be required to prove substitution is not equal to specified item. It is mandatory that Contractor support his contention that proposed substitution is equal to item indicated in drawings and specifications. If requested by Owner or Engineer, Contractor shall submit samples of both specified and proposed substitute items for inspection.
- D. Substitutions sent by Fax Machine will not be acceptable and will not be reviewed.

#### **1.7 SHOP DRAWINGS**

- A. Submit electronic pdf files on all materials and equipment, even if same is as specified or shown on Drawings.
- B. Electrical Contractor shall provide shop drawing approval stamps on all equipment supplied by them prior to Engineer's shop drawing approval. Electrical Contractor to check for conformance with the design of the project and compliance with the information given in the contract documents. Contractor is responsible for dimensions, which shall be confirmed and correlated at the job site, fabrication process and techniques of construction.

#### **1.8 WARRANTY**

- A. Provide a minimum one year warranty on all material and labor, extended period of guarantee from date of acceptance shall apply for material and/or equipment as detailed in other sections of this specification.
- B. Standard warranty of Manufacturer shall apply for replacement of parts after expiration of above period. Manufacturer shall furnish replacement parts to Owner or his service agency as directed. Furnish to Owner printed Manufacturers' warranties complete with material included and expiration dates upon completion of Project.
- C. The Contractor shall provide a Maintenance Agreement to replace any lamps/ballasts that burn out, for any reason, for a period of one year. At end of one year, Contractor shall leave, in school stock, the required quantities of spare lamps and ballasts as required in other sections of this Specification.

#### **1.9 INTERPRETATIONS**

- A. All requests for interpretations of Drawings and Specifications must be made through Owner.

#### **1.10 COORDINATION AND COOPERATION**

- A. Drawings indicate diagrammatically the desired locations or arrangement of conduit runs, outlets, equipment, etc., and are to be followed, as closely as possible. Proper judgment must be exercised in executing the work so as to secure the best possible installation in the available



space and to overcome local difficulties due to space limitations or interference with structural conditions. Contractor is responsible for the correct placing of this work and the proper location and connection of this work in relation to the work of all trades.

- B. Lighting fixtures are shown in their approximate locations only. Do not install light outlets, conduits or fixtures in conflict with other trades prior to obtaining approval by owner; then lights shall be installed in locations best suited for equipment arrangement or as directed by Owner or Owner's Rep.
- C. Scaled and figured dimensions are approximate of typical equipment of the class indicated. Before proceeding with any work, carefully check and verify all dimensions, sizes, etc., with Drawings to see that the equipment will fit into the spaces provided without violation of applicable codes.
- D. Locate outlets for equipment by referring to Shop Drawings, Manufacturers' recommendations, and measuring actual equipment to be installed.
- E. Replace or repair, without additional compensation, any work which, in the opinion of Owner or Owner's Rep., does not comply with these requirements.

#### **1.11 OUTAGES**

- A. Coordinate all electrical service outages with Owner and General Contractor. Plan all work so that duration of outage is kept to an absolute minimum. Provide temporary wiring as necessary and as required in order to maintain continuous service for Owner's operation where outage must be accomplished during a time when power is deemed necessary by Owner, or when outage is to be of an extended duration (over six hours). All outage time and scheduling of same shall be as approved by Owner and shall conform to Owner's schedules.

#### **1.12 REMODEL WORK**

- A. "In as much as the remodeling and/or rehabilitation of an existing building requires that certain assumptions be made regarding existing conditions, and because some of these assumptions may not be verifiable without expending additional sums of money, or destroying otherwise adequate or serviceable portions of the building, Electrical Contractor and Owner will hold harmless, indemnify and defend Design Professional from and against any and all claims arising out of the professional services provided under this agreement".
- B. Electrical Contractor shall attend site walk through scheduled prior to bid. Bid shall not be accepted if Electrical Contractor does not attend pre-bid walk through.
- C. Electrical Contractor shall remove all wiring devices, light fixtures, etc., which are indicated to be removed. In general, symbols which are dashed indicate existing devices which are to remain. Symbols which are dashed and crosshatched are existing devices which are to be removed. Devices which are to be removed may require reworking conduit and wiring in order to maintain service to other devices. If removed devices are on walls or ceilings which are to remain, blank coverplates are to be installed on outlet boxes.
- D. Where remodeling interferes with circuits in areas which are otherwise undisturbed, circuits shall be reworked as required to maintain circuit continuity.
- E. Existing devices and circuiting which are shown are indicated only for informational purposes. Electrical Contractor shall visit the site and shall verify conditions as they exist and shall remove, relocate and/or rework any electrical equipment or circuits affected (whether indicated or not) due to removal or reworking of existing walls, ceilings, etc. Electrical Contractor shall familiarize himself with all work to be done prior to submitting bid.
- F. Coordinate routing of all conduits with Mechanical and Plumbing Contractors in order to avoid conflicts with ducts, pipes, etc.
- G. Lighting fixtures removed and reused shall be cleaned and reconditioned by Contractor prior to reinstallation. Provide new lamps, etc., as required to restore fixtures to operation condition.
- H. All equipment, fixtures, devices, etc., which are removed shall be delivered to Owner. All items which are removed and not wanted by Owner and which are not reused shall become the property of Electrical Contractor and shall be removed from site.
- I. The cost of cutting and patching necessary for the installation or removal of electrical work shall

be included in the Electrical Contract. Coordinate with General Contractor.

- J. Electrical Contractor shall remove and replace lighting fixtures; rework, relocate and replace conduit and wiring and do other work required by the installation of new ductwork, piping, etc., above existing ceiling. Coordinate with other Contractors and verify the extent of the work.
  - K. Areas of Removal: Electrical Contractor shall check areas of demolition for electrical damage and physical damage. See damaged existing electrical equipment and device paragraph. If existing electrical equipment and devices do not have electrical power, Electrical Contractor is responsible to provide power from electrical panels determined by Engineer.
  - L. Damaged Existing Electrical Equipment and Services:
    - 1. Existing damaged equipment and devices that are to be reused shall be reported to Owner in writing. The equipment and devices will be evaluated by the design team as to their reuse status. Damaged equipment and devices not reported to Owner in writing shall be the responsibility of Electrical Contractor to replace with new equipment and devices.
  - M. Existing Devices: Existing surface mounted receptacles and telephone outlets that remain shall be dropped to 12" AFF in remodel areas only.
  - N. Maximum Load on a Circuit:
    - 1. Maximum nine (9) duplex receptacles in one branch circuit.
    - 2. Maximum of 12A of lighting in one branch circuit.
    - 3. Other electrical equipment per current National Electrical Code.
  - O.
- 1.13 CONSTRUCTION POWER AND LIGHT.**
- A. Provide construction power and lighting for construction as required. Energy costs will be paid by Contractor. All temporary facilities shall be properly grounded, shall comply with NEC and OSHA requirements, and shall have ground fault protection.

**END OF SECTION**

## SECTION 26 01 01

### MISCELLANEOUS EQUIPMENT AND SYSTEMS

#### PART 1 - GENERAL

##### 1.1 RELATED DOCUMENTS

- A. Drawings and general provision of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

##### 1.2 DESCRIPTION

- A. This Section describes the principal electrical work related to the furnishing, installation, connection, and control of equipment under this Contract and includes electrical work for future or Owner furnished power equipment. Should the examination of related work indicate discrepancies or omissions; request clarification from Owner prior to performing or omitting any electrical work.
- B. Refer to Drawings and other Contract Documents for description of items being furnished by Owner.
- C. Principal work in this Section:
  - 1. The requirements of Section 26 01 00 apply to work of this Section.
  - 2. Electrical work for powered equipment specified or indicated as furnished by separate contracts, as future installations, or by Owner, during construction.
  - 3. Empty raceway systems for, but not necessarily limited to, these systems:
    - a. Door Openers
    - b. CATV
    - c. Voice/Data
    - d. Paging System
  - 4. Wiring above suspended ceilings.
  - 5. Owner Furnished Equipment.

##### 1.3 EMPTY RACEWAY SYSTEMS

- A. Provide empty raceway systems with conduit, J-boxes, plywood fire retardant backboards, and all miscellaneous appurtenances required for complete system. Leave empty raceway systems complete with pull rope, minimum 4' extra length at each end, properly tagged.
- B. Systems shall meet requirements of, be accepted by, and be approved by the State Building Department, utility, equipment supplier, Owner, or Contractor furnishing system equipment and wiring for the system involved.
- C. Empty raceway systems include systems in hollow walls. Provide J-boxes, conduit stubs, bushed ends, plaster frames, coverplates, and pull wires from outlet to J-box above accessible ceilings.
- D. Empty raceway systems for Divisions 27 & 28 shall conform to the following additional requirements:
  - 1. Raceways 1 1/2" trade size and larger shall be provided with pull ropes, and bushed ends, 3/16" diameter polypropylene, with 700 lbs. minimum breaking strength. 3/32" 200 lb. pull lines shall be installed for 1 1/4" conduits and smaller.
  - 2. Unless indicated otherwise, outlets located in stud walls, masonry walls or masonry partitions shall be flush-mounted, securely attached to metal studs or other suitable backing. Size of opening and coverplates shall be as specified under "Plates" in Section 26 27 26. Conduits for these outlets shall be terminated and bushed. A pull wire or cord is required.
  - 3. See "Raceways and Boxes" for additional requirements.
- E. Empty raceway systems for electrical power systems.
  - 1. Provide spare service conduits as indicated on electrical one-line.
  - 2. Provide spare 3/4"C for every 3 spares or spaces in all flush mounted panelboards to above accessible ceilings with 90 degree elbows, bush ends.

- F. All low voltage cabling routed through exposed structural ceiling areas (auditoriums, gymnasiums, etc.) and inaccessible areas (gyp ceilings, etc.) must be routed in conduit. Electrical Contractor (EC) to coordinate with special systems providers for installation of appropriate raceway systems as the requirements is not necessarily indicated on drawings.

#### **1.4 WIRING ABOVE SUSPENDED CEILINGS**

- A. Approved Class II wiring systems such as controls, telephone, intercom, TV, etc., may be routed without conduit on bridal rings (five feet on center and neatly trained) where above suspended accessible ceiling systems unless otherwise indicated. Where wiring runs occur in inaccessible construction such as underfloor, in walls, above gypsum board ceilings, etc., provide all necessary outlets and conduits stubbed into nearest accessible suspended ceiling space. Wiring in all exposed areas such as exposed ceilings, surface mounted on walls, etc., shall be routed in conduit. All conduit stubs shall be tagged. Where suspended ceiling plenums are used for transportation of environmental air and where required by local inspection authority, all Class II wiring runs shall be enclosed in an approved raceway system or approved return plenum cable on bridal ring system. This shall include all systems such as telephone, data, etc., even if this Contractor is not providing the cables or conductors. Refer to Article 300-22 of the NEC and Division 27 requirements.

#### **1.5 OWNER FURNISHED EQUIPMENT**

- A. Coordinate with Owner to determine the extent and arrangement of the installation. Provide all necessary raceways, outlets, disconnects, receptacles, cords, pigtails, etc., as required for a complete connection of all equipment and related controls.
- B. All rough-in requirements shall be verified with Owner prior to beginning work. All dimensional data and electrical characteristics shall be verified with Owner. All final connections shall be accomplished per Owner's recommendations.

**END OF SECTION**

## SECTION 26 05 00

### COMMON WORK RESULTS FOR ELECTRICAL

#### PART 1 - GENERAL

##### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

##### 1.2 SUMMARY

- A. Section Includes:
  - 1. Electrical equipment coordination and installation.
  - 2. Sleeves for raceways and cables.
  - 3. Sleeve seals.
  - 4. Grout.
  - 5. Common electrical installation requirements.

##### 1.3 DEFINITIONS

- A. EPDM: Ethylene-propylene-diene terpolymer rubber.
- B. NBR: Acrylonitrile-butadiene rubber.

##### 1.4 SUBMITTALS

- A. Product Data: For sleeve seals.

##### 1.5 COORDINATION

- A. Coordinate arrangement, mounting, and support of electrical equipment:
  - 1. To allow maximum possible headroom unless specific mounting heights that reduce headroom are indicated.
  - 2. To provide for ease of disconnecting the equipment with minimum interference to other installations.
  - 3. To allow right of way for conduit installed at required slope.
  - 4. So connecting raceways, cables, wireways, cable trays, and busways will be clear of obstructions and of the working and access space of other equipment.
- B. Coordinate installation of required supporting devices and set sleeves in cast-in-place concrete, masonry walls, and other structural components as they are constructed.
- C. Coordinate location of access panels and doors for electrical items that are behind finished surfaces or otherwise concealed. Access doors and panels are specified in Division 08 Section "Access Doors and Frames."
- D. Coordinate sleeve selection and application with selection and application of firestopping specified in Division 07 Section "Penetration Firestopping."

#### PART 2 - PRODUCTS

##### 2.1 SLEEVES FOR RACEWAYS AND CABLES

- A. Steel Conduit Sleeves: ASTM A 53/A 53M, Type E, Grade B, Schedule 40, galvanized steel, plain ends.

##### 2.2 SLEEVE SEALS

- A. Description: Modular sealing device, designed for field assembly, to fill annular space between sleeve and raceway or cable.
  - 1. Basis-of-Design Product: Subject to compliance with requirements, provide comparable product by one of the following:
    - a. Advance Products & Systems, Inc.
    - b. Calpico, Inc.
    - c. Metraflex Co.
    - d. Pipeline Seal and Insulator, Inc.

2. Sealing Elements: EPDM, NBR interlocking links shaped to fit surface of cable or conduit. Include type and number required for material and size of raceway or cable.

### **2.3 GROUT**

- A. Nonmetallic, Shrinkage-Resistant Grout: ASTM C 1107, factory-packaged, nonmetallic aggregate grout, noncorrosive, nonstaining, 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. Measure indicated mounting heights to bottom of unit for suspended items and to center of unit for wall-mounting items.
- C. Headroom Maintenance: If mounting heights or other location criteria are not indicated, arrange and install components and equipment to provide maximum possible headroom consistent with these requirements.
- D. Equipment: Install to facilitate service, maintenance, and repair or replacement of components of both electrical equipment and other nearby installations. Connect in such a way as to facilitate future disconnecting with minimum interference with other items in the vicinity.
- E. Right of Way: Give to piping systems installed at a required slope.

### **3.2 SLEEVE INSTALLATION FOR ELECTRICAL PENETRATIONS**

- A. Electrical penetrations occur when raceways, cables, wireways, cable trays, or busways penetrate concrete slabs, concrete or masonry walls, or fire-rated floor and wall assemblies.
- B. Concrete Slabs and Walls: Install sleeves for penetrations unless core-drilled holes or formed openings are used. Install sleeves during erection of slabs and walls.
- C. Use pipe sleeves unless penetration arrangement requires rectangular sleeved opening.
- D. Fire-Rated Assemblies: Install sleeves for penetrations of fire-rated floor and wall assemblies unless openings compatible with firestop system used are fabricated during construction of floor or wall.
- E. Cut sleeves to length for mounting flush with both surfaces of walls.
- F. Extend sleeves installed in floors 2 inches above finished floor level.
- G. Size pipe sleeves to provide 1/4-inch annular clear space between sleeve and raceway or cable, unless indicated otherwise.
- H. Seal space outside of sleeves with grout for penetrations of concrete and masonry
  1. Promptly pack grout solidly between sleeve and wall so no voids remain. Tool exposed surfaces smooth; protect grout while curing.
- I. Interior Penetrations of Non-Fire-Rated Walls and Floors: Seal annular space between sleeve and raceway or cable, using joint sealant appropriate for size, depth, and location of joint. Comply with requirements in Division 07 Section "Joint Sealants."
- J. Fire-Rated-Assembly Penetrations: Maintain indicated fire rating of walls, partitions, ceilings, and floors at raceway and cable penetrations. Install sleeves and seal raceway and cable penetration sleeves with firestop materials. Comply with requirements in Division 07 Section "Penetration Firestopping."
- K. Roof-Penetration Sleeves: Seal penetration of individual raceways and cables with flexible boot-type flashing units applied in coordination with roofing work.
- L. Aboveground, Exterior-Wall Penetrations: Seal penetrations using steel pipe sleeves and mechanical sleeve seals. Select sleeve size to allow for 1-inch annular clear space between pipe and sleeve for installing mechanical sleeve seals.

- M. Underground, Exterior-Wall Penetrations: Install PVC Schedule 80 pipe sleeves. Size sleeves to allow for 1-inch annular clear space between raceway or cable and sleeve for installing mechanical sleeve seals.

### **3.3 SLEEVE-SEAL INSTALLATION**

- A. Install to seal exterior wall penetrations.
- B. Use type and number of sealing elements recommended by manufacturer for raceway or cable material and size. Position raceway or cable in center of sleeve. Assemble mechanical sleeve seals and install in annular space between raceway or cable and sleeve.

### **3.4 FIRESTOPPING**

- A. Apply firestopping to penetrations of fire-rated floor and wall assemblies for electrical installations to restore original fire-resistance rating of assembly. Firestopping materials and installation requirements are specified in Division 07 Section "Penetration Firestopping."

**END OF SECTION**

**THIS PAGE INTENTIONALLY LEFT BLANK**



## **SECTION 26 05 01**

### **REMODEL WORK**

#### **PART 1 - GENERAL**

##### **1.1 REMODEL WORK**

- A. Electrical Contractor shall remove all wiring devices, light fixtures, etc., which are indicated to be removed. In general, symbols which are dashed indicate existing devices which are to remain. Symbols which are dashed and which are crosshatched through indicate existing devices which are to be removed. Devices which are to be removed may require reworking conduit and wiring in order to maintain service to other devices. If removed devices are on walls or ceilings which are to remain, blank coverplates are to be installed on outlet boxes.
- B. Where remodeling interferes with circuits in areas which are otherwise undisturbed, circuits shall be reworked as required.
- C. Existing devices and circuiting which are shown are indicated only for informational purposes. Electrical Contractor shall visit the site and shall verify conditions as they exist and shall remove, relocate and/or rework any electrical equipment or circuits affected (whether indicated or not) due to removal or reworking of existing walls, ceilings, etc. Electrical Contractor shall familiarize himself with all work to be done by other trades by studying Architectural, Structural, Mechanical and Plumbing Drawings.
- D. Coordinate routing of all conduits with Mechanical and Plumbing Contractors in order to avoid conflicts with ducts, pipes, etc.
- E. Lighting fixtures removed and reused shall be cleaned and reconditioned by Contractor prior to reinstallation. Provide new lamps, etc., as required to restore fixtures to operational condition.
- F. All equipment, fixtures, devices, etc., which are removed shall be delivered to Owner for disposition. All items which are removed and not wanted by Owner and which are not reused shall become the property of Electrical Contractor and shall be removed from site.
- G. The cost of cutting and patching necessary for the installation or removal of electrical work shall be included in the Electrical Contract. Coordinate with General Contractor.
- H. Electrical Contractor shall remove and replace lighting fixtures; rework, relocate and replace conduit and wiring and do other work required by the installation of new ductwork, piping, etc., above existing ceiling. Coordinate with other Contractors and verify the extent of the work.
- I. Electrical contractor shall coordinate with painting contractor to ensure all raceway and exposed work and repair is painted to match painting in area of contract.

**END OF SECTION**

**THIS PAGE INTENTIONALLY LEFT BLANK**

## SECTION 26 05 19

### LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

#### PART 1 - GENERAL

##### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

##### 1.2 SUMMARY

- A. This Section includes the following:
  - 1. Building wires and cables rated 600 V and less.
  - 2. Connectors, splices, and terminations rated 600 V and less.
  - 3. Sleeves and sleeve seals for cables.

##### 1.3 DEFINITIONS

- A. EPDM: Ethylene-propylene-diene terpolymer rubber.
- B. NBR: Acrylonitrile-butadiene rubber.

##### 1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Qualification Data: For testing agency.
- C. Field quality-control test reports.

##### 1.5 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- B. Comply with NFPA 70.

##### 1.6 COORDINATION

- A. Set sleeves in cast-in-place concrete, masonry walls, and other structural components as they are constructed.

#### PART 2 - PRODUCTS

##### 2.1 CONDUCTORS AND CABLES

- A. Building Wire
  - 1. Thermoplastic-Insulated Building Wire: NEMA WC 5.
  - 2. Rubber -Insulated Building Wire: NEMA WC3.
  - 3. Feeders and Branch Circuits 8 AWG and larger: Copper, stranded conductor, 600 volt insulation, 75° C, THHN/THWN, XHHW.
  - 4. Branch Circuits 10 AWG and Smaller: Copper Conductor, solid conductor, 600 volt insulation, THW, THHN/THWN, XHHW.
  - 5. Control circuits: Copper, #14 AWG, 19/25 stranding, THHN, 90° C, 600 volt (use THWN in damp and wet locations). Multi-conductor control cables are allowed where more than three conductors are used between common terminations. Minimum of two spare control conductors in each cable.
  - 6. All wiring shall be #12 solid, minimum, with full size ground conductors unless specifically noted otherwise for certain limited applications.
  - 7. 600 volt cross linked polyethylene or thermoplastic insulated copper, 98% conductivity, single conductor.
  - 8. Aluminum conductors are prohibited in any application.
  - 9. All branch circuits, feeders and service conductors shall be factory color coded the entire length of conductor.

10. Cables in underground conduit shall be rated for wet location per NEC 300.5 (B).
- B. Remote Control and signal cable.
  1. Control Cable for Class 1 Remote Control and Signal Circuits: Copper conductor, 600 volt insulation, rated 75° C, individual conductors twisted together shielded, and covered with interlocked aluminum armor.
  2. Control Cable for Class 2 or Class 3 Remote Control and Signal Circuits: Copper conductor, 300 volt insulation, rated 75° C, individual conductors twisted together, shielded, and covered with a non metallic jacket; UL listed and labeled as CL2, C3, CL2R, CL3R, or PLTC.
  3. Plenum Cable for Class 2 or Class 3 Remote Control and Signal Circuits: Copper conductor, 300 volt insulation, rated 75° C, individual conductors twisted together, shielded, and covered with a non metallic jacket; UL listed for use in air handling ducts, hollow spaces used as ducts, and plenums and labeled as CL2P or CL3P.
- C. Armored Cable, MC Cable, AC Cable, ENT/NM, and Modular Wire: Prohibited.
- D. MC Cable is allowed for connection to fixtures, maximum length of 10 ft.

## **2.2 CONNECTORS AND SPLICES**

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  1. AFC Cable Systems, Inc.
  2. Hubbell Power Systems, Inc.
  3. O-Z/Gedney; EGS Electrical Group LLC.
  4. 3M; Electrical Products Division.
  5. Tyco Electronics Corp.
- B. Description: Factory-fabricated connectors and splices of size, ampacity rating, material, type, and class for application and service indicated.

## **2.3 SLEEVES FOR CABLES**

- A. Sleeves: Refer to Specification Section 26 05 00.
- B. Coordinate sleeve selection and application with selection and application of firestopping specified in Division 07 Section "Penetration Firestopping."

## **2.4 SLEEVE SEALS**

- A. Sleeve Seals: Refer to Specification Section 26 05 00.

# **PART 3 - EXECUTION**

## **3.1 CONDUCTOR MATERIAL APPLICATIONS**

- A. Feeders: Copper. Stranded for No. 12 AWG and larger.
- B. Branch Circuits: Copper. Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.
- C. Control Wiring and Connection to Vibrating Equipment (motors, transformers, etc.): Stranded Copper.

## **3.2 CONDUCTOR INSULATION AND MULTICONDUCTOR CABLE APPLICATIONS AND WIRING METHODS**

- A. Service Entrance: Type THHN-THWN, or XHHW single conductors in raceway.
- B. Exposed Feeders: Type THHN-THWN, or XHHW single conductors in raceway.
- C. Feeders Concealed in Ceilings, Walls, Partitions, and Crawlspace: Type THHN-THWN, XHHW single conductors in raceway.
- D. Feeders Concealed in Concrete, below Slabs-on-Grade, and underground: Type THHN-THWN, XHHW single conductors in raceway.
- E. Exposed Branch Circuits, Including in Crawlspace: Type THHN-THWN, single conductors in raceway.
- F. Branch Circuits Concealed in Ceilings, Walls, and Partitions: Type THHN-THWN, single conductors in raceway.

- G. Branch Circuits Concealed in Concrete, below Slabs-on-Grade, and underground: Type THHN-THWN, single conductors in raceway.
- H. Cord Drops and Portable Appliance Connections: Type SO, hard service cord with stainless-steel, wire-mesh, and strain relief device at terminations to suit application.
- I. Class 1 Control Circuits: Type THHN-THWN, in raceway.
- J. Class 2 Control Circuits: Type THHN-THWN, in raceway. Power-limited plenum cable concealed in building finishes except all fire alarm cabling shall be installed in conduit U.O.N. in Fire Alarm Specifications. All cabling shall be in raceway in exposed structural ceiling spaces in areas such as Gymnasiums, Cafeteriums, etc.

### **3.3 CONDUCTOR NEUTRAL APPLICATIONS**

- A. Neutrals: copper, same size as phase conductor, derating neutrals not allowed.
- B. Feeder neutrals to lighting or computer panels shall be 200 percent.
- C. Provide separate Neutral conductors for each 15 or 20 amp (120 or 277V) single pole breaker.
  - 1. All existing circuits involved in project using shared neutral provide tie handles on branch circuit breaker per NEC.

### **3.4 INSTALLATION OF CONDUCTORS AND CABLES**

- A. Conceal cables in finished walls, ceilings, and floors, unless otherwise indicated.
- B. Use manufacturer-approved (-20° F) pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.
- C. The use of pulling means, such as fish tape, cable, rope, and basket-weave wire/cable grips, are to be used in such a way that they will not damage cables or raceway.
- D. Install exposed cables parallel and perpendicular to surfaces of exposed structural members, and follow surface contours where possible.
- E. Support cables according to Division 26; Section "Hangers and Supports for Electrical Systems."
- F. Identify and color-code conductors and cables according to Division 26; Section "Identification for Electrical Systems."
- G. General
  - 1. Use no wire smaller than 12 AWG for power and lighting circuits and no wire smaller than 14 AWG for control wiring.
  - 2. Use 10 AWG conductors for 20 ampere, 120 volt branch circuit for home runs longer than 75 feet.
  - 3. Splice only in junction or outlet boxes.
  - 4. Make conductor lengths for parallel circuits equal.
- H. Wiring installation in raceways.
  - 1. Completely and thoroughly clean and dry inside of raceway systems before installing conductors.
  - 2. Pull all conductors, disconnect, boxes, etc. into a raceway at the same time after raceway system is complete. Do not allow exposed wire. This requirement includes roofs and exterior locations. Use UL-listed low temp rated wire pulling lubricant for pulling 4 AWG and larger wires.
  - 3. Install wire in raceway after interior of building has been physically protected from the weather and all mechanical work likely to injure conductors has been completed.
- I. Support cables above accessible ceilings at five-foot intervals; do not rest on ceiling tiles. Do not use fixture wire supports. Use spring metal clips and dedicated hanger rods to support cables from structure. Cables shall be installed at perpendicular angles to building surfaces.

### **3.5 CONNECTIONS**

- A. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.

- B. Make splices and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than unspliced conductors.
- C. Wiring at Outlets: Install conductor at each outlet, with at least 6 inches (150 mm) exposed.
- D. Wiring connections and terminations.
  - 1. Splice only in readily accessible junction boxes.
  - 2. Use solderless pressure connectors with insulating covers for copper wire splices and taps, 1- AWG and smaller.
  - 3. Use insulated spring wire connectors with plastic caps for 10 AWG and smaller.
  - 4. Use Ilsco Clear Tap or Burndy Hi Press lugs on wire #8 AWG and larger.
  - 5. Tape or heat shrink un-insulated conductors and connectors with electrical tape to 150 % of the insulation value of the conductor.
  - 6. Terminate spare conductors with electrical tape.

**3.6 SLEEVE INSTALLATION FOR ELECTRICAL PENETRATIONS**

- A. Sleeve Installation for Electrical Penetrations: Refer to Specification Section 26 05 00.

**3.7 SLEEVE-SEAL INSTALLATION**

- A. Sleeve-Seal Installation: Refer to Specification Section 26 0500.

**3.8 FIRESTOPPING**

- A. Firestopping: Refer to Specification Section 26 0500

**END OF SECTION**

## SECTION 26 05 29

### HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

#### PART 1 - GENERAL

##### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

##### 1.2 SUMMARY

- A. This Section includes the following:
  - 1. Hangers and supports for electrical equipment and systems.
  - 2. Construction requirements for concrete bases.

##### 1.3 PERFORMANCE REQUIREMENTS

- A. Design supports for multiple raceways capable of supporting combined weight of supported systems and its contents.
- B. Suitable for use in corrosive environments
- C. Design equipment supports capable of supporting combined operating weight of supported equipment and connected systems and components.
- D. Rated Strength: Adequate in tension, shear, and pullout force to resist maximum loads calculated or imposed for this Project, with a minimum structural safety factor of five times the applied force.

##### 1.4 SUBMITTALS

- A. Product Data: For the following:
  - 1. Trapeze hangers. Include Product Data for components.
  - 2. Steel slotted channel systems. Include Product Data for components.
  - 3. Equipment supports.

##### 1.5 QUALITY ASSURANCE

- A. Comply with NFPA 70.
- B. Welding: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code – Steel".

#### PART 2 – PRODUCTS

##### 2.1 SUPPORT, ANCHORAGE, AND ATTACHMENT COMPONENTS

- A. Steel Slotted Support Systems: Comply with MFMA-4, factory-fabricated components for field assembly.
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Allied Tube & Conduit.
    - b. Cooper B-Line, Inc.; a division of Cooper Industries.
    - c. ERICO International Corporation.
    - d. GS Metals Corp.
    - e. Thomas & Betts Corporation.
    - f. Unistrut; Tyco International, Ltd.
    - g. Wesanco, Inc.
  - 2. Metallic Coatings: Stainless steel or Hot-dip galvanized after fabrication and applied according to MFMA-4.
  - 3. Channel Dimensions: Selected for applicable load criteria.
- B. Raceway and Cable Supports: As described in NECA 1 and NECA 101.
- C. Conduit and Cable Support Devices: Steel hangers, clamps, and associated fittings, designed for types and sizes of raceway or cable to be supported. Perforated pipe straps and wire of any type is prohibited.
- D. Support for Conductors in Vertical Conduit: Factory-fabricated assembly consisting of threaded body and insulating wedging plug or plugs for non-armored electrical conductors or cables in

riser conduits. Plugs shall have number, size, and shape of conductor gripping pieces as required to suit individual conductors or cables supported. Body shall be malleable iron.

- E. Structural Steel for Fabricated Supports and Restraints: ASTM A 36/A 36M, steel plates, shapes and bars, black and galvanized.
- F. Mounting, Anchoring, and Attachment Components: Items for fastening electrical items or their supports to building surfaces include the following:
  - 1. Powder-Actuated Fasteners (only allowed with specific written permission from Owner): Threaded-steel stud, for use in hardened Portland cement concrete, steel, or wood, with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.
    - a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      - 1) Hilti Inc.
      - 2) ITW Ramset/Red Head; a division of Illinois Tool Works, Inc.
      - 3) MKT Fastening, LLC.
      - 4) Simpson Strong-Tie Co., Inc.; Masterset Fastening Systems Unit.
  - 2. Mechanical-Expansion Anchors: Insert-wedge-type, zinc-coated steel, for use in hardened Portland cement concrete with tension, shear, and pullout capacities appropriate for supported loads and building materials in which used.
    - a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      - 1) Cooper B-Line, Inc.; a division of Cooper Industries.
      - 2) Empire Tool and Manufacturing Co., Inc.
      - 3) Hilti Inc.
      - 4) ITW Ramset/Red Head; a division of Illinois Tool Works, Inc.
      - 5) MKT Fastening, LLC.
  - 3. Concrete Inserts: Steel or malleable-iron, slotted support system units similar to MSS Type 18; complying with MFMA-4 or MSS SP-58.
  - 4. Clamps for Attachment to Steel Structural Elements: MSS SP-58, type suitable for attached structural element.
  - 5. Through Bolts: Structural type, hex head, and high strength. Comply with ASTM A 325.
  - 6. Toggle Bolts: All-steel springhead type.
  - 7. Hanger Rods: 1/4" diameter threaded steel.
  - 8. Conduit straps shall be of steel and two-hole construction.
  - 9. All suspended items shall be either directly attached to structured or attached to structure via threaded rod.

## **2.2 FABRICATED METAL EQUIPMENT SUPPORT ASSEMBLIES**

- A. Description: Welded or bolted, structural-steel shapes, shop or field fabricated to fit dimensions of supported equipment.

## **PART 3 - EXECUTION**

### **3.1 APPLICATION**

- A. Comply with NECA 1 and NECA 101 for application of hangers and supports for electrical equipment and systems except if requirements in this Section are stricter.
- B. Maximum Support Spacing and Minimum Hanger Rod Size for Raceway: Space supports for EMT, IMC, and RMC (2') two feet from panels, boxes and conduit bodies – (8) eight feet on center thereafter. Minimum rod size shall be 1/2 inch in diameter.
- C. Multiple Raceways: Install trapeze-type supports fabricated with steel slotted or other support system, sized so capacity can be increased by at least 25 percent in future without exceeding specified design load limits.
  - 1. Secure raceways to these supports with single-bolt or two-bolt conduit clamps.
- D. Spring-steel clamps designed for supporting single conduits without bolts may be used for 1-1/2-inch and smaller raceways serving branch circuits and communication systems above suspended ceilings and for fastening raceways to trapeze supports.



### **3.2 SUPPORT INSTALLATION**

- A. Comply with NECA 1 and NECA 101 for installation requirements except as specified in this Article.
- B. Raceway Support Methods: In addition to methods described in NECA 1, EMT, IMC, and RMC may be supported directly to structure, as permitted in NFPA 70. Do not fasten supports to piping, ductwork, mechanical equipment, conduit or ceiling system suspension wires of wire of any type.
- C. Strength of Support Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design load used for strength determination shall be weight of supported components plus 200 lbs. (90 kg).
- D. Mounting and Anchorage of Surface-Mounted Equipment and Components: Anchor and fasten electrical items and their supports to building structural elements by the following methods unless otherwise indicated by code:
  - 1. To Wood: Fasten with lug screws or through bolts.
  - 2. To New Concrete: Bolt to concrete inserts.
  - 3. To Masonry: Approved toggle-type bolts on hollow masonry units and expansion anchor fasteners on solid masonry units.
  - 4. To Existing Concrete: Expansion anchor fasteners.
  - 5. Instead of expansion anchors (with specific written permission from Owner), powder-actuated driven threaded studs provided with lock washers and nuts may be used in existing standard-weight concrete 4 inches thick or greater. Do not use for anchorage to lightweight-aggregate concrete or for slabs less than 4 inches thick.
  - 6. To Steel: Beam clamps (MSS Type 19, 21, 23, 25, or 27) complying with MSS SP-69.
  - 7. To Light Steel: Sheet metal screws.
  - 8. Items Mounted on Hollow Walls and Nonstructural Building Surfaces: Mount cabinets, panelboards, disconnect switches, control enclosures, pull and junction boxes, transformers, and other devices on slotted-channel racks attached to substrate by means that meet seismic-restraint strength and anchorage requirements.
- E. Drill holes for expansion anchors in concrete at locations and to depths that avoid reinforcing bars.
- F. Drilling or other modifications of structural steel members is prohibited without specific written permission from the Structural Engineer.

### **3.3 INSTALLATION OF FABRICATED METAL SUPPORTS**

- A. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor electrical materials and equipment.
- B. Field Welding: Comply with AWS D1.1/D1.1M.

### **3.4 PAINTING**

- A. Touchup: Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting. Comply with SSPC-PA 1 requirements for touching up field-painted surfaces.
  - 1. Apply paint by brush or spray to provide minimum dry film thickness of 2.0 mils.
- B. Touchup: Comply with requirements in Division 09 painting Sections for cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint on miscellaneous metal.
- C. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A 780.

**END OF SECTION**



## SECTION 26 05 33

### RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS

#### PART 1 - GENERAL

##### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. General Note: Elevator and temperature control work should comply with Division 26 requirements.

##### 1.2 SUMMARY

- A. This Section includes raceways, fittings, boxes, enclosures, and cabinets for electrical wiring.
- B. Related Sections include the following:
  - 1. Division 26 Section "Underground Ducts and Raceways for Electrical Systems" for exterior ductbanks, manholes, handholes, boxes and underground utility construction.

##### 1.3 DEFINITIONS

- A. EMT: Electrical metallic tubing.
- B. FMC: Flexible metal conduit.
- C. IMC: Intermediate metal conduit.
- D. LFMC: Liquidtight flexible metal conduit.
- E. RNC: Rigid nonmetallic conduit.

##### 1.4 SUBMITTALS

- A. Product Data: For surface raceways, wireways and fittings, floor boxes, hinged-cover enclosures, and cabinets.

##### 1.5 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- B. Comply with NFPA 70.

#### PART 2 - PRODUCTS

##### 2.1 METAL CONDUIT AND TUBING

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. AFC Cable Systems, Inc.
  - 2. Alflec Inc. (Southwire)
  - 3. Allied Tube & Conduit; a Tyco International Ltd. Co.
  - 4. Anamet Electrical, Inc.; Anaconda Metal Hose.
  - 5. Electri-Flex Co.
  - 6. Manhattan/CDT/Cole-Flex (Alpha Wiring)
  - 7. Maverick Tube Corporation (Tenaris).
  - 8. O-Z Gedney; a unit of General Signal.
  - 9. Western Tube and Conduit.
  - 10. Wheatland Tube Company.
- B. Rigid Steel Conduit, Zinc Coated: ANSI C80.1.
- C. IMC: ANSI C80.6.
- D. PVC-Coated Steel Conduit: PVC-coated rigid steel conduit.
  - 1. Comply with NEMA RN 1.
  - 2. Coating Thickness: 0.040 inch, minimum.

- E. EMT, Zinc Coated: ANSI C80.3.
- F. FMC: Zinc-coated steel, full wall.
- G. LFMC: Flexible steel conduit with PVC jacket.
- H. Fittings for Conduit (Including all Types and Flexible and Liquidtight), EMT: NEMA FB 1; listed for type and size raceway with which used, and for application and environment in which installed. All fittings shall have insulated throats.
  - 1. Coating for Fittings for PVC-Coated Conduit: Minimum thickness, 0.040 inch (1 mm), with overlapping sleeves protecting threaded joints, NEMA TC2 and TC3.
  - 2. Conduit Fittings for EMT: Steel set screw type (Dry applications).
  - 3. Conduit Fittings for EMT: Steel compression type (damp/wet applications).
- I. Joint Compound for Rigid Steel Conduit or IMC: Listed for use in cable connector assemblies, and compounded for use to lubricate and protect threaded raceway joints from corrosion and enhance their conductivity.

## **2.2 NONMETALLIC CONDUIT AND TUBING**

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. AFC Cable Systems, Inc.
  - 2. Anamet Electrical, Inc.; Anaconda Metal Hose.
  - 3. Arnco Corporation.
  - 4. CANTEX Inc.
  - 5. CertainTeed Corp.; Pipe & Plastics Group.
  - 6. Condux International, Inc.
  - 7. ElecSYS, Inc.
  - 8. Electri-Flex Co.
  - 9. Lamson & Sessions; Carlon Electrical Products.
  - 10. Manhattan/CDT/Cole-Flex (Alpha Wiring).
  - 11. Prime Conduit.
  - 12. RACO; a Hubbell Company.
  - 13. Thomas & Betts Corporation.
- B. RNC: NEMA TC 2, Type EPC-40-PVC, unless otherwise indicated.
- C. LFNC: UL 1660.
- D. ENT, AC, NM or other pre-wired systems are not approved for this project.
- E. Conduit Fittings for RNC: NEMA TC 3; match to conduit or tubing type and material.

## **2.3 METAL WIREWAYS**

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. Cooper B-Line, Inc.
  - 2. Hoffman.
  - 3. Square D; Schneider Electric.
  - 4. Wiremold Company (The), Electrical Sales Division.
- B. Description: Sheet metal sized and shaped as indicated, NEMA 250, Type 1, 12, 3R, unless otherwise indicated.
- C. Fittings and Accessories: Include couplings, offsets, elbows, expansion joints, adapters, hold-down straps, end caps, and other fittings to match and mate with wireways as required for complete system.
- D. Wireway Covers: Hinged type.
- E. Finish: Manufacturer's standard enamel finish.

## **2.4 SURFACE RACEWAYS**

- A. Surface Metal Raceways: Galvanized steel with snap-on covers.
  - 1. Manufacturers:
    - a. Carlton

- b. IsoDuct
  - c. Panduit
  - d. Pass & Seymour
  - e. Walker Systems, Inc.; Wiremold Company (The).
- 2. Couplings, elbows and connectors designed for use with the raceway system
- 3. Boxes and Extension Rings designed for use with the raceway systems
  - a. Extension boxes and/or rings not allowed on new work
- 4. Use flat head screws to fasten channel to surfaces
  - a. Option: Use suitable clips and straps
- 5. Use insulating bushings and inserts at connections to outlets and corner fittings
- 6. Maintain grounding continuity between raceway components
- 7. Preferred location: below the work surface or desk tops
- B. Surface Nonmetallic Raceways (use steel raceways U.O.N. – see above): Two-piece construction, manufactured of rigid PVC with texture and color selected by Owner from manufacturer's standard colors.
  - 1. Manufacturers:
    - a. Carlon.
    - b. IsoDuct.
    - c. Hubbell Incorporated; Wiring Device-Kellems Division.
    - d. Panduit Corp.
    - e. Walker Systems, Inc.; Wiremold Company (The).
    - f. Wiremold Company (The); Electrical Sales Division.

## **2.5 BOXES, ENCLOSURES, AND CABINETS**

- A. Sheet Metal Outlet and Device Boxes: NEMA OS 1
- B. Cast-Metal Outlet and Device Boxes: NEMA FB1, ferrous alloy, aluminum, Type FD, with gasketed cover.
- C. Outlet boxes shall be standard, stamped galvanized steel boxes, except as specified below of the proper size to accommodate the device and function for which intended. Boxes for wall devices, single or multiple gang boxes shall be properly sized to accept required devices, complete with plaster rings where required. Do not use Gangable type boxes for multi-gang applications.
- D. Boxes shall be of proper code size for the number of wires or conduits passing through or terminating therein, but in no case shall any box be less than 4" square by 2 1/8" deep. Boxes shall be furnished with proper covers or wall device plates. The box criterion applies to all systems, including but not limited to, fire, elevator and temperature controls.
- E. Boxes for mounting of surface lighting fixtures shall be 4" octagon boxes by 2 1/2" deep, with 1/2" no-bolt fixture studs.
- F. Wall boxes for exterior use shall be hot-dipped galvanized complete with weatherproof covers and rubber or neoprene gaskets.
- G. Outlet boxes in concrete ceiling slabs shall be two-piece concrete boxes not less than 4" nominal size with a minimum depth of 2 1/2". If used for lighting fixtures, outlet boxes shall be equipped with fixture stud.
- H. Surface mounted boxes shall be cast aluminum weatherproof, with grounding terminal, threaded hubs.
- I. Boxes exposed to weather shall be cast aluminum weatherproof, with grounding terminal, threaded hubs and gaskets.
- J. Boxes used in CMU and concrete construction shall be concrete rated type.
- K. Surface mounted boxes shall be surface raceway type, with grounding terminal. Manufactured by Wiremold or Carlon, to match surface raceway.
- L. Outlet boxes to be for installation in concrete floors on grade shall be cast iron with threaded conduit entrance, waterproof type with adjustable coverplate.
- M. Small Sheet Metal Pull and Junction Boxes: NEMA OS 1.

- N. Hinged-Cover Enclosures: NEMA 250, Type 1, with continuous-hinge cover with flush latch, unless otherwise indicated.
  - 1. Metal Enclosures: Steel, finished inside and out with manufacturer's standard enamel.
  - 2. Nonmetallic Enclosures: Plastic
- O. Cabinets:
  - 1. NEMA 250, Type 1, galvanized-steel box with removable interior panel and removable front, finished inside and out with manufacturer's standard enamel.
  - 2. Hinged door in front cover with flush latch and concealed hinge.
  - 3. Key latch to match panelboards.
  - 4. Metal barriers to separate wiring of different systems and voltage.
  - 5. Accessory feet where required for freestanding equipment.

## **2.6 SLEEVES FOR RACEWAYS**

- A. Sleeves: Refer to Specification Section 26 0500.

## **2.7 SLEEVE SEALS**

- A. Sleeve Seals: Refer to Specification Section 26 0500.

# **PART 3 - EXECUTION**

## **3.1 RESTRICTIONS**

- A. Attachment of conduit and tubing to any exterior part of the building envelope is prohibited without the approval of the Owner.
- B. Horizontal conduit runs within concrete slabs above grade are prohibited.
- C. Limit horizontal runs in concrete slabs to circuits feeding cast in place floor outlets only.
- D. Horizontal runs below concrete slabs are permitted. Minimum of 6" below bottom of concrete.

## **3.2 RACEWAY APPLICATION**

- A. Outdoors: Apply raceway products as specified below, unless otherwise indicated:
  - 1. Exposed Conduit: Rigid steel conduit.
  - 2. Concealed Conduit, Aboveground: EMT. Provide GRC conduit where exposed from zero inches to 4 feet AFG/AFF.
  - 3. Underground Conduit: RNC, Type EPC- 40 or 80-PVC, direct buried.
  - 4. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): LFMC.
  - 5. Boxes and Enclosures, Aboveground: NEMA 250, Type 3R.
  - 6. Application of Handholes and Boxes for Underground Wiring:
    - a. Handholes and Pull Boxes in Driveway, Parking Lot, and Off-Roadway Locations, Subject to Occasional, Nondeliberate Loading by Heavy Vehicles: Polymer concrete, SCTE 77, Tier 15 structural load rating.
    - b. Handholes and Pull Boxes in Sidewalk and Light-duty Pedestrian traffic with a Safety Factor for Nondeliberate Loading by Vehicles: Polymer-concrete units, SCTE 77, Tier 8 structural load rating.
- B. Comply with the following indoor applications, unless otherwise indicated:
  - 1. Exposed, Not Subject to Physical Damage: EMT.
  - 2. Exposed, Not Subject to Severe Physical Damage: EMT.
  - 3. Exposed and Subject to Severe Physical Damage: Rigid steel conduit. Includes raceways in the following locations:
    - a. Mechanical rooms: GRC to 8' AFF, EMT above 8'
    - b. Any room with exterior access and doors larger than 4' wide (Vehicular access): GRC to 8'-0" AFF, EMT above 8' AFF.
  - 4. Concealed in Ceilings and Interior Walls and Partitions: EMT.
  - 5. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): LFMC.
  - 6. Damp or Wet Locations: Rigid steel conduit or EMT with compression fittings.
  - 7. Raceways for Optical Fiber or Communications Cable: EMT

8. Boxes and Enclosures: NEMA 250, Type 1, except use NEMA 250, Type 3R, stainless steel in damp, corrosive or wet locations.
- C. Minimum Raceway Size: Accessories.
  1. Conduit Rack: Steel channel with conduit straps or clamps; Oversize by 25%.
  2. Size conduit for Type THW, per N.E.C. or per plans, whichever is larger.
  3. 1/2 inch minimum except flexible fixture whips which may be 3/8 inch.
  4. Home runs to switchboards and panels: 3/4 inch minimum.
- D. Raceway Fittings: Compatible with raceways and suitable for use and location.
  1. Rigid and Intermediate Steel Conduit: Use threaded rigid steel conduit fittings, unless otherwise indicated.
  2. PVC Externally Coated, Rigid Steel Conduits: Use only fittings listed for use with that material. Patch and seal all joints, nicks, and scrapes in PVC coating after installing conduits and fittings. Use sealant recommended by fitting manufacturer.
  3. Electrical Metallic Tubing and Fittings
    - a. EMT: ANSI C80.3 Galvanized tubing
    - b. Fittings: ANSI/NEMA FB 1: High quality, insulated throat, steel set screw.
      - 1) Die cast fittings are prohibited
      - 2) High quality compression is required on surface work in kitchens, greenhouses, and other areas where waterproof fittings are required by NEC.
      - 3) Conduit Bodies: Steel or malleable iron
        - a) PVC is prohibited
- E. Do not install aluminum conduits.
- F. PVC conduit not allowed in any above-grade installation.
- G. MC (Metal Clad), AC (Armor Clad), NM (Romex) or ENT: Not allowed on this project (except MC allowed for 6 foot light fixture whips furnished with recessed light fixtures).

### 3.3 INSTALLATION

- A. Comply with NECA 1 for installation requirements applicable to products specified in Part 2 except where requirements on Drawings or in this Article are stricter.
- B. Install horizontal raceway runs above water and steam piping.
- C. Complete raceway installation before starting conductor installation.
- D. Support raceways as specified in Division 26 Section "Hangers and Supports for Electrical Systems."
  1. Support conduit runs overhead by threaded rod or directly to building surface, use of ceiling wires not acceptable.
- E. Arrange stub-ups so curved portions of bends are not visible above the finished slab.
- F. Install no more than the equivalent of three 90-degree bends in any conduit run except for communications conduits, for which fewer bends are allowed.
- G. Conceal conduit and EMT within finished walls, ceilings, and floors, unless otherwise indicated. All boxes shall be flush mounted unless otherwise indicated. Exposed conduit or surface mounted boxes must be approved by Owner prior to any rough-in.
- H. Maintain 6 inch minimum clearance between conduit and mechanical piping.
- I. Raceways Embedded in Slabs:
  1. Run conduit larger than 1-inch trade size, parallel or at right angles to main reinforcement. Where at right angles to reinforcement, place conduit close to slab support.
  2. Arrange raceways to cross building expansion joints at right angles with expansion fittings.
  3. Change from PVC to rigid steel conduit, PVC coated rigid steel before rising above the floor and extend 3" (min.) AFF (indoors) 6" AFG (outdoors).

4. Conduit shall be installed below slab whenever possible such that cutting of the slab will not damage conduits.
  5. Conduits 1" and larger in slab must be coordinated and approved by Structural Engineer.
- J. Threaded Conduit Joints, Exposed to Wet, Damp, Corrosive, or Outdoor Conditions: Apply listed compound to threads of raceway and fittings before making up joints. Follow compound manufacturer's written instructions.
- K. Raceway Terminations: Use insulating bushings to protect conductors, all sizes of conduits.
- L. Ground bushings are required on all feeders (includes conduits entering/exiting pullboxes and J-boxes) transformers, motors. Use Provide conduit grounding bushings at all ends for feeders, transformers, motors, motor controls, TVSS, SPD's and VFD's.
- M. Install pull wires in empty raceways. Use polypropylene or monofilament plastic line with not less than 200-lb tensile strength. Leave at least 12 inches of slack at each end of pull wire.
- N. Raceways for Optical Fiber and Communications Cable: Install raceways, metallic and nonmetallic, rigid and flexible, as follows:
1. 3/4-Inch Trade Size and Smaller: Install raceways in maximum lengths of 50 feet.
  2. 1-Inch Trade Size and Larger: Install raceways in maximum lengths of 75 feet.
  3. Install with a maximum of two 90-degree bends or equivalent for each length of raceway unless Drawings show stricter requirements. Separate lengths with pull or junction boxes or terminations at distribution frames or cabinets where necessary to comply with these requirements.
  4. Conduit runs less than 100 feet from point-to-point shall not contain more than two 90° standard factory bends, or three 90°, 24 inch radius bends.
  5. Conduit runs exceeding 100 feet from point-to-point or exceeding two 90° - 24" radius bends shall contain accessible pull boxes.
- O. Install raceway sealing fittings at suitable, approved, and accessible locations and fill them with listed sealing compound. For concealed raceways, install each fitting in a flush steel box with a blank cover plate having a finish similar to that of adjacent plates or surfaces. Install raceway sealing fittings at the following points:
1. Where conduits pass from warm to cold locations, such as boundaries of refrigerated spaces.
  2. Where otherwise required by NFPA 70.
  3. Install fitting(s) that provide expansion and contraction for at least 0.00041 inch per foot of length of straight run per deg F of temperature change.
  4. Install each expansion-joint fitting with position, mounting, and piston setting selected according to manufacturer's written instructions for conditions at specific location at the time of installation.
- P. Flexible Conduit Liquid Tight Connections: Use maximum of 36 inches of flexible conduit for recessed and semi-recessed lighting fixtures, equipment subject to vibration, noise transmission, or movement; and for transformers and motors.
1. Use LFMC in dry, damp or wet locations.
  2. Use FMC only in plenum spaces, where LFMC is prohibited.
- Q. Outlet Boxes shall be installed as following:
1. Do not install boxes back-to-back in walls.
    - a. Provide minimum 6 inch separation; 24 inch separation in acoustic or fire-rated walls.
  2. Locate boxes in masonry walls to require cutting of masonry unit corner only.
  3. Provide knockout closures for unused openings.
  4. Support boxes independently of conduit except for cast boxes that are connected to two rigid metal conduits, both supported within 12 inches of box.
  5. Use multiple-gang boxes where more than one device is mounted together; do not use sectional boxes.
  6. Provide barriers to separate wiring of different voltage systems.
  7. Provide recessed outlet boxes in finished areas; secure boxes to interior wall and partition studs, accurately positioning to allow for surface finish thickness. Use stamped



- steel stud bridges for flush outlets in hollow stud walls, and adjustable steel channel fasteners for flush ceiling outlet boxes.
- 8. Provide cast outlet boxes in exterior locations exposed to the weather and wet interior locations.
- 9. Exposed boxes in kitchens, exterior locations:
  - a. Provide bell type boxes with threaded openings.
- 10. Use insulating bushings and inserts at connections to outlets and corner fittings.
- R. Set floor boxes level and flush with finished floor.
- S. Roof penetrations are prohibited unless coordinated and detailed in strict compliance with Division 07. Where permitted the following applies:
  - 1. Roof-Penetration Sleeves: Seal penetration of individual raceways with flexible, boot-type flashing units applied in coordination with roofing work.
- T. Special Installation Techniques
  - 1. Bring conduit to the shoulder of fittings and couplings.
  - 2. Fasten securely.
  - 3. In damp or wet locations, use conduit hubs or sealing locknuts for fastening conduit to cast boxes and to fasten conduit to sheet metal boxes.
  - 4. Use conduit bodies to make sharp changes in direction, as around beams.
  - 5. Use hydraulic one shot conduit bender or factory elbows for bends in conduit larger than 2 inch size.
  - 6. Avoid moisture traps. Where unavoidable, provide junction box with drain fitting at conduit low point.
  - 7. Use suitable conduit caps to protect installed conduit against entrance of dirt and moisture.
  - 8. Use PVC coated rigid steel factory elbows.
    - a. For bends in plastic conduit runs longer than 100 feet.
    - b. In plastic conduit runs which have more than 2 bends, regardless of length.
    - c. For risers when transitioned from below finished grade to above finished grade.

### **3.4 SLEEVE INSTALLATION FOR ELECTRICAL PENETRATIONS**

- A. Sleeve Installation for Electrical Penetrations: Refer to Specification Section 26 0500.

### **3.5 SLEEVE-SEAL INSTALLATION**

- A. Sleeve-Seal Installation: Refer to Specification Section 26 0500.

### **3.6 FIRESTOPPING**

- A. Firestopping: Refer to Specification Section 26 0500.
- B. Back to back outlets in the same wall or "thru wall" type boxes are not permitted. Provide 6" (minimum) offset on all outlets shown on opposite sides of a common wall to minimize sound transmission. Caulk and seal all conduit openings, holes in boxes, and caulk between box and wall. Provide 24" minimum separation in acoustic or fire rated walls.

### **3.7 PROTECTION**

- A. Provide final protection and maintain conditions that ensure coatings, finishes, and cabinets are without damage or deterioration at time of Substantial Completion.
  - 1. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.
  - 2. Repair damage to PVC or paint finishes with matching touchup coating recommended by manufacturer.

### **3.8 STACKED J-BOXES/EXTENSION RINGS**

- A. J-boxes shall not be stacked atop or make use of multiple extension rings on each other to form single J-boxes. Single J-boxes shall be used of proper size per NEC.

- B. Stack boxes or extension rings are not approved for new work. Limit one (1) for remodel work.

**END OF SECTION**

## SECTION 26 27 26

### WIRING DEVICES

#### PART 1 - GENERAL

##### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. In the absence of other information, the following standards apply:
  - 1. NEMA WD 1 – General-Purpose Wiring Devices
  - 2. NEMA WD 2 – Semiconductor Dimmers for Incandescent Lamps
  - 3. NEMA WD 5 – Specific-Purpose Wiring Devices

##### 1.2 SUMMARY

- A. This Section includes the following:
  - 1. Receptacles, receptacles with integral GFCI, and associated device plates.
  - 2. Twist-locking receptacles.
  - 3. Receptacles with integral surge suppression units.
  - 4. Wall-box motion sensors.
  - 5. Snap switches and wall-box dimmers.
  - 6. Pendant cord-connector devices.
  - 7. Cord and plug sets.
  - 8. Floor service outlets, poke-through assemblies, service poles, and multi-outlet assemblies.

##### 1.3 DEFINITIONS

- A. EMI: Electromagnetic interference.
- B. GFCI: Ground-fault circuit interrupter.
- C. Pigtail: Short lead used to connect a device to a branch-circuit conductor.
- D. RFI: Radio-frequency interference.
- E. SPD: Surge Suppressing Device.
- F. UTP: Unshielded twisted pair.

##### 1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.
  - 1. Include configurations, finishes, and dimensions.
- B. Shop Drawings: List of legends and description of materials and process used for premarking wall plates.
- C. Samples: One for each type of device and wall plate specified, in each color specified.
- D. Field quality-control test reports.
- E. Operation and Maintenance Data: For wiring devices to include in all manufacturers' packing label warnings and instruction manuals that include labeling conditions.

##### 1.5 QUALITY ASSURANCE

- A. Source Limitations: Obtain each type of wiring device and associated wall plate through one source from a single manufacturer. Insofar as they are available, obtain all wiring devices and associated wall plates from a single manufacturer and one source.
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- C. Comply with NFPA 70.

## **1.6 COORDINATION**

- A. Receptacles for Owner-Furnished Equipment: Match plugs configurations.
  - 1. Cord and Plug Sets: Match equipment requirements.
- B. Coordinate wiring connections, cords and caps with:
  - 1. Division 01 – Owner supplied products.
  - 2. Division 10 – Signage
  - 3. Division 11 – Food Service Equipment
  - 4. Division 22 – Common Motor Requirements for Plumbing Equipment
  - 5. Division 23 – Common Motor Requirements for HVAC Equipment
  - 6. Division 27 – Voice Communications Switching and Routing Equipment.
- C. Prior to beginning work obtain the HVAC Equipment Schedule from Division 23 to determine the related electrical data required to wire each equipment item.
- D. Refer to Coordination Schedule in Division 01 for additional information on Mechanical/Electrical coordination.

## **PART 2 - PRODUCTS**

### **2.1 MANUFACTURERS**

- A. The following work in this Section is restricted to specific manufacturers.
  - 1. Wall Switches
    - a. Pass & Seymour
    - b. Cooper Wiring Devices
    - c. Hubbell
    - d. Leviton
  - 2. Receptacles
    - a. Pass & Seymour
    - b. Cooper Wiring Devices
    - c. Hubbell (Bryant)
    - d. Leviton
  - 3. Wall Plates
    - a. Pass & Seymour
    - b. Hubbell (Bryant)
  - 4. Wall Dimmers:
    - a. Pass & Seymour "Titan" Series
    - b. Lutron "Nova" Series
    - c. Lightolier
  - 5. Floor Mounted Service Fittings
    - a. The Wiremold Company
  - 6. Cord Drops
    - a. Daniel Woodhead
  - 7. Provide samples of items to Owner prior to purchase.

### **2.2 WIRING DEVICES**

- A. Comply with NEMA Standard WD 1, "General Purpose Wiring Devices".
- B. Enclosures: NEMA 1 equivalent, except as otherwise indicated.
- C. Color: Per Owner or required by Code.
- D. Receptacles:
  - 1. Duplex, single, and special receptacles shall be UL listed and have a metal mounting strap with self-grounding and a hex head green grounding screw; 20 AMP, federal specification grade (896), nylon, flat (smooth) faced.
  - 2. Convenience and Straight Blade Receptacles: NEMA WD 1 (Pass & Seymour CRB5362 Hubbell CR-5352 or Owner approved equal).
  - 3. Locking Blade Receptacles: NEMA WD 5.
  - 4. Convenience Receptacle Configuration: NEMA WD 1, Type 5-20-R, nylon face.

- a. Prewired pigtail connectors that accommodate Fed Spec receptacles and GFCI's are approved. Must be crimped and welded terminal right angle application within the connector.
  - b. For areas designated as critical or patient care the receptacles shall be hospital grade as indicated by U.L. green dot marking.
- 5. All receptacles connected to emergency circuits shall be factory labeled "Emergency" or "Standby Power": Coverplate, depending on transfer switch connection indicated on one-line diagram.
- 6. Specific use Receptacle configuration: NEMA WD 1 or WD 5, Black plastic face.
- 7. Ground Fault Circuit Interrupter (GFCI) Receptacles: UL Standard 943 "Ground Fault Circuit Interrupters", feed through type, with integral ground fault circuit interrupter arranged to protect connected downstream receptacles on the same circuit. Design units for installation in a 2-3/4 inch (70 mm) deep outlet without an adapter. (Pass & Seymour 2095 or Owner approved equal).
  - a. GFCI Receptacles shall meet 2006 revisions to the UL standard 943.
  - b. GFCI Receptacle shall have SafeLock™ protection. If critical components are damaged and ground fault protection is lost or if miswired, power to receptacle is disconnected.
- 8. Isolated Ground Receptacles: Duplex receptacle with metal strap for self-grounding and green hex-head source for isolated ground, Orange face. (Pass & Seymour IG5362 or Owner approved equal).
- 9. Child guard shutter type required at clinic, preschool, kindergarten, and special education areas in accordance with NEC 517.18 (C). (Pass & Seymour TR63 or Owner approved equal).
- E. Pendant Cord/Connector Devices: Matching, locking type, plug and connector body of the types and ratings as indicated on the contract drawings.
- F. Bodies: Nylon with screw open cable gripping jaws and provision for attaching external cable grip.
  - 1. Weatherproofing: Molded black elastomer cover for plug and connector. Covers shall interlock to provide a weatherproof cover around the mated plug and connector.
  - 2. External Cable Grip: Woven wire mesh type made of high strength galvanized steel wire strand and matched to cable diameter and with attachment provision designed for the corresponding connector.
- G. Cord and Plug Sets: Match voltage and current ratings and number of conductors to requirements of the equipment being connected.
  - 1. Cord: Rubber insulated, stranded copper conductors, with type SOW-A jacket. Grounding conductor has green insulation.
  - 2. Plug: Male configuration with nylon body and integral cable clamping jaws. Match to cord and to receptacle type intended for connection.
- H. Snap Switches
  - 1. For Lighting Circuits and single phase motor loads under 1/2 hp.
    - a. NEMA WD1, AC quiet type, nylon, Federal specification grade (WC596), UL listed with toggle handle, rated 20 amperes at 120/277 volts AC.
    - b. Mounting straps: Metal and offer self grounding or be equipped with a green hex head ground screw.
    - c. Handle: Nylon
  - 2. Pilot Light Type: Lighted handle
  - 3. Locator Type: Lighted handle
    - a. Screw connections only; Quick push-in wire connectors are prohibited.
  - 4. Approved Grounding Type (or Owner approved equal):
    - a. Basis of Design:
      - 1) Single pole, 20A, Hubbel No. CS-1221I, P&S No. PS20AC1
      - 2) Three-way, 20A Hubbell No. CS-1223-I, P&S No. PS20AC3
      - 3) Single pole, 20A keyed P & S No. PS20AC1-KL, P&S No. PS20AC1L
      - 4) Three-way, 20A, keyed P & S No. PS20AC4-KL, P&S No. PS20AC1L

- I. Combination Switch and Receptacle: Both individual devices in individual gang units with plaster ears.
  - 1. Switch: 20 ampere, 120/277 VAC.
  - 2. Receptacle: NEMA configuration 5-20R.
- J. Wall Plates: Single and combination type plates shall match corresponding wiring devices. Features include the following: Engrave where indicated on drawings.
  - 1. Plate Securing Screws: Metal with heads colored to match plate finish.
  - 2. Material for Finished Spaces: Nylon, finish.
  - 3. Restroom and Kitchen/Kitchenette areas stainless steel 302.
  - 4. Weatherproof Cover Plate: Gasketed cast metal with hinged gasketed device covers.

## **2.3 MULTI OUTLET ASSEMBLIES**

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. Hubbell Incorporated; Wiring Devices – Kellems.
  - 2. The Wiremold Company.
- B. Comply with Standard UL5, "Surface Metal Raceways and Fittings".
- C. Components of Assemblies: Products of a single manufacturer designed to be used together to provide a complete matching assembly of raceways and receptacles.
- D. Raceway material: Metal, with manufacturer's standard corrosion-resistant finish.
- E. Wire: No. 12 AWG.

## **2.4 PENDANT CORD-CONNECTOR DEVICES**

- A. Description: Matching, locking-type plug and receptacle body connector; NEMA WD 5 configurations L5-20P and L5-20R, heavy-duty grade.
  - 1. Body: Nylon with screw-open cable-gripping jaws and provision for attaching external cable grip.
  - 2. External Cable Grip: Woven wire-mesh type made of high-strength galvanized-steel wire strand, matched to cable diameter, and with attachment provision designed for corresponding connector.
  - 3. Non-metallic Daniel Woodhead box and strain relief required.

## **2.5 CORD AND PLUG SETS**

- A. Description: Match voltage and current ratings and number of conductors to requirements of equipment being connected.
  - 1. Cord: Stranded-copper conductors, with green-insulated grounding conductor.
    - a. Oil-resistant thermostat insulated type SJ, SJO or SO multiconductor flexible cord with identified equipment grounding conductor, suitable for extra hard usage in damp locations.
    - b. Size cord for equipment-rating ampacity plus a minimum of 30 percent or for size of branch circuit overcurrent protection, whichever is greater
  - 2. Plug: Nylon body and integral cable-clamping jaws. Match cord and receptacle type for connection.
    - a. Straight-blade Attachments Plug: NEMA WD 1.
    - b. Locking-blade Attachment Plug: NEMA WD 5.
  - 3. Use wire and cable with insulation suitable for temperatures encountered in heat-producing equipment.
  - 4. Install pre-finished cord set where connection with attachment plug is indicated or specified, or use attachment plug with suitable strain-relief clamps.
  - 5. Provide suitable strain-relief clamps for cord connections to outlet boxes and equipment connection boxes.
  - 6. Make wiring connections in control panel or in wiring compartment of pre-wired equipment in accordance with manufacturer's instructions. Provide interconnecting wiring.

## **PART 3 - EXECUTION**

### **3.1 INSTALLATION**

- A. Comply with NECA 1, including the mounting heights listed in that standard, unless otherwise noted.
- B. Coordination with Other Trades:
  - 1. Take steps to insure that devices and their boxes are protected. Do not place wall finish materials over device boxes and do not cut holes for boxes with routers that are guided by riding against outside of the boxes.
  - 2. Keep outlet boxes free of plaster, drywall joint compound, mortar, cement, concrete, dust, paint, and other material that may contaminate the raceway system, conductors, and cables.
  - 3. Install device boxes in brick or block walls so that the cover plate does not cross a joint unless the joint is troweled flush with the face of the wall.
  - 4. Install wiring devices after all wall preparation, including painting, is complete.
- C. Conductors:
  - 1. Do not strip insulation from conductors until just before they are spliced or terminated on devices.
  - 2. Strip insulation evenly around the conductor using tools designed for the purpose. Avoid scoring or nicking of solid wire or cutting strands from stranded wire.
  - 3. The length of free conductors at outlets for devices shall meet provisions of NFPA 70, Article 300, without pigtails.
  - 4. Existing Conductors:
    - a. Cut back and pigtail, or replace all damaged conductors.
    - b. Straighten conductors that remain and remove corrosion and foreign matter.
    - c. Pigtailling existing conductors is permitted provided the outlet box is large enough.
- D. Device Installation:
  - 1. Replace all devices that have been in temporary use during construction or that show signs that they were installed before building finishing operations were complete.
  - 2. Keep each wiring device in its package or otherwise protected until it is time to connect conductors.
  - 3. Do not remove surface protection, such as plastic film and smudge covers, until the last possible moment.
  - 4. Connect devices to branch circuits using pigtails that are not less than 6 inches in length.
  - 5. When there is a choice, use side wiring with binding-head screw terminals. Wrap solid conductor tightly clockwise, 2/3 to 3/4 of the way around terminal screw.
  - 6. Use a torque screwdriver when a torque is recommended or required by the manufacturer.
  - 7. When conductors larger than No. 12 AWG are installed on 15- or 20-A circuits, splice No. 12 AWG pigtails for device connections.
  - 8. Tighten unused terminal screws on the device.
  - 9. When mounting into metal boxes, remove the fiber or plastic washers used to hold device mounting screws in yokes, allowing metal-to-metal contact.
- E. Receptacles:
  - 1. Install convenience receptacles with grounding pole on top or to the left where installed horizontally. Grounding pole position shall be consistent throughout.
  - 2. No receptacle shall be located within two horizontal feet of a sink or lavatory.
    - a. Provide GFCI protection within six horizontal feet of sink or lavatory.
  - 3. Wire receptacles using pigtails for easy future service.
- F. Plates
  - 1. Install high quality nylon, device plates on switches and receptacles in finished areas, using jumbo size plates for outlets installed in masonry walls.
  - 2. Install galvanized steel plates on outlet boxes and junction boxes in unfinished areas, above accessible ceilings, and on surface mounted outlets.

- 3. Stainless steel 302 in Kitchen/Dishwashing, Restrooms and Locker rooms area.
- G. Arrangement of Devices: Unless otherwise indicated, mount flush, with long dimension vertical, with grounding terminal of the receptacle on top or with off of the switch position down. Group adjacent switches under single, multigang wall plates.
- H. Adjust locations of floor service outlets and service poles to suit arrangement of partitions and furnishings.
- I. Drill opening for poke-through fitting installation in accordance with manufacturer's instructions.
- J. De-rate ganged dimmer switches per manufacturer.

### **3.2 IDENTIFICATION**

- A. Comply with Division 26 Section "Identification for Electrical Systems."
- B. All switches and receptacles should be marked with black on clear, high quality, adhesive material, on front side. The markers should have printed lettering with panel and circuit information. Label inside of cover, use permanent ink that won't bleed through cover back of plate. Include panel and circuit ID.
- C. Switches: Where 3 or more switches are ganged, and elsewhere where indicated, identify each switch with approved legend engraved on wall plate.

### **3.3 FIELD QUALITY CONTROL**

- A. Perform tests and inspections and prepare test reports.
  - 1. Test Instruments: Use instruments that comply with UL 1436.
  - 2. Test Instrument for Convenience Receptacles: Digital wiring analyzer with digital readout or illuminated LED indicators of measurement.
- B. Tests for Convenience Receptacles:
  - 1. Line Voltage: Acceptable range is 116 to 124 V.
  - 2. Ground Impedance: Values of up to 2 ohms are acceptable.
  - 3. GFCI Trip: Test for tripping values specified in UL 1436 and UL 943.
  - 4. Using the test plug, verify that the device and its outlet box are securely mounted.
  - 5. The tests shall be diagnostic, indicating damaged conductors, high resistance at the circuit breaker, poor connections, inadequate fault current path, defective devices, or similar problems. Correct circuit conditions, remove malfunctioning units and replace with new ones, and retest as specified above.

**END OF SECTION**



## SECTION 26 51 00

### INTERIOR LIGHTING

#### PART 1 - GENERAL

##### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

##### 1.2 SUMMARY

- A. This Section includes the following:
  - 1. Interior lighting fixtures.
  - 2. Lighting fixture supports.

##### 1.3 DEFINITIONS

- A. BF: Ballast factor.
- B. CRI: Color-rendering index.
- C. CU: Coefficient of utilization.
- D. HID: High-intensity discharge.
- E. LER: Luminaire efficacy rating.
- F. Luminaire: Complete lighting fixture, including ballast housing if provided.
- G. RCR: Room cavity ratio.

##### 1.4 SUBMITTALS

- A. Product Data: For each type of lighting fixture, arranged in order of fixture designation. Include data on features, accessories, finishes, and the following:
  - 1. Physical description of lighting fixture including dimensions.
  - 2. Emergency lighting units.
  - 3. Ballast.
  - 4. Energy-efficiency data.
- B. Shop Drawings: Show details of nonstandard or custom lighting fixtures. Indicate dimensions, weights, methods of field assembly, components, features, and accessories.
  - 1. Include outline drawings, lamp and ballast data, replacement lamp costs, photometric study, support points, weights and accessory information for each luminaire type.
- C. Samples for Verification: Interior lighting fixtures which are substitutions for specified fixtures shall provide a sample and complete photometric review of application for approval. Each sample shall include the following:
  - 1. Lamps: Specified units installed.
  - 2. Accessories: Cords and plugs.
- D. Product Certificates: For each type of ballast for bi-level and dimmer-controlled fixtures, signed by product manufacturer.
- E. Operation and Maintenance Data: For lighting equipment and fixtures to include in emergency, operation, and maintenance manuals.
- F. Warranties: Special warranties specified in this Section.

##### 1.5 QUALITY ASSURANCE

- A. Luminaire Photometric Data Testing Laboratory Qualifications: Provided by manufacturers' laboratories that are accredited under the National Volunteer Laboratory Accreditation Program for Energy Efficient Lighting Products.
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- C. Comply with NFPA 70.

## **1.6 COORDINATION**

- A. Coordinate layout and installation of lighting fixtures and suspension system with other construction that penetrates ceilings or is supported by them, including HVAC equipment, fire-suppression system, and partition assemblies.

## **1.7 EXTRA MATERIALS**

- A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
  - 1. Provide 1 spare fixture of each type for owner stock.

# **PART 2 - PRODUCTS**

## **2.1 MANUFACTURERS**

- A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:
  - 1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work are restricted to manufacturers specified.
  - 2. Manufacturers: Restricted to specific manufacturers that have been previously approved by the Owner.
  - 3. Basis-of-Design Product: The design for each lighting fixture is based on the product named.

## **2.2 LIGHTING FIXTURES AND COMPONENTS, GENERAL REQUIREMENTS**

- A. Metal Parts: Free of burrs and sharp corners and edges.
- B. Sheet Metal Components: Steel, unless otherwise indicated. Form and support to prevent warping and sagging.
- C. Doors, Frames, and Other Internal Access: Smooth operating, free of light leakage under operating conditions, and designed to permit relamping without use of tools. Designed to prevent doors, frames, lenses, diffusers, and other components from falling accidentally during relamping and when secured in operating position.
- D. Reflecting surfaces shall have minimum reflectance as follows, unless otherwise indicated:
  - 1. White Surfaces: 85 percent.
  - 2. Specular Surfaces: 83 percent.
  - 3. Diffusing Specular Surfaces: 75 percent.
  - 4. Laminated Silver Metalized Film: 90 percent.
- E. Plastic Diffusers, Covers, and Globes:
  - 1. Acrylic Lighting Diffusers: 100 percent virgin acrylic plastic. High resistance to yellowing and other changes due to aging, exposure to heat, and UV radiation.
    - a. Lens Thickness: At least 0.125 inch minimum unless different thickness is indicated.
    - b. UV stabilized.
  - 2. Glass: Annealed crystal glass, unless otherwise indicated.
- F. Fixtures must be approved and tested for use in a corrosive (swimming pool) environment.
- G. Locate luminaires for easy service; i.e. stairways, common areas.
- H. Available Manufacturers:
  - 1. Only manufacturers listed in the fixture schedule are acceptable.

# **PART 3 - EXECUTION**

## **3.1 INSTALLATION**

- A. Pendant or surface mounted fixtures shall be provided with required mounting devices and accessories and shall include hickey, stud extensions, ball-aligners, canopies and stems to

mount fixture to structure. Mounting stems of pendant fixtures shall be of correct length to uniformly maintain fixture heights shown. Allowable variations in tolerance of mounting heights between any stem and surface mounted fixture shall not exceed 1/4" and shall not vary more than 1/2" from floor mounting height shown. Brace pendants four feet or longer to limit swinging. Provide safety chain or cable between the ballast/structure and / or fixture/structure.

- B. Align luminaires and clean lenses and diffusers of paint splatters, dirt and debris.

### **3.3 SPARE PARTS**

- A. Provide 1 spare fixture for each type specified for owner stock.

### **3.4 FIELD QUALITY CONTROL**

- A. Test for Emergency Lighting: Interrupt power supply to demonstrate proper operation. Verify transfer from normal power to battery and retransfer to normal.
- B. Prepare a written report of tests, inspections, observations, and verifications indicating and interpreting results. If adjustments are made to lighting system, retest to demonstrate compliance with standards.

**END OF SECTION**