

**BID FOR
TMWRF ALARM UPGRADE**

BID # 22/23-010

PWP # WA-2023-078

BIDS DUE NOT LATER THAN: 1:45 PM ON NOVEMBER 10, 2022

PUBLIC BID OPENING: 2:00 PM ON NOVEMBER 10, 2022

[NOTE: TIME BIDS ARE DUE IS DIFFERENT FROM BID OPENING TIME]



431 PRATER WAY
P.O. BOX 857
SPARKS, NV 89432-0857

Company Name: _____

**CITY OF SPARKS
NOTICE TO BIDDERS
TMWRF ALARM UPGRADE
BID # 22/23-010 / PWP # WA-2023-078**

NOTICE IS HEREBY GIVEN that the City of Sparks, Nevada, will receive written sealed bids only, for the project listed above. Said bids must be in the hands of the Contracts and Risk Manager at 431 Prater Way, Sparks, Nevada, **NO LATER THAN 1:45 PM ON NOVEMBER 10, 2022**. Bids postmarked prior to, but not received until after this deadline will not be accepted. Vendor bid response submittals may not be sent to the City of Sparks via the Internet/e-mail and will not be entertained for award by the City of Sparks. The right is reserved to reject any Bid/Proposal or to accept the Bid/Proposal which is deemed by the City of Sparks to be in the best interest of the City of Sparks. The City of Sparks reserves the right to waive any irregularities and/or informalities in the bid process.

All Bids are to be marked clearly on the outside. Due to hybrid schedules and staff reductions, in-person staff availability is limited. Bidders wishing to physically deliver their bids on the bid due date shall note that the Purchasing Office will receive bids in the lobby of City Hall beginning at 1PM on November 10th. Bids are due no later than 1:45PM. Bids may also be delivered to the Purchasing Department physical dropbox/mailbox, also located in the lobby of City Hall.

Bids will be opened and publicly read at **2:00 PM ON NOVEMBER 10, 2022** via Zoom video/audio conferencing. Meeting # 835 2471 3523. Meeting Passcode: 414005 with a direct link of: <https://us02web.zoom.us/j/83524713523?pwd=ZE5VS2dXa0xrldoblp5YnEyanpCZz09>

PROJECT DESCRIPTION: Upgrade the existing alarm system at the Truckee Meadows Water Reclamation Facility (TMWRF) and includes but is not limited to, removal of the old Alarm system and associated wiring, Installing new wiring, conduit and alarms per the bid specifications.

PRE-BID MEETING: There will be a **NON-MANDATORY** pre-bid meeting held at 10AM on November 2, 2022 at the job site: 8500 Cleanwater Way, Reno, NV 89502.

BONDING/LICENSING: A Bid Bond in the amount of 5% of bid amount is required. This bid bond will function as a penalty in the event the successful bidder fails to enter into a written contract with the City in accordance with the bid documents. Additionally, the City will be entitled to actual damages, if any. Prospective bidders will be required to have a current Contractor's License under the Nevada State Law for the type of work specified herein.

The work to be performed under this Contract shall be commenced by the successful Bidder after all executed Contract documents have been submitted, and after being notified to proceed by the City of Sparks.

Bid documents and specifications may be obtained from the City of Sparks website. Please visit <http://portal.cityofsparks.us/bids> to obtain complete bid documents. There is no cost to use the system or obtain plans, but registration at the site is required. It is the responsibility of all potential bidders/responders to monitor the Purchasing Division's website for any changing information prior to submitting their bid/proposal. The City of Sparks will not be responsible for the timeliness or completeness of information provided by any 3rd party bid listing or re-selling service. For further information, contact the Purchasing Division at dmarran@cityofsparks.us or at (775) 353-2273. The individual responsible for coordinating this bid is: Dan Marran, CPPO, C.P.M. – Contracts and Risk Manager

Reno Gazette Journal Legal Notices Section
Publish Date: October 26, 2022
Proof of publication required

Bidder's Checklist

Bidders are instructed to complete and return the following forms in order for their bids to be complete. Failure to return the following items may result in your bid being declared “non-responsive.”

1. _____ Bid Item Schedule
2. _____ Bidder Information Sheets
3. _____ Subcontractor Information Form (5% list due with bid submittal)
4. _____ Acknowledgement and Execution Form
5. _____ Certification Regarding Debarment
6. _____ “Certificate of Eligibility” (Local Preference) - If bid exceeds \$250,000 and Contractor wishes to potentially apply their preference.
7. _____ Bid Bond
8. _____ Signed Bid Addenda (if applicable)

**CITY OF SPARKS
 TMWRF ALARM UPGRADE
 BID #22/23-010
 PWP #WA-2023-078**

PRICES must be valid for 90 calendar days after the bid opening.

COMPLETION of this project is expected **PURSUANT TO CONTRACT DOCUMENTS.**

BIDDER acknowledges receipt of _____ Addenda.

 Bidder Name

 (signature)

BID ITEM SCHEDULE:

BASE BID SCHEDULE					
Item No.	Quantity	Unit	Description	Unit Price	Total Price
1	1	LS	Upgrade and replacement of the alarm system, which includes demolition and removal of the old alarm system and installation of the new alarm system as indicated in the bid specifications and plans.	\$ _____ /LS	\$ _____
2	1	FA	Force Account	\$50,000.00	\$ 50,000.00
TOTAL BASE BID					\$ _____

(Written amount TOTAL BASE BID): \$ _____

Bid Schedule Notes:

1. City of Sparks reserves the right and privilege to accept or reject any or all bids or parts thereof, based solely on the judgment of representatives of the City of Sparks.
2. See Bid Item Clarifications.
3. Total base bid shall include the total of items 1 and 2.

Bidder Information

COMPANY INFORMATION:

Company Name:
Contact Name:
Address:
City:
State / Zip Code:
Telephone Number including area code:
Fax Number including area code:
E-mail:

COMPANY BACKGROUND

- 1) Has your company ever failed to complete any contracts awarded to it? No ___ Yes ___ (If yes, please provide details.)

- 2) Has your company filed any arbitration request or law suits on contracts awarded within the last five years? No ___ Yes ___ (If yes, please provide details.)

- 3) Does your company now have any legal suits or arbitration claims pending or outstanding against it or any officers relating to the performance of a public contract? No ___ Yes ___ (If yes, please provide details.)

- 4) Does your company now employ any officers or principals who were with another firm when that company failed to complete a contract within the last five years? No ___ Yes ___ (If yes, please provide details.)

- 5) Has your company had a contract partially or completely terminated for default (cause) within the past five years? No ___ Yes ___ (If yes, please provide details.)

- 6) Has your company been found non-responsible on a government bid within the last five years? No ___ Yes ___ (If yes, please provide details.)

Bidder Information

CONTRACTOR LICENSE INFORMATION:

Nevada State Contractor's License Number (If Applicable):
License Classification(s):
Limitation(s) of License:
Date Issued:
Date of Expiration:
Name of Licensee:
City, State, Zip Code of Licensee:
Telephone Number of Licensee:

BUSINESS LICENSING INFORMATION All vendors doing business within the City of Sparks are required to obtain and maintain a current business license from the City of Sparks prior to commencement of work (Sparks Municipal Code Section 5.08.020A). Vendor(s) awarded a contract resulting from this bid shall be required to obtain a current business license if they do not already hold one.

City of Sparks Business License Number:
Date Issued:
Date of Expiration:
Name of Licensee:
City, State, Zip Code of Licensee:
Telephone Number of Licensee:
Taxpayer Identification Number:

Bidder Information

DISCLOSURE OF PRINCIPALS:

a) Individual and/or Partnership:

Owner 1) Name:
Address:
City, State, Zip Code:
Telephone Number:
Owner 2) Name:
Address:
City, State, Zip Code:
Telephone Number:
Other 1) Title:
Name
Other 2) Title:
Name:

b) Corporation:

State in which Company is Incorporated:
Date Incorporated:
Name of Corporation:
Address
City, State, Zip Code:
Telephone Number:
President's Name:
Vice-President's Name:
Other 1) Name:
Title:

Awarded Contract Information

If your company is determined to be the awardee of the contract for this scope of work, the contract form for the work will be routed via electronic means. Therefore, please identify the authorized individual that will be signing the resulting contract. Presumably this will be the company owner or corporate officer authorized to bind the company for future work.

COMPANY INFORMATION:

Company Name:
Authorized Name:
Title:
Individual E-Mail Address:
Telephone Number including area code:
Mailing Address:

**SUBCONTRACTOR DETAIL
SUBCONTRACTORS EXCEEDING FIVE PERCENT OF BID AMOUNT**

INSTRUCTIONS: Per NRS 338.141, Bidder submits the following names of First-Tier Subcontractors who will provide to Bidder labor or a portion of the Work or improvements for which Subcontractor will be paid an amount exceeding five percent (5%) of the Bid Price. The Bidder shall list the name of a Subcontractor for each portion of the Work, the value of which exceeds five percent (5%) of the Bid Price. **If Bidder will perform more than 5% of the Work, BIDDER SHALL ALSO LIST HIS NAME and description of the work that the prime contractor will perform in the space provided below.**

Name of Subcontractor	Address	
Phone	Nevada Contractor License #	Limit of License
Description of Work:		
Name of Subcontractor	Address	
Phone	Nevada Contractor License #	Limit of License
Description of Work:		
Name of Subcontractor	Address	
Phone	Nevada Contractor License #	Limit of License
Description of Work:		
Name of Subcontractor	Address	
Phone	Nevada Contractor License #	Limit of License
Description of Work:		
Name of Subcontractor	Address	
Phone	Nevada Contractor License #	Limit of License
Description of Work:		
Name of Subcontractor	Address	
Phone	Nevada Contractor License #	Limit of License
Description of Work:		

Bidder Name: _____

Authorized Signature: _____

SUBCONTRACTOR DETAIL
SUBCONTRACTORS EXCEEDING ONE PERCENT OF BID AMOUNT OR \$50,000

INSTRUCTIONS: In compliance with NRS 338.141, Bidder submits the following names of First-Tier Subcontractors who will provide to Bidder labor or a portion of the Work or improvements for which Subcontractor will be paid an amount exceeding one percent (1%) of the Bid or \$50,000, whichever is greater.

Since all Subcontractors listed on the Bidder's 5% Subcontractor Information Form are over 1% of the Bid amount, those Subcontractors shall automatically be deemed incorporated into this 1% Subcontractor Information form and need not be re-listed below.

Information provided must be submitted within two (2) hours after the completion of the opening of the bids (Per NRS 338.141). Bidder shall enter "NONE" under "Name of Subcontractor" if not utilizing subcontractors exceeding this amount. This form must be complete in all respects. If, additional space is needed, attach a separate page. The bidder may elect to submit this information with the bid proposal and, in that case, the bidder will be considered as having submitted this information within the above two hours.

Name of Subcontractor	Address	
Phone	Nevada Contractor License #	Limit of License
Description of Work:		
Name of Subcontractor	Address	
Phone	Nevada Contractor License #	Limit of License
Description of Work:		
Name of Subcontractor	Address	
Phone	Nevada Contractor License #	Limit of License
Description of Work:		
Name of Subcontractor	Address	
Phone	Nevada Contractor License #	Limit of License
Description of Work:		

Bidder Name: _____ **Authorized Signature:** _____

CITY OF SPARKS ACKNOWLEDGMENT AND EXECUTION:

STATE OF _____)
) SS
County of _____)

_____(Name of Principal) being first duly sworn, deposes and says: That he/she is the Bidder, or authorized agent of the Bidder for whom the aforesaid described work is to be performed by; that he/she has read the Plans, Specifications, and related documents including but not limited to, any addenda issued and understands the terms, conditions, and requirements thereof; that if his/her bid is accepted that he/she agrees to furnish and deliver all materials except those specified to be furnished by the City of Sparks (Owner) and to do and perform all work for the **TMWRF ALARM UPGRADE**, Bid # **22/23-010**, together with incidental items necessary to complete the work to be constructed and/or services to be provided in accordance with the Specifications, Plans, and Contract Documents annexed hereto.

TO THE CONTRACTS AND RISK MANAGER OF THE CITY OF SPARKS:

The undersigned, as Bidder, declares that the only persons or parties interested in this proposal, as principals, are those named herein, the Bidder is fully informed respecting the preparation and contents of the attached Bid and of all pertinent circumstances respecting such Bid: that this proposal is made without collusion with any other person, firm or corporation; that he/she has carefully examined the location of the proposed work; the proposed form of Contract, the Contract Provisions, Plans, Specifications and Contract Documents incorporated therein referred to and made part thereof; that he/she proposes and agrees if this proposal is accepted, that he/she will contract with the City of Sparks in the form of the Contract prescribed, to provide all necessary machinery, tools, apparatus and other means of construction, and to do all the work and furnish all the materials specified in the Contract and annexed Contract Provisions, Plans and Specifications, in the manner and time prescribed and according to the requirements of the Project Representative as therein set forth, it being understood and agreed that the quantities shown herein are approximate only and are subject to increase or decrease, and that he/she will accept, in full, payment therefore the indicated prices.

(Printed Name of Contractor/Bidder) Contractor/Bidder: _____
BY: _____
Firm: _____
Address: _____
City: _____
State / Zip Code: _____
Telephone Number: _____
Fax Number: _____
E-mail Address: _____
(Signature of Principal) Signature: _____
DATED this _____ day of _____, 2022.

State of Nevada)
) SS.
County of _____)

On this _____ day of _____, in the year 2022, before me,

_____/Notary Public, personally appeared _____ Personally known to me (or proved
to me on the basis of satisfactory evidence) to be the person whose name is subscribed to this instrument, and acknowledged that he (she) executed it. WITNESS my hand and official seal.

Notary's Signature: _____ My commission Expires: _____

**CERTIFICATION REGARDING DEBARMENT, SUSPENSION, AND OTHER
RESPONSIBILITY MATTERS
(This form to be signed and returned at the time of bid)**

This certification is required by the Federal Regulations Implementing Executive Order 12549, Debarment and Suspension, 45 CFR Part 93, Government-wide Debarment and Suspension, for the Department of Agriculture (7 CFR Part 3017), Department of Labor (29 CFR Part 98), Department of Education (34 CFR Parts 85, 668, 682), Department of Health and Human Services (45 CFR Part 76).

The prospective bidder, _____ certifies to the best of its knowledge and belief that it and its principals:

- (a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
- (b) Have not within a three year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
- (c) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (b) of this certification; and
- (d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State, or local) terminated for cause or default.

I understand that a false statement on this certification may be grounds for rejection of this proposal or termination of the award. Any exceptions provided will not necessarily result in denial of award, but will be considered in determining bidder responsibility and whether or not the City will enter into contract with the party. For any exception noted, indicate on an attached sheet to whom it applies, initiating agency, and dates of action. Providing false information may result in criminal prosecution or administrative sanctions.

Typed Name & Title of Authorized Representative

Signature of Authorized Representative _____ Date _____

I am unable to certify to the above statement. My explanation is attached.

Signature _____ Date _____

Local Preference Affidavit

NEW Instructions: This form is required to receive a preference in bidding on projects exceeding \$250,000. This form must be submitted no later than two (2) hours following the opening of bids, only if the bidder wishes for their preferential status(established by their current Certificate of Eligibility) to be considered in the evaluation of bids. A copy of the bidder’s Certificate of Eligibility must be submitted at the time the contractor submits their bid.

I, _____, on behalf of the Contractor, _____, swear and affirm that in order to be in compliance with NRS 338.0117 and be eligible to receive a preference in bidding **TMWRF ALARM UPGRADE (Bid #22/23-010)** certify that the following requirement will be adhered to, documented and attained on completion of the contract. Upon submission of this affidavit on behalf of _____, I recognize and accept that failure to comply with any requirements is a material breach of the contract and entitles the City to damages. In addition, the Contractor may lose their preference designation and/or lose their ability to bid on public works for a period of time, pursuant to NRS 338:

1. The Contractor shall ensure at least 50 percent of workers employed on the public work possess a Nevada driver’s license or identification card;
2. The Contractor shall ensure all vehicles used primarily for the public work will be registered and (where applicable) partially apportioned to Nevada;
3. The Contractor shall ensure payroll records related to this project are maintained and available within the State of Nevada.

These requirements are not applicable to Contractors who do not use the “Bidder’s Preference” eligibility certificate in their bid or do not receive an advantage in ranking of bids due to their preference status.

By: _____ Title: _____

Signature: _____ Date: _____

Signed and sworn to (or affirmed) before me on this _____ day of _____, 20____, by _____ (name of person making statement).

State of _____)
)ss.
County of _____)

_____ STAMP AND SEAL
Notary Signature

CITY OF SPARKS, NEVADA – 5% Bid Bond

KNOW ALL MEN BY THESE PRESENTS: That we the undersigned _____, as “Principal,” and _____, as “Surety,” are hereby held and firmly bound unto the City of Sparks, Nevada, as “Obligee,” in the penal sum of _____ dollars (\$_____) for the payment of which, well and truly to be made, the Principal and Surety bind themselves, their heirs, executors, and administrators, successors and assigns, jointly and severally, by this instrument. The condition of the obligation of this bid bond is as follows:

WHEREAS, NRS 332.105 authorizes local governments to require bid bonds to insure execution and proper performance of the Contract and the Bonding Company has an “A” or better rating with Moody’s or A.M. Best and T-Listed with the U.S. Treasury Department;

AND, WHEREAS, the Principal has submitted a bid for Bid # **22/23-010**, PWP # **WA-2023-078**, for the **TMWRF ALARM UPGRADE**.

NOW, THEREFORE,

- (a) If said Bid shall be rejected; or
- (b) If said Bid shall be accepted and the Principal shall execute and deliver the contract in the bid documents (“Contract”) to Obligee in accordance with the terms of the bid documents, and give such bond or bonds as may be specified in the bid or contract documents with good and sufficient surety for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof; or
- (c) If the Principal shall pay to the Obligee the full amount of the bid bond as a penalty irrespective of the Obligee’s actual damages in the event of the failure of the Principal to enter into such Contract and give such bond or bonds,

then, this obligation shall be null and void. Otherwise it shall remain in full force and effect, it being expressly understood and agreed that the liability of the Surety (but not of the Principal) for any and all claims hereunder shall, in no event, exceed the penal amount of the obligation as herein stated.

The Surety, for the consideration for which this bond was executed, 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 Obligee may accept such bid, and hereby waives notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and the Surety has caused their seal to be hereto affixed and these present to be signed by their proper officers.

Signed, Sealed and dated: _____

Principal
By: _____

Surety
By: _____

GENERAL CONDITIONS

General Conditions



GENERAL CONDITIONS

Please Read Carefully

These Provisions Are a Part of Your Bid and any Contract Awarded

Scope of Bid/Proposal: Bids/Proposals are hereby requested for **TMWRF ALARM UPGRADE**, as per specifications herein.

The bidder agrees that:

- A. Bidder has carefully examined the specifications, and all provisions relating to the item(s) to be furnished or the work to be done; understands the meaning, intent, and requirements; and
- B. Bidder will enter into a written contract and furnish the item(s) or complete the work in the time specified, and in strict conformity with the City of Sparks specifications for the prices quoted.

Note: Bidder is defined as any individual, partnership, or corporation submitting a bid, proposal, or quotation in response to a request for bid (RFB), request for proposal (RFP), request for information (RFI) or request for quotation (RFQ). A bidder may also be referred to as a bidder, contractor, supplier or vendor.

The use of the title "Bidder," "Vendor", "Contractor" or "Consultant" within this solicitation document and any resulting contract shall be deemed interchangeable and shall refer to the person or entity with whom the City of Sparks is soliciting and/or contracting for the service or product referenced within the bid document.

1. Prices:

All prices and notations must be in ink or typewritten. Mistakes may be crossed out and corrections typed or written with ink adjacent to the error. Bids shall indicate the unit price extended to indicate the total price for each item bid. Any difference between the unit price correctly extended and the total price shown for all items bid shall be resolved in favor of the unit prices. Bidders are encouraged to review all prices prior to bid submittal, as withdrawal or correction may not be permitted after the bid has been opened.

2. Firm Prices:

Prices on bid shall be firm prices not subject to escalation unless otherwise provided for in the specifications. In the event the specifications provide for escalation, the maximum limit shall be shown, or the bid shall not be considered. In the event of a decline in market price below a price bid, the City of Sparks shall receive the benefit of such decline.

3. Items Offered:

If the item offered by the bidder has a trade name, brand and/or catalog number, such shall be stated in the bid. If the bidder proposes to furnish an item of a manufacturer or vendor other than that mentioned on the face hereof, bidder must specify maker, brand, quality, catalog number, or other trade designation. Unless such is noted on the bid form, it will be deemed that the item offered is that designated even though the bid may state "or equal".

4. Brand Names:

Whenever reference to a specific brand name is made by the City, it is intended to describe a component that has been determined to best meet operational, performance, or reliability standards of the City, thereby incorporating these standards by reference within the specifications. These specifications are not meant to limit the vendor; they are guidelines to minimum qualifications. The bidder shall indicate their compliance or non-compliance for each line of the specification. Any deviations from the specifications or where submitted literature does not fully support the meaning of the specifications must be clearly cited in writing by the bidder.

General Conditions



An equivalent (“or equal”) may be offered by the bidder, subject to evaluation and acceptance by the City. It is the bidder’s responsibility to provide, at bidder’s expense, samples, test data, or other documentation the City may require to fully evaluate and determine acceptability of an offered substitute. The City reserves the sole right to reject a substituted component that will not meet or exceed City standards.

5. Samples:

Samples may be required for bid evaluation and testing purposes. Bidders shall agree to provide samples upon request and at no additional cost to the City.

6. Withdrawal of Bids:

Bids may be withdrawn by written or facsimile notice received prior to the exact hour and date specified for receipt of bid. A bid may also be withdrawn in person by a bidder, or bidder’s authorized representative, prior to the exact hour and date set for receipt of bids. Telephone withdrawals are not permitted.

7. Late Bids, Modifications, or Withdrawals:

Bids, modifications of bids, or bid withdrawals received after the exact time and date specified for receipt will not be considered.

8. Mistake in Bid:

- (a) If the bidder discovers a mistake in bid prior to the hour and date specified for receipt of bid, bidder may correct the mistake by withdrawing the bid in accordance with Item 7 above and resubmit prior to the stated bid deadline.
- (b) If within seventy-two hours of the bid closing and prior to the issuance of a purchase order or a contract, the apparent low bidder discovers a mistake in bid of a serious and significant nature, bidder may request consideration be given to withdrawing the bid. The mistake must be evident and provable. The right is reserved by the City to reject any and all requests for withdrawal of bids. The decision of the Purchasing Manager is final as regards acceptance or rejection of requests for withdrawal after closing of bids.
- (c) A mistake in bid cannot be considered once a purchase order or contract is issued.

9. Signature:

All bids shall be signed and the title and firm name indicated. A bid by a corporation shall be signed by an authorized officer, employee or agent with his or her title.

10. Exceptions:

A bidder deviating from specifications must specify any and all deviation(s). Failure to note said exceptions shall be interpreted to convey that the bidder shall propose to perform in the manner described and/or specified in this bid solicitation. If exception(s) are taken or alternatives offered, complete descriptions must be shown separately.

11. Confidential Information:

Any information deemed confidential or proprietary should be clearly identified by the bidder as such. It may then be protected and treated with confidentiality only to the extent permitted by state law. Otherwise the information shall be considered a public record. Information or data submitted with a bid will not be returned.

12. Quality:

Unless otherwise required in the specifications, all goods furnished shall be new and unused.



13. Litigation Warranty:

The bidder, by bidding, warrants that bidder is not currently involved in litigation or arbitration concerning the materials or bidder's performance concerning the same or similar material or service to be supplied pursuant to this contract of specification, and that no judgments or awards have been made against bidder on the basis of bidder's performance in supplying or installing the same or similar material or service, unless such fact is disclosed to the City in the bid. Disclosure may not disqualify the bidder. The City reserves the right to evaluate bids on the basis of the facts surrounding such litigation or arbitration and to require bidder to furnish the City with a surety bond executed by a surety company authorized to do business in the State of Nevada and approved by The City of Sparks in a sum equal to one hundred percent (100%) of the contract price conditional on the faithful performance by bidder of the contract in the event the bid is awarded to bidder, notwithstanding the litigation or arbitration.

14. Royalties, Licenses and Patents:

Unless otherwise specified, the bidder shall pay all royalties, license and patent fees. The bidder warrants that the materials to be supplied do not infringe any patent, trademark or copyright and further agrees to defend any and all suits, actions and claims for infringement that are brought against the City, and to defend, indemnify and hold harmless the City from all loss or damages, whether general, exemplary or punitive, as a result of any actual or claimed infringement asserted against the City, the bidder or those furnishing material to bidder pursuant to this contract.

15. Performance Standards:

Performance of work and acceptability of equipment or materials supplied pursuant to any contract or award shall be to the satisfaction and full discretion of the City.

16. Americans with Disabilities Act (ADA) Standards:

Bidders shall be required to comply with current ADA Standards in preparing their bids and executing work required under any contract resulting from this bid. Completed work must comply with current ADA Standards.

17. Warranties:

(a) Unless otherwise specified, all workmanship, material, labor or equipment provided under the contract shall be warranted by bidder and/or manufacturer for a minimum of twelve (12) months after acceptance by City. Greater warranty protection will be accepted. Lesser warranty protection must be indicated by bidder on the bid proposal as an exception.

(b) Bidder shall be considered primarily responsible to the City for all warranty service, parts and labor applicable to the goods or equipment provided by bidder under this bid or award, irrespective of whether bidder is an agent, broker, fabricator or manufacturer's dealer. Bidder shall be responsible for ensuring that warranty work is performed at a local agency or facility convenient to City and that services, parts and labor are available and provided to meet City's schedules and deadlines. If required and defined within the Scope of Work, the Bidder will post a performance bond after contract award to guarantee performance of these obligations. Bidder may establish a service contract with a local agency satisfactory to City to meet this obligation if bidder does not ordinarily provide warranty service.

18. Addenda:

The effect of all addenda to the bid documents shall be considered in the bid, and said addenda shall be made part of the bid documents and shall be returned with them. Before submitting a bid, each bidder shall ascertain

General Conditions



whether or not any addenda have been issued, and failure to acknowledge any such addenda may render the bid invalid and result in its rejection.

All potential bidders are responsible for monitoring the City website regarding the availability of new bid documents or addenda (where applicable). The City of Sparks will not be responsible for the results of any potential failures in automatic notification systems to potential bidders or plan holders with respect to these documents and will not adjust bid schedules or requirements due to any potential failures of those systems. It is the responsibility of all potential bidders/responders to monitor the Purchasing Division's website for any changing information prior to submitting their bid/proposal. The City of Sparks will not be responsible for the timeliness or completeness of information provided by any 3rd party bid listing or re-selling service.

19. Specifications to Prevail:

The detailed requirements of the Specifications, Scope of Work or Special Conditions shall supersede any conflicting reference in these General Conditions or the stated language on the City of Sparks Standard Purchase Order that are in conflict therewith.

20. Taxes:

The City is exempt from State, City and County Sales Taxes per NRS 372.325. The City will furnish Exemption Certificates for Federal Excise Tax when applicable. The successful bidder shall pay all taxes, levies, duties and assessments of every nature, which may be applicable to any work or materials under this Contract. The Contract Sum and any agreed variations thereof shall include all taxes imposed by law. The successful bidder shall make any and all payroll deductions required by law. The successful bidder herein indemnifies and holds the City harmless from any liability on account of any and all such taxes, levies, duties, assessments and deductions.

21. Prevailing Wages:

Bidder is responsible for complying with all applicable local, State and Federal wage laws, whether or not specifically cited in this bid document.

Per NRS Sections 338.020 through 338.090, certain projects defined as "public works" require the payment of the prevailing wage as determined by the Labor Commissioner. Generally speaking, projects/contracts for construction of a public work valued at less than \$100,000 are exempt from the prevailing wage requirement (NRS 338.080). Bidder shall be fully aware of the prevailing wage requirements of the State of Nevada as detailed in NRS Chapter 338 and price their bid response accordingly. Further information concerning Prevailing Wage rates can be found at:

https://labor.nv.gov/PrevailingWage/Public_Works_Prevailing_Wages/

Federal "Davis Bacon" wages may be applicable if the funding for the project includes Federal funds. These requirements are detailed in the "Special Conditions – Federal Requirements" section that will be included in this bid document when such conditions apply. Contractor shall compare the applicable wage rate for each classification used on the project and pay the higher of the two rates (Nevada State Prevailing Wage or Davis Bacon Wage) in each case.

General Conditions



22. Apprenticeship Utilization Act (This Section IS IS NOT Applicable to this bid):

Senate Bill 207 (Apprenticeship Utilization Act) passed during the 2019 Legislative Session added sections 338.0116 and 338.01165 to the NRS. These new provisions apply to bids for public works where the value exceeds \$100,000.00. In passing SB 207, The Legislature hereby finds and declares that: (1) A skilled workforce in construction is essential to the economic well-being of the State; (2) Apprenticeship programs are a proven method of training a skilled workforce in construction; and (3) Requiring the use of apprentices on the construction of public works will ensure the availability of a skilled workforce in construction in the future for this State

A contractor or subcontractor engaged in **horizontal construction** who employs a worker on a public work pursuant to NRS 338.040 shall use one or more apprentices for at least 3 percent of the total hours of labor worked for each apprenticed craft or type of work to be performed on the public work for which more than three workers are employed.

“Horizontal Construction” means any construction, alteration, repair, renovation, demolition or remodeling necessary to complete a public work, including, without limitation, any irrigation, drainage, water supply, flood control, harbor, railroad, highway, tunnel, airport or airway, sewer, sewage disposal plant or water treatment facility and any ancillary vertical components thereof, bridge, inland waterway, pipeline for the transmission of petroleum or any other liquid or gaseous substance, pier, and any other work incidental thereto. The term does not include vertical construction, the construction of any terminal or other building of an airport or airway, or the construction of any other building.

A contractor or subcontractor engaged in **vertical construction** who employs a worker on a public work pursuant to NRS 338.040 shall use one or more apprentices for at least 10 percent of the total hours of labor worked for each apprenticed craft or type of work to be performed on the public work for which more than three workers are employed.

“Vertical Construction” means any construction, alteration, repair, renovation, demolition or remodeling necessary to complete a public work for any building, structure or other improvement that is predominantly vertical, including, without limitation, a building, structure or improvement for the support, shelter and enclosure of persons, animals, chattels or movable property of any kind, and any other work or improvement appurtenant thereto.

A Public Body/Awarding Body, upon the request of a contractor or subcontractor, **MAY** submit a request for a modification or waiver of the percentage of hours of labor of one or more apprentices prior to (1) the bid advertisement; (2) the bid opening; or (3) the award of the contract if, “Good Cause” exists. The Labor Commissioner may also grant a modification or waiver from the requirements of NRS 338.01165 after work on the public work has commenced.

More information regarding these requirements and forms associated with this act may be found in the section following these General Conditions, labeled “Apprenticeship Requirements.”

23. Conflict of Interest:

No City employee or elected or appointed member of City government, or member of the employee’s immediate family, may participate directly or indirectly in the procurement process pertaining to this bid if they:

General Conditions



- (a) Have a financial interest or other personal interest that is incompatible with the proper discharge of their official duties in the public interest or would tend to impair their independence, judgment or action in the performance of their official duties.
- (b) Are negotiating for or have an arrangement concerning prospective employment with bidder. The bidder warrants to the best of his knowledge that the submission of the bid will not create such conflict of interest. In the event such a conflict occurs, the bidder is to report it immediately to the Purchasing Manager. For breach or violation of this warranty, the City shall have the right to annul this contract without liability at its discretion, and bidder may be subject to damages and/or debarment or suspension.

24. Disqualification of Bidder:

Any one or more of the following may be considered as sufficient for the disqualification of a prospective Bidder and the rejection of the Bid:

- (a) The Bidder is not responsive or responsible.
- (b) The quality of services, materials, equipment or labor offered does not conform to the approved plans and specifications.
- (c) There is evidence of collusion among prospective Bidders (Participants in such collusion will receive no recognition as Bidders).
- (d) The Bidder lacks the correct contractor's license classification required for the defined scope of work.
- (e) Lack of competency, understanding of the scope of work, adequate machinery, plant and/or equipment as revealed in routine due diligence associated with bid evaluation.
- (f) Unsatisfactory performance record as shown by past work for the City of Sparks, judged from the standpoint of workmanship, progress, and quality of services/goods provided.
- (g) Uncompleted work which, in the judgment of the City of Sparks, might hinder or prevent the prompt completion of additional work, if awarded.
- (h) Failure to pay or satisfactorily settle all bills due for labor and/or material on any contract(s).
- (i) Failure to comply with any requirements of the City of Sparks.
- (j) Failure to list, as required, all subcontractors who will be employed by the Bidder.
- (k) Any other reason determined, in good faith, to be in the best interest of the City of Sparks.

25. Gratuities:

The City may rescind the right of the bidder to proceed under this agreement if it is found that gratuities in the form of entertainment, gifts, cash or otherwise are offered or given by the bidder, or any agent or representative of the bidder, to any officer or employee of the City with the intent of influencing award of this agreement or securing favorable treatment with respect to performance of this agreement.

26. Bidder's Security (This Section IS IS NOT Applicable to this bid):

A bid deposit in an amount equal to at least 5% of the bid may be required as a bid security by the City. The bid security may only be in cash, a cashier's or certified check made payable to the City of Sparks, or a bid bond. If the bid security is a bond, it shall be executed by a surety insurer authorized to issue surety bonds in the State of Nevada. All Bonding Companies must have an "A" rating or better with Moody's or A.M. Best Company, and be included on the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bond and as Acceptable Reinsuring Companies" as published in circular 570 (as amended) by the audit staff, Bureau of Accounts, U.S. Treasury Department. (In other words, the company is T-listed.) The bid security must be executed by the bidder and enclosed with the bid proposal in the sealed bid envelope.



27. Performance and Payment Bonds:

Per NRS 339.025, before any contract, except one subject to the provisions of chapter 408 of NRS, exceeding \$100,000 for any project for the new construction, repair or reconstruction of any public building or other public work or public improvement of any contracting body is awarded to any contractor, he shall furnish to the contracting body the following bonds which become binding upon the award of the contract to the contractor (All Bonding Companies must have an “A” rating or better with Moody’s or A.M. Best Company, and be included on the current list of “Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bond and as Acceptable Reinsuring Companies” as published in circular 570 (as amended) by the audit staff, Bureau of Accounts, U.S. Treasury Department. (In other words, the company is T-listed.)):

Performance Bond (This Section IS IS NOT Applicable to this bid):

The Contractor awarded this bid will be required to furnish the City with a surety bond conditioned upon the faithful performance of the contract. This may take the form of a bond executed by a surety company authorized to do business in the State of Nevada and approved by the City of Sparks. The bond shall be in a sum equal to one hundred percent (100%) of the amount of the contract price. Such bond shall be forfeited to the City in the event that bidder receiving the contract shall fail or refuse to fulfill the requirements and all terms and conditions of the contract.

Payment Bond (This Section IS IS NOT Applicable to this bid):

The Contractor awarded this bid will be required to furnish the City with a payment bond. This may take the form of a bond executed by a surety company authorized to do business in the State of Nevada and approved by the City of Sparks. The bond shall be in a sum equal to one hundred percent (100%) of the amount of the contract price. The bond must be solely for the protection of claimants supplying labor or materials to the contractor to whom the contract was awarded, or to any of his subcontractors, in the prosecution of the work provided for in such contract.

28. Indemnification:

To the fullest extent permitted by law, upon award, Contractor shall hold harmless, indemnify, defend and protect City, its affiliates, officers, agents, employees, volunteers, successors and assigns (“Indemnified Parties”), and each of them from and against any and all claims, demands, causes of action, damages, costs, expenses, actual attorney’s fees, losses or liabilities, in law or in equity, of every kind and nature whatsoever (“Claims”) arising out of or related to any act or omission of Contractor, its employees, agents, representatives, or Subcontractors in any way related to the performance of work under this Agreement by Contractor, or to work performed by others under the direction or supervision of Contractor, including but not limited to:

1. Personal injury, including but not limited to bodily injury, emotional injury, sickness or disease, or death to persons;
2. Damage to property of anyone, including loss of use thereof;
3. Penalties from violation of any law or regulation caused by Contractor’s action or inaction;
4. Failure of Contractor to comply with the Insurance requirements established under this Agreement;
5. Any violation by Contractor of any law or regulation in any way related to the occupational safety and health of employees.

In determining the nature of the claim against City, the incident underlying the claim shall determine the nature of the claim, notwithstanding the form of the allegations against City.

General Conditions



If City's personnel are involved in defending such actions, Contractor shall reimburse City for the time and costs spent by such personnel at the rate charged City for such services by private professionals.

In cases of professional service agreements, requiring professional liability coverage:

If the insurer by which a Consultant is insured against professional liability does not so defend the City and applicable agents and/or staff, and the Consultant is adjudicated to be liable by a trier of fact, the City shall be entitled to reasonable attorney's fees and costs to be paid to the City by the Consultant in an amount which is proportionate to the liability of the of the Consultant.

Nothing in this contract shall be interpreted to waive nor does the City, by entering into this contract, waive any of the provisions found in Chapter 41 of the Nevada Revised Statutes.

29. Insurance:

BIDDERS' ATTENTION IS DIRECTED TO THE INSURANCE REQUIREMENTS BELOW. IT IS HIGHLY RECOMMENDED THAT BIDDERS CONFER WITH THEIR RESPECTIVE INSURANCE CARRIERS OR BROKERS TO DETERMINE IN ADVANCE OF BID SUBMISSION THE AVAILABILITY OF INSURANCE CERTIFICATES AND ENDORSEMENTS AS PRESCRIBED AND PROVIDED HEREIN. IF THE APPARENT LOW BIDDER FAILS TO COMPLY STRICTLY WITH THE INSURANCE REQUIREMENTS, THAT BIDDER MAY BE DISQUALIFIED FROM AWARD OF THE CONTRACT.

The City may, unless otherwise required by law, waive or reduce the insurance requirements itemized here, at the discretion of the city's Contracts and Risk Manager.

Should work be required on City premises or within the public right-of-way, upon award of the contract, the bidder shall provide proof of insurance for the types of coverage, limits of insurance and other terms specified herein, prior to initiation of any services under City, Bid, Proposal or Contract. Coverage shall be from a company authorized to transact business in the State of Nevada and the City of Sparks and shall meet the following minimum specifications:

Contractor shall at its own expense carry and maintain at all times the following insurance coverage and limits of insurance no less than the following or the amount customarily carried by Contractor or any of its subcontractors, whichever is greater. Contractor shall also cause each subcontractor employed by Contractor to purchase and maintain insurance of the type specified herein. All insurers must have AM Best rating not less than A-VII, and be acceptable to the City. Contractor shall furnish copies of certificates of insurance evidencing coverage for itself and for each subcontractor. Failure to maintain the required insurance may result in termination of this contract at City's option. If Contractor fails to maintain the insurance as set forth herein, City shall have the right, but not the obligation, to purchase said insurance at Contractor's expense.

Contractor shall provide proof of insurance for the lines of coverage, limits of insurance and other terms specified below prior to initiation of any services. Coverage shall be from a company authorized to transact business in the State of Nevada and the City of Sparks. Contractor and any of its subcontractors shall carry and maintain coverage and limits no less than the following or the amount customarily carried by Contractor or any of its subcontractors, whichever is greater.

General Conditions



Applicable to this Contract	Insurance Type	Minimum Limit	Insurance Certificate	Additional Insured	Waiver of Subrogation
Yes	General Liability/Umbrella (Excess) Liability	\$2,000,000	✓	✓	✓
Yes	Automobile Liability	\$1,000,000	✓	✓	
Yes	Workers' Compensation	Statutory	✓	N/A	✓
Yes	Employer's Liability	\$1,000,000	✓	N/A	
No	Professional Liability	\$1,000,000	✓	N/A	N/A
No	Pollution Legal Liability	\$1,000,000	✓	N/A	N/A

Commercial General Liability

Contractor shall carry and maintain Commercial General Liability (CGL) and, if necessary to meet required limits of insurance, commercial umbrella/excess liability insurance with a total limit of not less than the limits specified herein.

For contracts that are for the construction or improvement of public facilities, the Contractor shall obtain and maintain products and completed operations liability coverage through the statute of repose after completion of the project. Continuing commercial umbrella coverage, if any, shall include liability coverage for damage to the insured's completed work equivalent to that provided under ISO form CG 00 01.

There shall be no endorsement or modification of the CGL limiting the scope of coverage for liability arising from pollution, explosion, collapse, underground property damage, or damage to the named insured's work unless Subcontractor carries and maintains separate policies providing such coverage and provides Contractor evidence of insurance confirming the coverage.

Minimum Limits of Insurance

\$2,000,000 Each Occurrence Limit for bodily injury and property damage

\$2,000,000 General Aggregate Limit

\$2,000,000 Products and Completed Operations Aggregate Limit

\$10,000 Medical Expense Limit

If Commercial General Liability Insurance or other form with a general aggregate limit is used, it shall be revised to apply separately to this PROJECT or LOCATION.

Coverage Form

Coverage shall be at least as broad as the unmodified Insurance Services Office (ISO) Commercial General Liability (CGL) "Occurrence" form CG 00 01 04/13 or substitute form providing equivalent coverage and shall cover liability arising from premises, operations, independent contractors, products-completed operations, personal and advertising injury, and liability assumed under an insured contract (including the tort liability of another assumed in a business contract).



Additional Insured

City, its officers, agents, employees, and volunteers are to be included as insureds using the applicable ISO additional insured endorsement(s) or substitute forms providing equivalent coverage, in respects to damages and defense arising from: activities performed by or on behalf of Contractor, including the insured's general supervision of Contractor; products and completed operations of Contractor; premises owned, occupied, or used by Contractor. The coverage shall contain no special limitations on the scope of protection afforded to City, its officers, employees, or volunteers. Additional insured status for City shall apply until the expiration of time within which a claimant can bring suit per applicable state law.

Primary and Non-Contributory

Contractor's insurance coverage shall apply as primary insurance with respect to any other insurance or self-insurance programs afforded to City, its officers, agents, employees, and volunteers. There shall be no endorsement or modification of the CGL to make it excess over other available insurance; alternatively, if the CGL states that it is excess or pro rata, the policy shall be endorsed to be primary with respect to the additional insured. Any insurance or self-insurance maintained by City, its officers, employees, or volunteers shall be excess of Contractor's insurance and shall not contribute with it in any way.

Waiver of Subrogation

Contractor waives all rights against City and its agents, officers, directors and employees for recovery of damages to the extent these damages are covered by the commercial general liability or commercial umbrella liability insurance maintained pursuant to this agreement. Insurer shall endorse CGL policy as required to waive subrogation against the City with respect to any loss paid under the policy.

Endorsements

Policy forms or endorsements are required confirming coverage for all required additional insureds. The forms or endorsements for CGL shall be at least as broad as the unmodified ISO additional insured endorsement CGO 20 10 07/04 and CG 20 37 07/04 or substitute forms providing additional insured coverage for products and completed operations.

A waiver of subrogation in favor of City shall be endorsed to the policy using an unmodified Waiver of Transfer of Rights of Recovery of Others to Us ISO CG 24 04 05 09, or a substitute form providing equivalent coverage.

Electronic Data Liability

If any underground work will be performed, Contractor shall maintain electronic data liability insurance applicable to the Project and insuring against liability arising out of the loss of, loss of use of, damage to, corruption of, inability to access, or inability to manipulate electronic data. This coverage shall be maintained with a limit of liability of not less than \$1,000,000 and provide coverage at least as broad as electronic data liability coverage form CG 04 37 (or substitute form providing equivalent coverage).

Railroad Protective Liability

For any construction or demolition work within fifty (50) feet of a railroad, Contractor shall maintain Railroad Protective Liability insurance on behalf of and in the name of the railroad, as named insured, with a limit of \$6,000,000 per occurrence or higher limit if required by the railroad. Contractor shall also ensure that any exclusions pertaining to the indemnification of a railroad are removed from its CGL policy or that ISO form CG 24 17 (Contractual Liability-Railroads Endorsements) is included in the coverage.

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Business Automobile Liability

Minimum Limits of Insurance

\$1,000,000 Combined Single Limit per accident for bodily injury and property damage or the limit customarily carried by Contractor, whichever is greater. No aggregate limit may apply. Coverage may be combined with Excess/Umbrella Liability coverage to meet the required limit.

Coverage Form

Coverage shall be at least as broad as the unmodified Insurance Services Office (ISO) Business Automobile Coverage form CA 00 01 10/13, CA 00 25 10/13, CA 00 20 10/13 or substitute form providing equivalent coverage. Such insurance shall cover liability arising out of any auto (including owned, hired, and non-owned autos).

Pollution liability coverage at least as broad as that provided under the ISO pollution liability—broadened coverage for covered autos endorsement (CA 99 48) shall be provided, and the Motor Carrier Act endorsement (MCS 90) shall be attached for all contracts involving transportation of “hazardous material” as this term is defined by applicable law, including, but not limited to, waste, asbestos, fungi, bacteria and mold.

Additional Insured

City, its officers, agents, employees, and volunteers are to be included as insureds with respect to damages and defense arising from the ownership, maintenance or use of automobiles owned, leased, hired, or borrowed by the Contractor. The coverage shall contain no special limitations on the scope of protection afforded to City, its officers, employees, or volunteers. Additional insured status for City shall apply until the expiration of time within which a claimant can bring suit per applicable state law.

Endorsements

A policy endorsement is required listing all required additional insureds. The endorsement for Business Automobile Liability shall be at least as broad as the unmodified ISO CA 20 48 10/13 or a substitute form confirming City’s insured status for Liability Coverage under the Who Is An Insured Provision contained in Section II of the coverage form ISO CA 00 01 10/13.

Waiver of Subrogation.

Contractor waives all rights against City, its officers, agents, employees, and volunteers for recovery of damages to the extent these damages are covered by the commercial general liability or commercial umbrella liability insurance maintained pursuant to this agreement. Contractor’s insurer shall endorse policy to waive subrogation against City with respect to any loss paid under the policy.

Workers’ Compensation and Employer’s Liability

Contractor shall carry and maintain workers’ compensation and employer’s liability insurance meeting the statutory requirements of the State of Nevada, including but not limited to NRS 616B.627 and NRS 617.210 or provide proof that compliance with the provisions of Nevada Revised Statutes Chapters 616A-D and all other related chapters is not required. It is understood and agreed that there shall be no coverage provided for Contractor or any Subcontractor of the Contractor by the City. Contractor agrees, as a precondition to the performance of any work under this Agreement and as a precondition to any obligation of the City to make any payment under this Agreement to provide City with a certificate issued by an insurer in accordance with NRS 616B.627 and with a certificate of an insurer showing coverage pursuant to NRS 617.210.

It is further understood and agreed by and between City and Contractor that Contractor shall procure, pay for and maintain the above-mentioned coverage at Contractor's sole cost and expense.

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Should Contractor be self-funded for workers’ compensation and employer’s liability insurance, Contractor shall so notify City in writing prior to the signing of this Contract. City reserves the right to approve said retentions, and may request additional documentation, financial or otherwise, for review prior to the signing of this Contract.

Upon completion of the project, Contractor shall, if requested by City, provide a Final Certificate for itself and each Subcontractor showing that Contractor and each Subcontractor had maintained the required Workers Compensation and Employer’s Liability by paying all premiums due throughout the entire course of the project.

Nevada law allows the following to reject workers’ compensation coverage if they do not use employees or subcontractors in the performance of work under the contract:

- Sole proprietors (NRS 616B.627 and NRS 617.210)
- Unpaid officers of quasi-public, private or nonprofit corporations (NRS 616B.624 and NRS 617.207)
- Unpaid managers of limited liability companies (NRS 616B.624 and NRS 617.207)
- An officer or manager of a corporation or limited liability company who owns the corporation or company (NRS 616B.624 and NRS617.207)

If a contractor has rejected workers’ compensation coverage under applicable Nevada law, the contractor must indicate the basis for the rejection of coverage and complete, sign and have notarized an Affidavit of Rejection of Coverage. The Affidavit must be completed, signed and notarized prior to performance of any work.

Minimum Limits of Insurance

Workers’ Compensation:	Statutory Limits
Employer’s Liability:	\$1,000,000 Bodily Injury by Accident – Each Accident
	\$1,000,000 Bodily Injury by Disease – Each Employee
	\$1,000,000 Bodily Injury by Disease – Policy Limit

Coverage Form

Coverage shall be at least as broad as the unmodified National Council on Compensation Insurance (NCCI) Workers Compensation and Employer’s Liability coverage form WC 00 00 07/11 or substitute form providing equivalent coverage.

OTHER INSURANCE COVERAGES (IF APPLICABLE)

Professional Liability Insurance (if Applicable) \$1,000,000 each claim limits of liability or whatever limit is customarily carried by the Contractor, whichever is greater, for design, design-build or any type of professional services. If coverage is required on a claims-made or claims-made and reported basis, any applicable retroactive or pending & prior litigation dates must precede the effective date of this contract. Continuous coverage shall be maintained, or an extended reporting period shall be obtained for a period of at least three (3) years following completion of the project.

Contractors Pollution Liability Insurance (If Applicable)- \$1,000,000 per occurrence and \$2,000,000 aggregate or whatever amount is acceptable to the City for any exposure to “hazardous materials” as this term is defined in applicable law, including but not limited to waste, asbestos, fungi, bacterial or mold.

General Conditions



Coverage shall apply to bodily injury; property damage, including loss of use of damaged property or of property that has not been physically injured; cleanup costs; and defense, including costs and expenses incurred in the investigation, defense, or settlement of claims.

City shall be included as an insured under Contractor's pollution liability insurance.

If coverage is required on a claims-made or claims-made and reported basis, any applicable retroactive or pending & prior litigation dates must precede the effective date of this contract. Continuous coverage shall be maintained, or an extended reporting period shall be obtained for a period of at least three (3) years following completion of the project.

If the scope of services as defined in this contract includes the disposal of any hazardous materials from the job site, Contractor must furnish to City evidence of pollution liability insurance maintained by the disposal site operator for losses arising from the insured facility accepting waste under this contract. Coverage certified to the City under this section must be maintained in minimum amounts of \$1,000,000 per loss, with an annual aggregate of at least \$2,000,000.

Lower tier sub-subcontractors, Truckers, Suppliers: Evidence confirming lower tier subcontractors, truckers and suppliers are maintaining valid insurance prior to beginning work on the project to meet the requirements set forth herein on Subcontractor, including but not limited to all additional insured requirements of Subcontractor.

ALL COVERAGES

Coverage shall not be suspended, voided, canceled, or non-renewed by either CONTRACTOR or by the insurer, reduced in coverage or in limits except after thirty (30) days' prior written notice has been given to CITY except for ten (10) days' notice for nonpayment of premium.

DEDUCTIBLES AND RETENTIONS

Any deductibles or self-insured retentions that exceed \$100,000.00 per occurrence or claim must be declared to and approved by the City's Contracts and Risk Manager and prior to signing this Contract. City is entitled to request and receive additional documentation, financial or otherwise, prior to giving its approval of the deductibles and self-insured retentions. Any changes to the deductibles or self-insured retentions made during the term of this Contract or during the term of any policy must be approved by City's Contracts and Purchasing Manager prior to the change taking effect. Contractor is responsible for any losses within deductibles or self-insured retentions.

OTHER INSURANCE PROVISIONS

Should City and Contractor agree that higher coverage limits are needed warranting a project policy, project coverage shall be purchased and the premium for limits exceeding the above amount may be borne by City. City retains the option to purchase project insurance through Contractor's insurer or its own source.

Any failure to comply with reporting provisions of the policies shall not affect coverage provided to City, its officers, agents, employees, or volunteers.

ACCEPTABILITY OF INSURERS

Insurance is to be placed with insurers with a Best's rating of no less than A-VII and acceptable to the City. City, with the approval of the Risk Manager, may accept coverage with carriers having lower Best's ratings upon review of financial information concerning Contractor and insurance carrier. City reserves the right to

General Conditions



require that Contractor's insurer be a licensed and admitted insurer in the State of Nevada, or meet any applicable state and federal laws and regulations for non-admitted insurance placement.

VERIFICATION OF COVERAGE

Contractor shall furnish City with certificates of insurance and with original endorsements affecting coverage required by this contract. The certificates and endorsements for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf.

Prior to the start of any Work, Contractor must provide the following documents to City of Sparks, Attention: Purchasing Division, P.O. Box 857, Sparks, NV 89432-0857:

- A. Certificate of Insurance.** Contractor must provide a Certificate of Insurance form to the City of Sparks to evidence the insurance policies and coverage required of Contractor.
- B. Additional Insured Endorsements.** An original Additional Insured Endorsement, signed by an authorized insurance company representative, must be submitted to the City of Sparks, by attachment to the Certificate of Insurance, to evidence the endorsement of the City of Sparks as additional insured.
- C. Policy Cancellation Endorsement.** Except for ten (10) days' notice for non-payment of premium, each insurance policy shall be endorsed to specify that without thirty (30) days prior written notice to the City of Sparks, the policy shall not be suspended, voided, cancelled or non-renewed, and shall provide that notices required by this paragraph shall be sent by certified mailed to the address specified above. A copy of this signed endorsement must be attached to the Certificate of Insurance. If endorsements are not available, Contractor shall be responsible to provide prior written notice to City as soon as practicable upon receipt of any notice of cancellation, non-renewal, reduction in required limits or other material change in the insurance required under this Agreement.
- D. Bonds (as Applicable).** Bonds as required and/or defined in the original bid documents.

All certificates and endorsements are to be addressed to the City of Sparks, Purchasing Division and be received and approved by City before work commences. The City reserves the right to require complete certified copies of all required insurance policies at any time.

SUBCONTRACTORS

Contractor shall include all Subcontractors as insureds under its policies or shall furnish separate certificates and endorsements for each Subcontractor. All coverages for Subcontractors shall be subject to all the requirements stated herein.

MISCELLANEOUS CONDITIONS

1. Contractor shall be responsible for and remedy all damage or loss to any property, including property of City, caused in whole or in part by Contractor, any Subcontractor, or anyone employed, directed, or supervised by Contractor.
2. Nothing herein contained shall be construed as limiting in any way the extent to which Contractor may be held responsible for payment of damages to persons or property resulting from its operations or the operations of any Subcontractors under it, and such coverage and limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to City in this contract.

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3. In addition to any other remedies City may have if Contractor fails to provide or maintain any insurance policies or policy endorsements to the extent and within the time herein required, City may, at its sole option:
 - a. Purchase such insurance to cover any risk for which City may be liable through the operations of Contractor under this Agreement and deduct or retain the amount of the premiums for such insurance from any sums due under the Agreement;
 - b. Order Contractor to stop work under this Agreement and/or withhold any payments which become due Contractor here under until Contractor demonstrates compliance with the requirements hereof; or,
 - c. Terminate the Agreement.
4. If Contractor's liability policies do not contain the standard ISO separation of insureds condition, or a substantially similar clause, they shall be endorsed to provide cross-liability coverage.

30. Safety Program:

Upon award, the Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the work. The Contractor shall take all necessary precautions for the safety of, and shall provide all necessary protection to prevent damage, injury, or loss to:

1. All employees on the work site and all other persons who may be affected thereby.
2. All the work, materials, and equipment to be incorporated therein, whether in storage on or off the site.
3. Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

Contractor shall comply with all applicable laws, ordinances, rules, regulations, and others of any public authority having jurisdiction for the safety of persons or property or to protect them from damage, injury, or loss. He shall erect and maintain, as required by existing conditions and progress on the work, all necessary safeguards for safety and protection, including posting danger signs, other warnings against hazards, promulgating safety regulations, and notifying owners and users of adjacent utilities. Contractor shall comply with OSHA'S Hazard Communication Standards.

Contractor shall designate a responsible member of its organization at the site whose duty shall be the prevention of accidents. This person shall be Contractor's superintendent unless otherwise designated in writing by Contractor to the Owner and the Engineer.

31. Award of Contract:

- (a) Bids/Proposals will be analyzed and award will be made to the lowest, responsive and responsible bidder whose bid conforms to the solicitation and whose bid is considered to be most advantageous to the City, price and other factors considered. Factors to be considered may include, but are not limited to: bidder's past performance, total unit cost, economic cost analysis, life cycle costs, warranty and quality, maintenance cost, durability, the operational requirements of the City and any other factors which will result in the optimum economic benefit to the City.
- (b) The City reserves the right to reject any item or items, to waive informalities, technical defects and minor irregularities in bids/proposals received; and to select the bid(s) or proposal(s) deemed most advantageous to the City. Should the City elect to waive a right it will not constitute an automatic waiver of that right in the future nor will it impact any other right or remedy. The City may consider bids/proposals submitted on an "all or nothing" basis if the bid/proposal is clearly designated as such.

General Conditions



- (c) The City reserves the right to award one or more contracts on the bids/proposals submitted, either by award of all items to one bidder or by award of separate items or groups of items to various bidders as the interests of the City may require, unless the bidder clearly specifies otherwise in his bid.
- (d) Upon acceptance by the City of Sparks, the solicitation, bid, proposal, or price quotation and issuance of a purchase order issued to the successful bidder shall be deemed to result in a binding contract incorporating those terms and these General Conditions without further action required by either party. Items are to be furnished as described in the bid and in strict conformity with all instructions, conditions, specifications, and provisions in the complete contract, as defined by this clause or any related integrated agreement.

32. Request for Proposal (RFP) Submittals:

In the case of Request for Proposals (RFP's), it should be noted that the documents submitted by prospective bidders are competitive sealed proposals and not competitive sealed bids. When proposals are opened, prices and other information will not be made public until the proposal is awarded. There shall be no disclosure of any bidder's information to competing bidders prior to the award of the proposal.

By their nature, proposals will include a number of variables that will vary based on the complexity of the product or service addressed within the proposal. Therefore, the evaluation of RFP's and the recommendation for award will not be based on price alone. Selection criteria will be better defined for each scope of work in the Special Conditions section of this bid.

Upon award of the contract, the executed contract and proposals will become public information. Accordingly, each proposal should be submitted on the vendor's most favorable terms from a price and technical standpoint.

33. Bidder Preference Law (This Section IS IS NOT Applicable to this bid):

This project will be bid and awarded under the Provisions(s) of NRS 338.147, which restricts preference given to certain contractors on Public Works Projects. The NRS cited in this section is meant to be a reference only. Each bidder shall acquaint himself with the latest provisions of NRS 338.147.

If the Contract for any Public Works Construction Project is expected to cost \$250,000 or more, then all Contractors wishing to receive benefit of their preference status in the evaluation of bids must submit a copy of their Certificate of Bidder Preference issued by the State Contractor's Board. (Call 775-688-1141 or 775-486-1100 to obtain certification information from the State Contractors Board). Contractors who do not submit a preference certificate at the time of their bid are presumed to have wished not to exercise the benefit of their preference, or do not possess the certificate of eligibility.

To the extent Contractor has sought, qualified and receives a bidding preference on this project, pursuant to Nevada Revised Statutes Chapter 338, Contractor acknowledges and agrees that the following requirements will be adhered to, documented and attained for the duration of the Project:

1. At least 50 percent of the workers employed on the Project (including subcontractors) hold a valid driver's license or identification card issued by the Nevada Department of Motor Vehicles;
2. All vehicles used primarily for the public work will be (a) registered and (where applicable) partially apportioned to Nevada; or (b) registered in Nevada; and
3. The Contractor shall maintain and make available for inspection within Nevada all payroll records

General Conditions



related to the Project.

Contractor recognizes and accepts that failure to comply with any requirements herein shall be a material breach of the contract and entitle the City of Sparks to liquidated damages in the amount set by statute. In addition, the Contractor recognizes and accepts that failure to comply with any requirements herein may lose its certification for a preference in bidding and/or its ability to bid on any contracts for public works pursuant to NRS Chapter 338.

To the extent Contractor has sought, qualified and receives a bidding preference, and this project has a value of over \$250,000 pursuant to Nevada Revised Statutes Chapter 338, each contract between the contractor, applicant or design-build team and a subcontractor must provide for the apportionment of liquidated damages assessed pursuant to this section if a person other than the Contractor was responsible for the breach of a contract for a public work caused by a failure to comply with a requirement of Items 1-3 within this section. The apportionment of liquidated damages must be in proportion to the responsibility of each party for the breach.

This section shall not be applicable for projects in which some or all of the funding comes from Federal sources.

34. Tie Bids:

Should identical low, responsive and responsible bids be received from two bidders, the City of Sparks Purchasing Manager shall notify all parties involved in the tie and may at his option utilize a coin-flip to determine the low bidder who shall be recommended for award. Or;

Should there be three or more low, responsive and responsible tie bids the Purchasing Manager shall exercise the following tie breaking method, unless another alternative is apparent and prudent: The City of Sparks Purchasing Manager shall set a mutually agreed upon time where, in his office, he shall shuffle a new deck of playing cards and have each bidder's representative cut the cards. The tie bidder who cuts the highest card (with Ace high) shall be recommended for bid award.

35. Appeals/Protests – Bids Only (Not Applicable to Request for Proposals):

A person who submits a bid on a contract may, after the bids are opened and within 5 business days after the date the "Recommendation to Award" is issued by the City, unless otherwise stated in the Special Conditions, file a notice of protest regarding the awarding of the contract. The City's "Recommendation to Award" will be dated and posted on the City's public website within the area where bid notices and bid re-caps are posted (Currently: <http://www.cityofsparks.us/bids>).

- (a) A notice of protest must include a written statement setting forth with specificity the reasons the person filing the notice believes the applicable provisions of law were violated.
- (b) A person filing a notice of protest may be required by the governing body or its authorized representative, at the time the notice of protest is filed, to post a bond with a good and solvent surety authorized to do business in this State or submit other security, in a form approved by the governing body or its authorized representative, to the governing body or its authorized representative who shall hold the bond or other security until a determination is made on the protest. A bond posted or other security submitted with a notice of protest must be in an amount equal to the lesser of:
 - (1) Twenty-five percent of the total value of the bid submitted by the person filing the notice of protest;
 - or
 - (2) Two hundred fifty thousand dollars (\$250,000).

General Conditions



- (c) A notice of protest filed in accordance with the provisions of this section operates as a stay of action in relation to the awarding of any contract until a determination is made by the governing body or its authorized representative on the protest.
- (d) A person who submits an unsuccessful bid may not seek any type of judicial intervention until the governing body or its authorized representative has made a determination on the protest and awarded the contract.
- (e) A governing body or its authorized representative is not liable for any costs, expenses, attorney's fees, loss of income or other damages sustained by a person who submits a bid, whether or not the person files a notice of protest pursuant to this section.
- (f) If the protest is upheld, the bond posted or other security submitted with the notice of protest must be returned to the person who posted the bond or submitted the security. If the protest is rejected, a claim may be made against the bond or other security by the governing body or its authorized representative in an amount equal to the expenses incurred by the governing body or its authorized representative because of the unsuccessful protest. Any money remaining after the claim has been satisfied must be returned to the person who posted the bond or submitted the security.

36. Documentation:

Due to the time constraints that affect contract performance, all required documents, certificates of insurance and bonds shall be provided to the City within ten (10) calendar days following award or date of request by City, whichever is later. Any failure to comply may result in bid being declared non-responsive and rejected, and at City's option, the bid bond may be attached for damages suffered.

37. Discounts:

- (a) Prompt payment discounts will not be considered in evaluating bids for award. However, offered discounts will be taken if payment is made within the discount period, even though not considered in the evaluation of bids.
- (b) In connection with any discount offered, time will be computed from date of delivery and acceptance, or invoice receipt, whichever is later. Payment is deemed to be made for the purpose of earning the discount on the date of mailing of the City check.
- (c) Any discount offered other than for prompt payment should be included in the net price quoted and not included in separate terms. In the event this is not done, the City reserves the right to accept the discount offered and adjust prices accordingly on the Purchase Order.

38. Seller's Invoice:

Invoices shall be prepared and submitted in duplicate to the address shown on the Purchase Order. Separate invoices are required for each Purchase Order. Invoices shall contain the following information: Purchase Order number, item number, description of supplies or services, sizes, unit of measure, quantity, unit price and extended totals.

39. Inspection and Acceptance:

Inspection and acceptance will be at destination unless specified otherwise, and will be made by the City department shown in the shipping address or other duly authorized representative of the City. Until delivery and acceptance, and after any rejection, risk of loss will be on the bidder unless loss results from negligence of the City.



40. Lost and Damaged Shipments:

Risk of loss or damage to items prior to the time of their receipt and acceptance by the City is upon the bidder. The City has no obligation to accept damaged shipments and reserves the right to return at the bidder's expense damaged merchandise even though the damage was not apparent or discovered until after receipt of the items.

41. Late Shipments:

Bidder is responsible to notify the City department receiving the items and the Purchasing Manager of any late or delayed shipments. The City reserves the right to cancel all or any part of an order if the shipment is not made as promised.

42. Document Ownership:

All technical documents and records originated or prepared pursuant to this contract, including papers, reports, charts, and computer programs, shall be delivered to and become the exclusive property of the City and may be copyrighted by the City. Bidder assigns all copyrights to City by undertaking this agreement.

43. Advertisements, Product Endorsements:

City employees and agencies or organizations funded by the City of Sparks are prohibited from making endorsements, either implied or direct, of commercial products or services without written approval of the City Manager. No bidder may represent that the City of Sparks has endorsed their product or service without prior written approval.

44. Vendor Workplace Policies

No Vendor providing a service, program or activity to the public on behalf of the City shall discriminate against any person because of sex, race, color, creed, national origin or disability. Vendor, if providing a service, program or activity to the public on behalf of the City, shall comply with the Americans with Disability Act and City's policies pursuant thereto when providing said service, program or activity.

The City of Sparks is an Affirmative Action/Equal Opportunity Employer. Bidders shall be cognizant of the requirements for compliance with Executive Order 11246, entitled "Equal Employment Opportunity" as amended by Executive Order 11375 and as supplemented in regulations of the U.S. Department of Labor (41 CFR part 60).

45. Business License Requirement:

All companies doing business with, or within, the City of Sparks are required to obtain and maintain a current business license from the City of Sparks prior to the commencement of work per Sparks Municipal Code Section 5.08.020A. Bidder(s) awarded a contract resulting from this bid shall be required to obtain a current business license if they do not already possess one.

46. City Provisions to Prevail:

Except as indicated in the specifications, the City's standard General Conditions shall govern any contract award. Any standard terms and conditions of bidder submitted by bidder shall not be acceptable to City unless expressly agreed to by the City. The City reserves the right to reject bidder's bid as non-responsive, to consider the bid without bidder's standard terms and conditions, or to require bidder to delete reference to such, as a condition of evaluation or award of the bid. If, after award of contract, bidder (contract vendor) provides materials or services accompanied by new or additional standard terms or conditions, they too shall be considered void and City may require deletion as a further condition of performance by vendor.

General Conditions



47. Invalid Provisions:

In the event that any one or more of the provisions of this agreement shall be found to be invalid, illegal or unenforceable, the remaining provisions shall remain in effect and be enforceable.

48. Amendments and Modifications:

The Purchasing Manager may at any time, by written order, and without notice to the sureties, make a modification to the contract or an amendment to the Purchase Order, within the general scope of this contract, in (1) quantity of materials or service, whether more or less; (2) drawings, designs, or specifications, where the supplies to be furnished are to be specially manufactured for the City; (3) method of shipment or packing; and (4) place of delivery. If any such change causes an increase or decrease in the cost or the time required for the performance of this contract, an equitable adjustment shall be made by written modification of the contract or amendment to the Purchase Order. Any claim by the bidder for adjustment under this clause must be asserted within 30 calendar days from the notification date.

49. Assignment:

Vendor shall not assign or delegate duties or responsibilities under this agreement, in whole or in part, without prior written approval of the City.

50. Disputes After Award:

Except as otherwise provided in these provisions, any dispute concerning a question of fact arising under this contract which is not disposed of by agreement shall be decided by the Purchasing Manager, who shall reduce this decision to writing and mail a copy to the bidder. The decision of the Purchasing Manager shall be final and conclusive, unless bidder requests arbitration within ten (10) calendar days. Pending final decision of a dispute, the bidder shall proceed diligently with the performance of the contract and in accordance with the Purchasing Manager's decision.

51. Arbitration after Award:

Any and all disputes, controversies or claims arising under or in connection with the contract resulting from this bid, including without limitation, fraud in the inducement of this Contract, or the general validity or enforceability of this Contract, shall be governed by the laws of the State of Nevada without giving effect to conflicts of law principles, may be submitted to binding arbitration before one arbitrator, and shall be conducted in accordance with the Commercial Arbitration Rules of the American Arbitration Association in a private manner in Washoe County, Nevada. This award shall be final and judgment may be entered upon it in any court having jurisdiction thereof. In reaching this final award, the arbitrator shall have no authority to change or modify any provision of this Contract. All other expenses of arbitration shall be borne equally by the parties. All fees, including legal fees, shall be borne by the party who incurred them. All costs of enforcement shall be borne by the losing party. Each party shall have the right to discovery in accordance with the Nevada Rules of Civil Procedure.

52. Lawful Performance:

Vendor shall abide by all Federal, State and Local Laws, Ordinances, Regulations, and Statutes as may be related to the performance of duties under this agreement. In addition, all applicable permits and licenses required shall be obtained by the vendor, at vendor's sole expense.

53. Annual Appropriation of Funds:

Multi-year term supply and service contracts and leases are subject to annual appropriation of funds by the City Council. The City plans and makes appropriations to the City Budget with respect to a fiscal year that starts July 1st and ends June 30th of each year. Payments made under term contracts and leases are considered items

General Conditions



of current expense. Purchase Orders are funded when issued; therefore, they are current expense items and are not subject to any subsequent appropriation of funds.

Continuance of a multi-year contract beyond the limits of funds available shall be contingent upon appropriation of the requisite funds in the ensuing fiscal year and the termination of this contract due to lack of appropriation shall be without penalty.

54. Extension:

When in the City's best interest, this agreement may be extended on a daily, month-to-month, or annual basis by mutual agreement of both parties. Services and/or materials received under an extension shall be in accordance with pricing, terms, and conditions, as described herein.

55. Termination:

The City may terminate this agreement and be relieved of any consideration to the vendor should vendor fail to perform in the manner required. Furthermore, the City may terminate this agreement for any reason without penalty upon giving thirty (30) days written notice to the vendor. In the event of termination, the full extent of City liability shall be limited to an equitable adjustment and payment for materials and/or services authorized by and received to the satisfaction of the City prior to termination.

56. Venue:

This agreement shall be governed by and interpreted according to the laws of the State of Nevada, and venue for any proceeding shall be in Washoe County.

Special Conditions and Specifications (Specific to Project)

In instances where the Special Conditions conflict with the General Conditions, the Special Conditions will prevail with respect to that instance or item(s).

**SPECIAL PROVISIONS
TMWRF ALARM UPGRADE
BID #22/23-010 / PWP #WA-2023-078**

These Special Provisions supplement and modify the "Standard Specifications for Public Works Construction" Latest Edition, and adopted by the City of Sparks, Nevada. All the requirements and provisions of said Standard Specifications shall apply except where modified by the plans and these Special Provisions.

SECTION 1: SCOPE OF WORK

Work Scope: This project includes, but is not limited to upgrading the existing alarm system at the Truckee Meadows Water Reclamation Facility (TMWRF) and includes but is not limited to, removal of the old Alarm system and associated wiring, Installing new wiring, conduit and alarms along with any other miscellaneous associated work activities necessary to complete the project as stated in the plans and bid documents. The location of the work is at TMWRF 8500 Cleanwater Way located within the City of Sparks, Washoe County, Nevada, and is more specifically designated in the plans for this project

SECTION 2: SPECIAL PROVISIONS

The requirements set forth in these "Special Provisions" shall be used in addition to those set forth in "Standard Specifications for Public Works Construction".

SECTION 3: PREBID CONFERENCE

A Pre-Bid conference will be held at TMWRF (8500 Cleanwater way Reno Nv 89502) on Wednesday November 2, 2022 at 10:00 a.m.

SECTION 4: NOTICE TO PROCEED AND TIME SCHEDULE

An official "Notice to Proceed" specifying the date by which construction operations shall be started will be issued in writing and delivered to the CONTRACTOR by the City at the Pre-construction Meeting. Contract time will begin on the date specified in the "Notice to Proceed", unless operations begin at an earlier date, in which case the date that such operations begin will apply. The CONTRACTOR shall immediately begin and diligently prosecute the work to completion. The CONTRACTOR shall obligate himself to complete the work within the stated time limits. All work described in this document shall be completed within **one hundred eighty (180) calendar days** from the time of issuance of the Notice to Proceed.

SECTION 5: LIQUIDATED DAMAGES

In case all work called for under the contract is not completed before or upon the expiration of the time limits set forth above, it is agreed by the parties to the contract that damage will be sustained by the City and that it will be impracticable to determine accurately the actual damage the City will sustain in the event of any such delay. Therefore, the CONTRACTOR shall pay to the City:

- One Thousand DOLLARS (\$1000.00) for each and every calendar day delay after the one hundred eighty (180) calendar day completion time limit.

In finishing the work in excess of the dates prescribed and the City shall further have the right to charge to the CONTRACTOR, his heirs, assigns or sureties and to deduct from the final payment for the work, all or any part as it may deem proper of the actual cost of which are directly chargeable to the contract and which accrue during the period of such extensions, except that the cost of the final surveys and preparation of final estimate shall not be included in such charges.

The City may deduct this amount from any money due or that may become due the CONTRACTOR under the contract. This payment shall not be considered as a penalty, but as liquidated damages suffered by the City on account of the failure of the CONTRACTOR to complete the work within the time limit of the contract.

SECTION 6: EXCUSABLE DELAYS

The CONTRACTOR shall not be assessed with liquidated damage nor the cost of the Project Manager and inspection during any delay in the completion of the work caused by acts of God, the public enemy, fire, floods, epidemics, quarantine restrictions, strikes, freight embargoes, unusually severe weather, or due to such causes, provided that the CONTRACTOR shall within ten (10) days from the beginning of such delay notify the Project Manager in writing of the causes of delay. The Project Manager's findings of the facts thereon shall be final and conclusive.

SECTION 7: INTENT OF THE PLANS AND SPECIFICATIONS

The intent of the plans and specifications is to prescribe a complete outline of work, which the CONTRACTOR undertakes to do in full compliance with the contract.

The CONTRACTOR shall furnish all required materials, equipment, tools, labor and incidentals, unless otherwise provided in the contract and shall include the cost of these items in the contract unit prices for the several units of work. All items of work called for on the plans or in the specifications and not included as a separate item in the proposal shall be considered as incidental to the other items listed in the proposal and the payment for such incidental items shall be considered as included in the contract unit prices bid.

SECTION 8: AUTHORITY OF THE PROJECT MANAGER AND INSPECTOR

All work shall be done under the supervision of the Project Manager acting on behalf of the City. The Project Manager shall decide all questions that arise as to the quality and acceptability of materials furnished, work performed, manner of performance, rates of progress, interpretation of the plans and specifications, acceptable fulfillment of the contract and compensation under the specifications. He shall determine the amount of work performed and materials furnished, and his decision and estimate shall be final. The Project Managers estimate shall be "condition precedent" to the right of the CONTRACTOR to receive money due him under the contract. The Project Manager does not have authority to authorize changes in plans and specifications without prior written approval of the Engineer.

The City shall provide an inspector who will represent the City and shall make inspections of all work, sample and test materials and do such other work relative to supervision of the project as he may be assigned by the City. All instructions given by the inspector are subject to approval by the Project Manager and the Engineer. The Contractor shall take direction only from the Project Manager and Inspector.

SECTION 9: CHANGE ORDERS

The City of Sparks reserves the right to make alterations or supplements to the Contract. Change Order Forms are required for all changes in decreases and/or increases of quantities and/or dollar amount changes in accordance with the Standard Specifications and required by the City of Sparks.

SECTION 10: COOPERATION WITH OTHER CONTRACTORS

The CONTRACTOR shall coordinate with other CONTRACTOR's who may be employed by the City or private developers on construction of other work adjacent to or in the proximity of the location of the project.

SECTION 11: DISPOSAL OF EXCESS AND WASTE MATERIALS

Trash and construction debris during construction shall become the property of the CONTRACTOR and shall be removed by the CONTRACTOR and shall be legally disposed of offsite in accordance with all federal, state and local regulations.

SECTION 12: LIMITS OF CONTRACTOR'S OPERATIONS

If the CONTRACTOR's operations result in damage to any publicly or privately owned, the CONTRACTOR shall, at his expense, repair such damage or indemnify the owner of the damaged property.

At no time will the CONTRACTOR be allowed to store debris or materials on the public streets overnight. Materials will be allowed to be stored onsite with the approval and direction of the City Project Representative.

SECTION 13: MEASUREMENT FOR PAYMENT

The total amount payable under this contract shall be determined by the percentage of the work performed and determined from prices as furnished by the CONTRACTOR in the schedule of prices contained in his proposal. The percentage of work performed shall be determined by the Project Manager. Monthly billing shall be broken out to reflect each bid item as provided in this bid.

SECTION 14: PRECONSTRUCTION CONFERENCE

After the execution of the contract, but prior to the commencement of any work, a preconstruction conference between the CONTRACTOR and the city will be held at a mutually acceptable time and place.

SECTION 15: WORKING DAY, WORK HOURS, SATURDAY, SUNDAY, HOLIDAY AND OVERTIME WORK

The CONTRACTOR's normal working hours shall be from 7:00 A.M. until 7:00 P.M., Monday through Friday unless otherwise required by these specifications or approved in writing by the City Project Manager when requested in writing by the CONTRACTOR. The CONTRACTOR shall not commence Construction operations before seven o'clock (7:00 A.M. Pacific Time) each working day except as directed by the City Project Manager and as specified herein.

The CONTRACTOR shall not perform any contract work on Saturday, Sunday, legal Holidays and outside of the twelve (12) hours available during a regular working day except as directed and/or approved by the city Project Manager and as specified herein.

If the CONTRACTOR plans to perform work outside of the twelve (12) hours available during a regular working day, the CONTRACTOR shall first obtain approval from the City Project Manager at least twenty-four (24) hours prior to commencing such overtime work. If the CONTRACTOR plans to perform work on Saturday or Sunday, he/she shall obtain approval by the Thursday prior to work on the Saturday or Sunday for which work is planned. If the CONTRACTOR plans to perform work on a legal Holiday, he/she shall first obtain approval from the City Project Manager at least 48 hours in advance.

The CONTRACTOR shall be charged for all of City of Sparks' employee(s) time spent for overtime, Saturday, Sunday or Holiday work, based on the employee's hourly rate, plus benefits. The CONTRACTOR will be notified of the costs incurred and if the payment is not made, such costs will be deducted from any payment due to the CONTRACTOR.

The City of Spark recognizes the following legal Holidays:

January 1	New Year's Day
3 rd Monday in January	Martin Luther King, Jr. Birthday
3 rd Monday in February	President's Day
Last Monday in May	Memorial Day
June 19	Juneteenth Day
July 4	Independence Day
1 st Monday in September	Labor Day
Last Friday in October	Nevada Day
November 11	Veteran's Day
4 th Thursday in November	Thanksgiving Day
4 th Friday in November	Family Day (day after Thanksgiving)
December 25	Christmas Day

SECTION 16: SUBMITTALS

Submittals for the following items shall be provided at the time of the preconstruction meeting. Submittals shall be submitted by electronic pdf.

- Construction Schedule and a plan for completing the alarm system upgrade within the one hundred eighty (180) calendar days.
- All alarm components

SECTION 17: CLEANUP AND DUST CONTROL

At completion of the workday, the Contractor shall clean up all waste material, excess materials, and trash.

SECTION 18: FORCE ACCOUNT

Force Account items as defined by the City of Sparks will be additions to the contract arising within the course and scope of the contract for incidental costs due to unforeseen circumstances.

Any force account items shall be adjusted daily upon report sheets, furnished to the Project Manager by the CONTRACTOR and signed by both parties. These daily reports shall thereafter be considered the true record of force account items for unforeseen circumstances. No additional incidental work shall be performed or made except upon a written order from the Project Manager.

SECTION 19: INSURANCE AND INDEMNIFICATION

The CONTRACTOR shall not commence any work nor permit a Subcontractor to commence work on this project until satisfactory proof has been presented to the City of Sparks Purchasing Division that all insurance requirements as outlined by the City have been met.

The CONTRACTOR shall provide and maintain, during the effective life of the awarded contract, Comprehensive General Liability Insurance covering the CONTRACTOR and the City of Sparks.

SECTION 20: SAFETY PROGRAM AND CERTIFICATIONS

Successful bidder will provide a current copy of their Safety Program along with any Safety Training Certifications applicable to the completion of the proposed work prior to commencement of on-site work. This may include copies of OSHA 10 and 30 Cards, Confined Space, Silica, Powered Industrial Truck, Crane Training or other task specific training required by OSHA for the work to be performed on this

contract. Due to the potential for Hazardous Environments commonly found in Wastewater Treatment Plants, Contractors are required to supply their onsite staff with a 4 gas monitor capable of reading at a minimum, Carbon Monoxide (CO), Oxygen (O₂), Hydrogen Sulfide (H₂S) and Lower Explosive Limit (LEL).

**BID ITEM CLARIFICATIONS
TMWRF ALARM UPGRADE
BID #22/23-010 / PWP #WA-2023-078**

Bid Item 1: Upgrade and replacement of the alarm system, which includes demolition and removal of the old alarm system and installation of the new alarm system

The lump sum unit price bid for this item shall include but is not limited to upgrading the existing alarm system at the Truckee Meadows Water Reclamation Facility (TMWRF), removal of the old alarm system and associated wiring; installing new wiring, conduit, and alarms along with any other miscellaneous associated work, as shown on the plans and bid specifications, including all labor, equipment, materials and all necessary incidentals. This item payment shall be on a per lump sum basis.

See Plans and Specifications.

Bid Item 2: Force Account

A force account has been established for this project and shall be included in each bid. The force account will be utilized only as necessary for extra work authorized and approved in advance by the City of Sparks representative as per Special Provision Section 18.

TMWRF Alarm Upgrade Design Specs

Issued for Bid July 2022

<u>Section No.</u>	<u>Title</u>
01300 –	Contractor Submittals
01672 –	Asset Identification and Labeling
01756 –	Acceptance Testing and Facility Start Up
01820 –	Training and Demonstration Period
01830 –	Operation and Maintenance Data
13700 –	Alarms and Paging Equipment
16000 –	Electrical General Provisions
16110 –	Raceways, Boxes, Fittings and Supports
16120 –	Wires and Cables (600V Maximum)
16600 –	Underground System
16950 –	Electrical System Testing and Settings



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SECTION 01300

CONTRACTOR SUBMITTALS

PART 1 GENERAL

1.1 THE SUMMARY

- A. Wherever submittals are required by the Contract Documents, submit them to the ENGINEER.
- B. Within 7 Days after the date of commencement as stated in the Notice to Proceed, submit the following items for review:
 - 1. Submittal Schedule
 - a. Submit a preliminary schedule of Shop Drawings, Samples, and proposed Substitutes ("or equal") submittals listed in the Bid.
 - b. Base the schedule of submittals on CONTRACTOR's priority, planned construction sequence and schedule, long-lead items, and size of submittal package.
 - c. Allow time for resubmittals.
 - 2. Submit a list of permits and licenses the CONTRACTOR shall obtain, indicating the agency required to grant the permit and the expected date of submittal for the permit and required date for receipt of the permit.

1.2 PRECONSTRUCTION CONFERENCE SUBMITTALS

- A. At the preconstruction conference, submit the following items to the ENGINEER for review:
 - 1. a revised schedule of Shop Drawings, Samples, and proposed Substitution ("or-equal") submittals listed in the Bid;
 - 2. a list of permits and licenses the CONTRACTOR shall obtain, indicating the agency required to grant the permit, the expected date of submittal for the permit, and required date for receipt of the permit;

1.3 SHOP DRAWINGS

- A. Wherever called for in the Contract Documents or where required by the ENGINEER, furnish one copy plus one reproducible copy of each Shop Drawing submittal.
- B. Shop Drawings may include detail design calculations, shop-prepared drawings, fabrication and installation drawings, erection drawings, lists, graphs, catalog sheets, data sheets, and similar items.
- C. Whenever the CONTRACTOR is required to submit design calculations as part of a submittal, such calculations shall bear the signature and seal of an engineer registered in the appropriate branch and in the state wherein the Project is located, unless otherwise indicated.
- D. Transmittal Form
 - 1. Shop Drawing submittals shall be accompanied by the ENGINEER's standard submittal transmittal form, a reproducible copy of which is available from the ENGINEER.

2. A submittal without the form, or where applicable items on the form have not been completed, will be returned for resubmittal.

E. Organization

1. Use a single submittal transmittal form for each technical specification Section or item or class of material or equipment for which a submittal is required.
2. A single submittal covering multiple Sections will not be accepted, unless the primary specification references other Sections for components: For example, if a pump Section references other Sections for the motor, shop-applied protective coating, anchor bolts, local control panel, and variable frequency drive, a single submittal would be accepted, whereas a single submittal covering vertical turbine pumps and horizontal split-case pumps would not be accepted.
3. On the transmittal form, index the components of the submittal and insert tabs in the submittal to match the components.
4. Relate the submittal components to specification paragraph and subparagraph, Drawing number, detail number, schedule title, room number, or building name, as applicable.
5. Unless otherwise indicated, match terminology and equipment names and numbers used in the submittals with those used in the Contract Documents.

F. Format

1. Minimum sheet size shall be 8-1/2 inches by 11 inches, and maximum sheet size shall be 24 inches by 36 inches.
2. Number every page in a submittal in sequence.
3. Collate and staple or bind, as appropriate, each copy of a submittal; the ENGINEER will not collate sheets or copies.
4. Where product data from a manufacturer is submitted, clearly mark which model is proposed, with complete pertinent data capacities, dimensions, clearances, diagrams, controls, connections, anchorage, and supports.
5. Present a sufficient level of detail for assessment of compliance with the Contract Documents.
6. Numbering
 - a. Assign to each submittal a unique number.
 - b. Number the submittals sequentially, with the submittal numbers clearly noted on the transmittal.
 - c. Assign original submittals a numeric submittal number followed by a decimal point and a numeric digit in order to distinguish between the original submittal and each resubmittal: For example, if submittal "25.1" requires a resubmittal, the first resubmittal will bear the designation "25.2" and the second resubmittal will bear the designation "25.3," and so on.

- G. Disorganized submittals that do not meet the requirements of the Contract Documents will be returned without review.

H. ENGINEER's Review

1. Except as otherwise indicated, the ENGINEER will return prints of each submittal to the CONTRACTOR with comments noted thereon, within 30 Days following receipt by the ENGINEER.
2. It is considered reasonable that the CONTRACTOR shall make a complete and acceptable submittal to the ENGINEER by the first resubmittal on an item.
3. The OWNER reserves the right to withhold monies due to the CONTRACTOR to cover additional costs of the ENGINEER's review beyond the first resubmittal.
4. The ENGINEER'S maximum review period for each submittal or resubmittal will be 30 Days; thus, for a submittal that requires 2 resubmittals before it is complete, the maximum review period could be 90 Days.

I. If a submittal is returned to the CONTRACTOR marked "NO EXCEPTIONS TAKEN," formal revision and resubmission will not be required.

J. If a submittal is returned marked "MAKE CORRECTIONS NOTED," the CONTRACTOR shall make the corrections on the submittal, but formal revision and resubmission will not be required.

K. Resubmittals

1. If a submittal is returned marked "AMEND-RESUBMIT," the CONTRACTOR shall revise the submittal and resubmit the required number of copies.
2. Resubmittal of portions of multi-page or multi-drawing submittals will not be accepted: For example, if a Shop Drawing submittal consisting of 10 drawings contains one drawing noted as "AMEND-RESUBMIT," the submittal as a whole is deemed "AMEND-RESUBMIT," and 10 drawings are required to be resubmitted.
3. Every change from a submittal to a resubmittal or from a resubmittal to a subsequent resubmittal shall be identified and flagged on the resubmittal.

L. Rejected Submittals

1. If a submittal is returned marked "REJECTED-RESUBMIT," it shall mean either that the proposed material or product does not satisfy the specification, the submittal is so incomplete that it cannot be reviewed, or is a substitution request not submitted.
2. In the latter case, the CONTRACTOR shall submit the substitution request.
3. The resubmittal of rejected portions of a previous submittal will not be accepted.

M. The fabrication of an item may commence only after the ENGINEER has reviewed the pertinent submittals and returned copies to the CONTRACTOR marked either "NO EXCEPTIONS TAKEN" or "MAKE CORRECTIONS NOTED."

N. Corrections indicated on submittals shall be considered as changes necessary to meet the requirements of the Contract Documents and shall not be taken as changes to the contract requirements.

O. Review by CONTRACTOR

1. Submittals shall be carefully reviewed by an authorized representative of the CONTRACTOR prior to submission to the ENGINEER.
2. Each submittal shall be dated and signed by the CONTRACTOR as being correct and in strict conformance with the Contract Documents.
3. In the case of Shop Drawings, each sheet shall be so dated and signed.
4. Any deviations from the Contract Documents shall be noted on the transmittal sheet.
5. The ENGINEER will only review submittals that have been so verified by the CONTRACTOR.
6. Non-verified submittals will be returned to the CONTRACTOR without action taken by the ENGINEER, and any delays caused thereby shall be the total responsibility of the CONTRACTOR.

P. Conformance

1. Corrections or comments made on the CONTRACTOR's Shop Drawings during review shall not relieve the CONTRACTOR from compliance with Contract Drawings and Specifications.
2. A lack of comments made on the CONTRACTOR's Shop Drawings during review shall not relieve the CONTRACTOR from compliance with Contract Drawings and Specifications.
3. Review is for conformance to the design concept and general compliance with the Contract Documents only.
4. The CONTRACTOR shall be responsible for confirming and correlating quantities and dimensions, fabrication processes and techniques, coordinating WORK with the trades, and satisfactory and safe performance of the WORK.

1.4 SAMPLES

A. Quantity

1. The CONTRACTOR shall submit the number of samples indicated by the Specifications.
2. If the number is not indicated, submit not less than 3 samples.
3. Where the quantity of each sample is not indicated, submit such quantity as necessary for proper examination and testing by the methods indicated.

B. Identification and Distribution

1. Individually and indelibly label or tag each sample, indicating the salient physical characteristics and the manufacturer's name.
2. Upon acceptance by the ENGINEER, one set of the samples will be stamped and dated by the ENGINEER and returned to the CONTRACTOR, one set of samples will be retained by the ENGINEER, and one set shall remain at the Site in the ENGINEER's field office until completion of the WORK.

C. Selection

1. Unless otherwise indicated, the ENGINEER will select colors and textures from the manufacturer's standard colors and standard materials, products, or equipment lines.
2. If certain samples represent non-standard colors, materials, products, or equipment lines that will require an increase in Contract Times or Price, the CONTRACTOR shall clearly state so on the transmittal page of the submittal.

D. The CONTRACTOR shall schedule sample submittals such that:

1. Sample submittals for color and texture selection are complete so the ENGINEER has 45 Days to assemble color panels and select color- and texture-dependent products and materials without delay to the construction schedule; and,
2. After the ENGINEER selects colors and textures, the CONTRACTOR has sufficient time to provide the products or materials without delay to the construction schedule.
3. The Contract Times will not be extended for the CONTRACTOR's failure to allow enough review and approval or selection time, failure to submit complete samples requiring color or texture selection, or failure to submit complete or approvable samples.

1.5 TECHNICAL MANUAL

- A. The CONTRACTOR shall submit technical operation and maintenance information for each item of mechanical, electrical, and instrumentation equipment in an organized manner in the Technical Manual.
- B. The manual shall be written such that it can be used and understood by the OWNER's operation and maintenance staff.

C. Categories

1. The Technical Manual shall be subdivided first by Specification Section number; second, by equipment item; and last, by "Category." The following "Categories" shall be addressed (as applicable):
 - a. Category 1 - Equipment Summary
 - i. Summary: A table shall indicate the equipment name, equipment number, and process area in which the equipment is installed.
 - ii. Form: The ENGINEER will supply an Equipment Summary Form for each item of mechanical, electrical, and instrumentation equipment in the WORK. The CONTRACTOR shall fill in the relevant information on the form and include it in Part 1.
 - b. Category 2 - Operational Procedures
 - i. Procedures: Manufacturer-recommended procedures on the following shall be included in Part 2:
 - Installation
 - Adjustment
 - Startup

- Location of controls, special tools, equipment required, or related instrumentation needed for operation
 - Operation procedures
 - Load changes
 - Calibration
 - Shutdown
 - Troubleshooting
 - Disassembly
 - Reassembly
 - Realignment
 - Testing to determine performance efficiency
 - Tabulation of proper settings for pressure relief valves, low and high pressure switches, and other protection devices
 - List of all electrical relay settings including alarm and contact settings
- c. Category 3 - Preventive Maintenance Procedures
- i. Procedures: Preventive maintenance procedures shall include manufacturer-recommended procedures to be performed on a periodic basis, both by removing and replacing the equipment or component, and by maintaining the equipment in place.
 - ii. Schedules: Recommended frequency of preventive maintenance procedures shall be included. Lubrication schedules, including lubricant SAE grade, type, and temperature ranges, shall be covered.
- d. Category 4 - Parts List
- i. Parts List: A complete parts list shall be furnished, including a generic description and manufacturer's identification number for each part. Addresses and telephone numbers of the nearest supplier and parts warehouse shall be included.
 - ii. Drawings: Cross-sectional or exploded view drawings shall accompany the parts list. Part numbers shall appear on the drawings with arrows to the corresponding part.
- e. Category 5 - Wiring Diagrams
- i. Diagrams: Category 5 shall include complete internal and connection wiring diagrams for electrical equipment items.
- f. Category 6 - Shop Drawings
- i. Drawings: This category includes approved shop or fabrication drawings with ENGINEER comments and corrections incorporated, complete with dimensions.
- g. Category 7 - Safety
- i. Procedures: This category describes the safety precautions to be taken when operating and maintaining the equipment or working near it.
- h. Category 8 - Documentation:

- i. Equipment warranties, affidavits, certifications, calibrations, laboratory test results, etc. required by the Technical Specifications shall be placed in this category.

D. Format

1. Bind each Technical Manual in standard size 3-ring hardcover binders, labeled on the spine and cover with Project name, OWNER's project number, Specification Section number, equipment name, and equipment identification number
2. Each Binder shall contain its own detailed table of contents at the front, plus a summary level table of contents information for the other binders in a multi-binder set.
3. Documents in binders shall be 3-hole punched, with no text punched out, and pages larger than 8-1/2 by 11 shall be folded to 8-1/2 by 11 size.
4. Provide a CD with electronic files with each final set of Technical Manuals, as follows:
 - a. AutoCad, version 2019;
 - b. Adobe Acrobat portable document format (PDF) or other software required by the Specifications; and,
 - c. Manufacturer literature in Adobe Acrobat portable document format (PDF).

E. Review Process

1. Furnish 3 draft Technical Manuals for each Specification Section that requires a manual.
2. The ENGINEER will retain one copy, will forward one copy to the OWNER, and will return one copy to the CONTRACTOR with review comments.
3. Incorporate comments into the draft and submit 5 identical copies of the final manual for acceptance.

F. Schedule

G. Submittal and Corrections

1. Except as otherwise indicated, submit the manuals in final form to the ENGINEER not later than the 75 percent of construction completion Time.
2. Discrepancies found by the ENGINEER shall be corrected within 30 Days from the Date of written notification by the ENGINEER.

H. Submittal and Corrections

1. The WORK under this Contract involves start-up and commissioning of equipment in multiple areas of the facility at independent times within the Project Schedule.
2. The manuals shall be completed for each piece of equipment prior to training of the OWNER's personnel.
3. Except as otherwise indicated, submit the manuals for review in final form a minimum of 30 Days prior to the start of performance testing for each piece of equipment.

4. Discrepancies found by the ENGINEER shall be corrected within 30 Days from the Date of written notification by the ENGINEER.

I. Manuals that are incomplete or unacceptable at the schedule criterion above will constitute sufficient justification for the OWNER to retain the amount in Paragraph "Technical Manual Submittals", from any monies due the CONTRACTOR.

1.6 SPARE PARTS LIST

A. General

1. Furnish to the ENGINEER 5 identical sets of spare parts information for electrical, and instrumentation equipment.
2. The spare parts list shall include those spare parts that each manufacturer recommends to be maintained by the OWNER in inventory.

B. Sources and Pricing

1. The spare parts list shall include a current list price of each spare part.
2. Each manufacturer or supplier shall indicate the name, address, and telephone number of its nearest outlet of spare parts, to assist the OWNER in ordering.

C. Format

1. Cross-reference the spare parts lists to the equipment numbers designated in the Contract Documents.
2. The spare parts lists shall be bound in standard-size, 3-ring, loose-leaf, vinyl plastic, hard-cover binders suitable for bookshelf storage.
3. The binder ring size shall not exceed 2-1/2 inches.
4. Each copy of the spare parts lists shall be accompanied by a CD containing the lists in electronic format, in files created under Microsoft Office 365.

1.7 AS-BUILT DRAWINGS

A. On-Site Drawings Set

1. Maintain one set of Drawings at the Site for the preparation of as-built drawings.
2. On this set, mark every project condition, location, configuration, and any other change or deviation which may differ from the Contract Drawings at the time of award, including buried or concealed construction and utility features that are revealed during the course of construction.
3. Give special attention to recording the horizontal and vertical location of buried utilities that differ from the locations indicated, or that were not indicated on the Contract Drawings.
4. Supplement the as-built drawings by any detailed sketches as necessary or as directed, in order to fully indicate the WORK as actually constructed.

5. The as-built drawings are the CONTRACTOR's representation of as-built conditions, shall include revisions made by addenda and change orders, and shall be maintained up-to-date during the progress of the WORK.
6. Use red ink for alterations and notes.
7. Notes shall identify relevant Change Orders by number and date.

B. Submittal

1. Submit paper copies of the as-built drawings on the 20th Day of every third month after the month in which the Notice to Proceed is given, as well as at completion of the WORK.
2. Failure to submit complete as-built drawings on or before the 20th Day will enact the liquidated damages clause for interim record drawing submittals described in Article 3 of the Agreement.

C. In the case of those drawings that depict the detail requirement for equipment to be assembled and wired in the factory, such as motor control centers and the like, update the as-built drawings by indicating those portions which are superseded by Change Order drawings or final Shop Drawings, and by including appropriate reference information describing the Change Orders by number and the Shop Drawings by manufacturer, drawing, and revision numbers.

D. Unacceptable Drawings

1. Disorganized or incomplete as-built drawings will not be accepted.
2. The CONTRACTOR shall revise them and resubmit within 10 Days.

E. As-built drawings shall be accessible to the ENGINEER during the construction period.

F. Final Payment

1. Final payment will not be acted upon until the as-built drawings have been completed and delivered to the ENGINEER.
2. Up-to-date as-built drawings shall be in the form of a set of prints with carefully plotted information overlaid and an electronic form under Microsoft Office 365, AutoCad Version 2019, or other software required by the Specifications.

G. Information submitted by the CONTRACTOR will be assumed to be correct, and the CONTRACTOR shall be responsible for the accuracy of such information

1.8 QUALITY CONTROL (QC) SUBMITTALS

A. Quality control submittals are defined as those required by the Specifications to present documentary evidence to the ENGINEER that the CONTRACTOR has satisfied certain requirements of the Contract Documents.

B. Unless otherwise indicated, QC submittals shall be submitted:

1. Before delivery and unloading, for the following types of submittals:
 - a. Manufacturers' installation instructions

- b. Manufacturers' and Installers' experience qualifications
 - c. Ready mix concrete delivery tickets
 - d. Design calculations
 - e. Affidavits and manufacturers' certification of compliance with indicated product requirements
 - f. Laboratory analysis results
 - g. Factory test reports
2. Within 30 Days of the event documented for the following types of submittals:
- a. Manufacturers' field representative certification of proper installation
 - b. Field measurement
 - c. Field test reports
 - d. Receipt of permit
 - e. Receipt of regulatory approval
- C. The ENGINEER will record the date that a QC submittal was received and review it for compliance with submittal requirements, but the review procedures above for Shop Drawings and samples will not apply.

1.9 INFORMATIONAL SUBMITTALS

- A. Informational submittals formalize the flow of information between the CONTRACTOR and the ENGINEER.
- B. Electronic forms shall be obtained from the ENGINEER for such purpose.

1.10 CONSTRUCTION PHOTOGRAPHS

A. General

- 1. Furnish construction photographs showing the progress of the WORK.
- 2. A commercial photographer shall take photographs on 35-mm color negative film.
- 3. Place a label the back with the date of photographing, the project title, a short description of what is in the photograph, and the direction the camera is facing.

B. Prints and Negatives

- 1. Starting when the WORK begins and continuing for as long as the WORK is in progress, take not less than 12 exposures at intervals not more than 2 weeks apart, consisting of different subjects or angles or view at different locations of progress on the Site.
- 2. Furnish the prints and negatives to the ENGINEER within 2 weeks after exposure.

3. The prints and negatives shall become sole property of the OWNER upon submittal by the CONTRACTOR.

C. Additional Photographs

1. Upon completion of the WORK but before final payment, an additional 20 exposures, including at least 6 aerial photographs, on minimum 4- by 5-inch color negative film, shall be made of the WORK as requested by the ENGINEER.
2. Submit 2 glossy 8- by 10-inch color prints of each exposure, together with negatives to the ENGINEER for transmittal to the OWNER.

END OF SECTION

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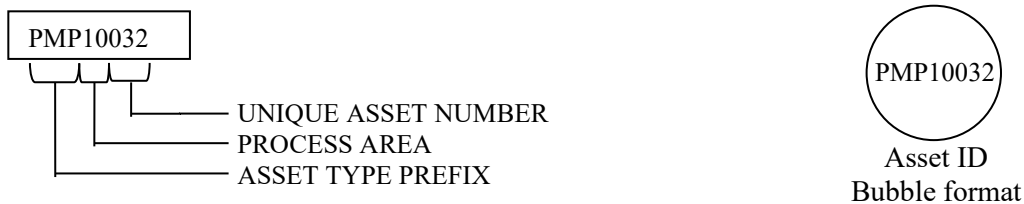
SECTION 01672

ASSET IDENTIFICATION AND LABELING

PART 1 GENERAL

1.1 ASSET NAMING CONVENTION

- A. During the design process, the Consultant shall provide asset identification tag numbers to each piece of equipment or instrument in the design. Asset Identification tag numbers shall be a three-digit letter prefix followed by a five-digit number. The three-digit letter prefix denotes the asset type. The first two digits in the five-digit tag number denote the process area where the asset is located. The following three digits form a unique number for the asset within the process area.
- B. The “TMWRF Asset Prefix Table” contains the allowable three-digit letter prefixes for asset denotation and is located at the end of Section 01672 – Asset Identification and Labeling. In general, the asset prefix should correspond to the asset “type” and not to the asset “function”. For example, a valve should be labeled as a gate valve as opposed to an isolation valve or drain valve.
- C. The Consultant shall use the approved three-digit letter prefixes. If alternative three-digit letter prefixes are proposed for use, they shall follow the format represented in the “TMWRF Asset Prefix Table”, without any conflicts, and shall be submitted to TMWRF staff for approval.
- D. The “TMWRF Process Area Map” contains the established process area denotation for the Facility and is located at the end of Section 01672 – Asset Identification and Labeling. In general, the process area denotation should correspond to the physical location of the asset. The Consultant shall coordinate with TMWRF to determine which process area number(s) are appropriate for project assets. If the project involves a new process at the Facility, TMWRF will determine which process area number(s) shall be assigned to the new process.
- E. The format of the Asset ID number on the design plans, specifications, and asset field tags shall be a three-digit letter prefix (see “TMWRF Asset Prefix Table” for approved prefixes) followed by a five-digit identifier (as described above) with no spaces. A bubble format is also acceptable on drawings or for circular asset field tags. See below for examples of Asset ID formats.



- F. The Consultant shall coordinate with TMWRF to determine which numbers are available within the process areas during the design process.

1.2 ASSET ATTRIBUTE LIST

- A. At the completion of the construction phase of the project, the consultant shall provide a completed Asset Attribute List in excel format. The consultant shall coordinate with TMWRF to obtain a formatted excel template for the Asset Attribute List. It is important that the format of the spreadsheet remain preserved and capable of direct upload to the Facility asset management database. A display of the Asset Attribute List is located at the end of Section 01672 – Asset Identification and Labeling.

- B. The Asset Attribute List must be submitted to TMWRF prior to system startup procedures begin.

1.3 PIPING COLOR CODING REQUIREMENTS

- A. Contractor shall color code pipes according to the designated use of each pipe. The color coding shall be done in accordance with the most current version of the “TMWRF Piping Color Scheme”. The “TMWRF Piping Color Scheme” is located at the end of Section 01672 – Asset Identification and Labeling. Labeling of each pipe shall be done using color coded self-adhesive vinyl tape not less than 3-mil thick by 1-1/2-inches wide. Minimum sizes for lettering and numbering shall comply with ANSI A13.1.

1.4 ASSET FIELD TAG REQUIREMENTS

- A. Consultant shall coordinate with Contractor to furnish and install Asset ID tags conforming to the requirements of this section for each asset identified in the drawings.
- B. Coordinate information to be displayed on field tags with TMWRF prior to purchase of tags.
- C. At a minimum, an asset field tag shall include the Asset ID. Other information including lettering and wording as coordinated with OWNER, recommended by manufacturer, or as required for proper identification and operation/maintenance of electrical system and equipment may be included on field tags.
- D. Install asset tags at locations indicated or at a location for best convenience of viewing without interference with operation and maintenance of equipment. Secure to substrate with fasteners, except use adhesive where fasteners should not or cannot penetrate substrate.
- E. Asset tags shall be either engraved plastic laminate signs or round brass tags.
- F. Engraved Plastic Laminate Signs
 1. Provide engraving stock melamine plastic laminate lamicoïd-type engraved nameplates, complying with FS L P 387, in sizes and thickness indicated, engraved with engraver’s standard letter styles of sizes and wording indicated, black face and white core plies (letter color) except as otherwise indicated, punched for mechanical fastening except where adhesive mounting is necessary because of substrate.
 2. Except as otherwise indicated, provide single line of text, 1/2-inch high lettering on 1-1/2-inch high sign (2-inches high where 2 lines are required), white lettering in black field. Provide text matching terminology and numbering of the Contract documents and Shop Drawings as coordinated with TMWRF.
 3. Thickness: 1/8-inch except as otherwise indicated.
 4. Fasteners: Self-tapping screws of brass, cadmium-plated steel, or stainless steel,
 5. Adhesive: Nameplates shall be bonded using an epoxy or similar permanent waterproof adhesive. 3M VHB two sided foam adhesive tape is an acceptable alternative to epoxy adhesive.
 6. Stainless steel bands shall be used to attach tags to asset if no place for proper attachment is feasible (e.g. valves).

G. Round Brass Suspended Tags

1. Round brass tags shall be minimum 19 gauge brass, 1-1/2" diameter, and include a 3/16" diameter top hole for fastener.
2. Lettering shall be stamped, minimum 1/4" in height, black in color, and utilize the bubble format layout described in this Section.
3. Tags shall accurately display the Asset ID in the format described in this Section and as coordinated with TMWRF.
4. Brass tags shall be affixed to assets with stainless steel braided cable secured with a crimp style fastener.

H. Application and Installation

1. Install asset identification products as indicated, in accordance with manufacturer's written instructions.
2. Substrate for adhesive plastic laminate tags shall be prepared in accordance with the manufacturer's recommendations prior to application of tags
3. Coordination: Where identification is to be applied to surfaces which require finish, install identification after completion of painting.
4. Regulations: Comply with governing regulations and requests of governing authorities for identification of equipment.

END OF SECTION

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SECTION 01756

ACCEPTANCE TESTING AND FACILITY START UP

PART 1 GENERAL

1.1 EQUIPMENT AND INSTRUMENT TESTING PLAN

- A. The objective of the Equipment Testing Plan shall be to demonstrate, to the ENGINEER's complete satisfaction, that the structures, systems, and equipment meet all the performance requirements. In addition, the Equipment Testing Plan shall produce a record of baseline operating conditions for the OWNER.
- B. The CONTRACTOR shall participate with the ENGINEER in the development of the Equipment Testing Plan. The Equipment Testing Plan shall be divided into the various process systems. The Equipment Testing Plan shall include tests and documentation procedures for the calibration of all analysis instruments and control sensors followed by step-by-step procedures for the Performance Testing, Facility Startup/Operational Testing, and Demonstration Testing for each individual item of mechanical, electrical, and instrumentation equipment, and for the facility as a whole as specified in the individual Sections. The CONTRACTOR shall be responsible for leading the development of the Equipment Testing Plan effort and the Equipment Testing Plan shall be reviewed and accepted by the ENGINEER prior to beginning any testing.
- C. The CONTRACTOR shall submit Equipment Test Report Forms for each item of equipment to be tested. The minimum information to be included shall be as follows:
 - 1. Project Name.
 - 2. Equipment or item tested (including tag numbers).
 - 3. Date and time of test.
 - 4. Type of test performed (Performance or Operational).
 - 5. Test conditions.
 - 6. Manufacturer's representatives present during testing (if applicable)
 - 7. Temporary systems required during the testing (if applicable)
 - 8. Test results.
 - 9. Calibration documentation for all test equipment (including test laboratory)
 - 10. Signature space for CONTRACTOR and ENGINEER.
- D. The CONTRACTOR shall prepare a testing schedule in bar graph form establishing the time period when the CONTRACTOR plans to proceed with the testing of the completed systems and each system element. The schedule shall include a description of the temporary systems and installations planned to allow testing to take place. The schedule shall detail the sequence, time and duration of Performance Testing, Facility Startup/Operational Testing, and the Demonstration Period. No testing or startup shall take place on dates and times other than those given in the testing schedule.

1.2 EQUIPMENT AND INSTRUMENTATION PERFORMANCE TESTING

- A. The CONTRACTOR shall conduct a calibration program for all instruments, gages, meters, monitors, and thermometers used for determining the performance of equipment and systems to be tested.
- B. All test equipment (gages, thermometers, meters, analysis instruments, and other equipment) used for calibrating or verifying the performance of equipment installed under this contract shall be calibrated to an accuracy at least as accurate as the tolerance specified for the item being tested with $\pm 2\%$ of actual value at full scale being the maximum allowable. Test equipment employed for individual test runs shall be selected so that expected values as indicated by the detailed performance specifications will fall between 60 and 85% of full scale.
- C. Pressure gages shall be calibrated in accordance with ANSI/ASME B40.1. Thermometers shall be calibrated in accordance with ASTM E77. Liquid flow meters, including all open channel flow meters and all meters installed in pipelines with diameters greater than 2" shall be calibrated in situ using either the total count or dye dilution methods. Ultrasonic level and magnetic type flow meters shall be calibrated per manufacturers' recommendations. For gas flow meters installed in piping systems with diameters greater than 6", factory calibration curves for the primary element shall be submitted and the transmitters shall be calibrated onsite per factory specifications.
- D. The following steps apply to each process system or facility as it is readied for startup and operation:
 - 1. SUBMITTALS: All submittals relevant to installation practices, equipment, piping, anchorage calculations, instrumentation, materials, and testing plans have been submitted to the ENGINEER and received "No Exceptions Taken" or "Make Corrections Noted" review status.
 - 2. FACTORY TESTING: Where required prior to the shipment of equipment to the site, complete factory testing. Such testing may be both unwitnessed and witnessed by the ENGINEER and/or OWNER as specified and at their discretion.
 - 3. OPERATIONS AND MAINTENANCE MANUALS: Operations and maintenance manuals for equipment shall be submitted and receive "No Exceptions Taken" or "Make Corrections Noted" review status.
 - 4. CONSTRUCTION COMPLETE: Construction is substantially complete so that facility is ready to be used for its intended purposes and all signage is posted. All construction deficiencies shall be corrected prior to testing, unless agreed by OWNER that testing can begin concurrent with correcting a construction deficiency.
 - 5. INSPECTION: Inspect and clean equipment, devices, connected piping, and structures to ensure they are free of foreign material.
 - 6. LUBRICATION: Lubricate equipment in accordance with manufacturer's instructions.
 - 7. REGULATORY AGENCY APPROVALS: Conduct inspections by and tests for regulatory agencies (Fire Marshal, Air Quality Control Board, etc.) and receive approvals needed to operate system. Provide written information required by regulatory agencies.
- E. Each item and system of mechanical, electrical, and instrumentation equipment installed under this contract shall be tested for 8-hours continuously to demonstrate compliance with the performance requirements of the individual Specification sections, unless otherwise specified.

- F. Follow the approved Equipment Testing Plan and detailed procedures specified. Unless otherwise indicated, furnish all labor, materials, and supplies for conducting the test and taking all samples and performance measurements. Prepare Performance Test reports summarizing test methods and results as described in the Equipment Testing Plan.
- G. The CONTRACTOR is responsible for performance testing of all project equipment and systems in all modes of operation including remote PLC modes of operation.
- H. The CONTRACTOR shall test the utility, chemical feed, safety equipment and other support systems before testing the process system.
- I. Pressure and leakage tests: Pressure and leakage tests shall be conducted in accordance with applicable portions of Divisions 1, 2, 3, 10, 13, and 15 and shall be completed prior to any testing of connected mechanical equipment or valves. All tests shall be witnessed by the ENGINEER.
- J. Calibration: Calibration of analysis instruments, sensors, gages, and meters installed under this contract shall proceed on a system-by-system basis. No equipment or system Performance Tests shall be performed until instruments, gages, and meters to be installed in that particular system have been calibrated and the calibration work has been witnessed by the ENGINEER. Calibrate testing equipment in accordance with the manufacturer's instructions. The CONTRACTOR shall execute and submit completed Instrument Calibration Test Data Forms.
- K. Mechanical systems: Manufacturer's representatives shall confirm that all equipment and valves are properly installed before first operation and shall conduct/oversee the initial operation and testing. All mechanical systems shall be tested as specified in the individual equipment specification sections and as follows:
 - 1. Ensure and demonstrate that equipment and valves operate properly and reliably. Open and close valves by hand and operate other devices to check for binding, interference, or improper functioning.
 - 2. Inspect hand and motorized valves for proper adjustment. Tighten packing glands to insure no leakage, but permit valve stems to rotate without galling. Verify valve seats are positioned for proper flow direction.
 - 3. Tighten leaking flanges or replace flange gasket. Inspect screwed joints for leakage.
 - 4. Equipment that is capable of automatic or remote operation shall be tested first in manual mode. Limit switches shall be set and adjusted on all valves so equipped. Setpoints on all pressure regulating, pressure relief, vacuum relief, and other valves with setpoints shall be confirmed and reset as directed by TMWRF.
 - 5. Remove rust preventatives and oils applied to protect equipment during construction.
 - 6. Flush lubrication systems and dispose of flushing oils. Recharge lubrication system with lubricant recommended by manufacturer.
 - 7. Flush fuel system and provide fuel for testing and start-up.
 - 8. Install and adjust packing, mechanical seals, O-rings, and other seals. Replace defective seals.
 - 9. Remove temporary supports, bracing, or other foreign objects installed to prevent damage during shipment, storage, and erection.

10. Check rotating machinery for correct direction of rotation and for freedom of moving parts before connecting driver. Turn rotating equipment by hand when possible to confirm that equipment is not bound.
 11. Perform cold alignment and hot alignment to manufacturer's tolerances.
 12. Adjust V-belt tension and variable pitch sheaves.
 13. Startup tests of pumps, motors, and VFD's shall be performed to verify pump performance and operation over the full operating range from minimum head/flow up to maximum head/maximum capacity.
 14. Install gratings, safety chains, handrails, shaft guards, and sidewalks prior to Facility Startup/Operational Testing.
- L. Electrical systems: Testing shall be performed in three stages as specified in the individual equipment specification sections, Division 16 and as follows:
1. The first stage shall consist of electrical equipment testing prior to energization and operation of electrical equipment. Testing, calibration, and setting of electrical conductors, equipment, protective devices, grounding, and other components as specified in the electrical sections of the Specifications shall be conducted prior to equipment startup. This also includes bumping all motors to verify the direction of rotation. Unsatisfactory equipment test results shall require that the equipment be repaired and re-tested until acceptable results are obtained at no additional cost to the OWNER.
 2. The second stage of electrical testing shall occur after energization and start-up of equipment and shall consist of complete testing of all other equipment as specified in the Electrical Sections.
- M. The third stage of testing will take place during the Operational Testing and shall include all possible operating scenarios, alarm conditions, prohibitive interlocks, and indication functions.
1. Instrumentation: Conduct field calibration, loop acceptance, and end-to-end testing as specified in the individual Instrumentation Sections. Bench or field calibrate instruments and make required adjustments and control point settings. Energize transmitting and control signal systems, verify proper operation, ranges, and settings. Demonstrate proper operation of each instrument loop function including alarms, local and remote controls, instrumentation and other equipment functions. Generate signals with test equipment to simulate operating conditions in each control mode.
 2. Permanent utilities: Conduct Performance Tests on utilities impacted, constructed, or modified by construction, as specified in the applicable Sections.
 3. HVAC systems: Balance HVAC systems, measuring airflow (cfm) static pressure, and component pressure losses. Furnish written report documenting results of balancing.
 4. Demonstration: Demonstrate proper rotation, alignment, speed, flow, pressure, vibration, sound level, adjustments, and calibration over the full operating range of equipment and systems. Perform initial checks in the presence of and with the assistance of the manufacturer's representative.
 5. Telecommunications system testing: Telecommunications testing shall be as specified in the applicable Section.

1.3 EQUIPMENT AND INSTRUMENTATION TESTING RESULTS

- A. Test results shall be within the tolerances stated in the individual Specification sections. If no tolerances have been specified, test results shall conform to tolerances established by recognized industry practice. When, in ENGINEER's opinion, equipment meets performance requirements specified, such equipment will be accepted as conforming with Contract requirements.
- B. Should any doubt, dispute, or difference arise between the ENGINEER and the CONTRACTOR regarding the test results or the methods or equipment used in the performance of the testing, then the ENGINEER may order the test to be repeated. If the repeat test, using such methods or equipment as the ENGINEER requires, substantially confirms the previous test, then all costs in connection with the repeat test will be paid by the OWNER, otherwise the costs shall be borne by the CONTRACTOR. All costs associated with repeat testing due to failed test results shall be borne by the CONTRACTOR, including the ENGINEER's expenses.
- C. If any portion of the work should fail to fulfill the contract requirements and is adjusted, altered, renewed, or replaced, tests on that portion of the work together with all other affected portions of the work, shall, be repeated within reasonable time and in accordance with the specified requirements. The CONTRACTOR shall pay to the OWNER all reasonable expenses incurred by the OWNER, including the costs of the ENGINEER, as a result of repeating such tests.
- D. Once Performance Testing has been completed, all machines shall be rechecked for proper alignment and realigned, as required. All equipment shall be checked for loose connections, unusual movement, or other indications of improper operating characteristics. Any deficiencies shall be corrected to the satisfaction of the ENGINEER. All machines or devices, which exhibit unusual or unacceptable operating characteristics, shall be disassembled and inspected. Any defects found during the course of the inspection shall be repaired or the specific part or entire equipment item shall be replaced to the complete satisfaction of the ENGINEER, at no cost to the OWNER.

1.4 UPON COMPLETION OF PERFORMANCE TESTING AND PRIOR TO FACILITY STARTUP/OPERATIONAL TESTING, THE CONTRACTOR SHALL SUBMIT THE MANUFACTURER'S INSTALLATION CERTIFICATION FORM CERTIFYING THAT THE EQUIPMENT:

- A. Has been properly installed, adjusted, aligned, and lubricated.
- B. Is free of any stresses imposed by connecting piping or anchor bolts.
- C. Is suitable for satisfactory full-time operation under full load conditions.
- D. Operates within the allowable limits for vibration.
- E. Controls, protective devices, instrumentation, and control panels furnished as part of the equipment package are properly installed, calibrated, and functioning.
- F. Control logic for start-up, shutdown, sequencing, interlocks, and emergency shutdown have been tested and are properly functioning.

- 1.5 THE CONTRACTOR SHALL ALSO SUBMIT THE MANUFACTURER'S INSTALLATION CERTIFICATION FORM SIGNED BY THE ELECTRICAL AND/OR INSTRUMENTATION SUBCONTRACTOR CERTIFYING:
- A. Control logic that resides in motor control centers, control panels, and circuit boards furnished by the electrical and/or instrumentation subcontractor has been calibrated and tested and is properly operating.
 - B. Control logic for equipment start-up, shutdown, sequencing, interlocks and emergency shutdown has been tested and is properly operating.
- 1.6 THE CONTRACTOR SHALL CO-SIGN THE MANUFACTURER'S INSTALLATION CERTIFICATION FORM ALONG WITH THE MANUFACTURER'S REPRESENTATIVE AND SUBCONTRACTORS AND DELIVER THE REPORTS TO THE ENGINEER PRIOR TO FACILITY STARTUP/OPERATIONAL TESTING.
- 1.7 AFTER COMPLETION OF ALL PERFORMANCE TESTING AND OPERATOR TRAINING THE CONTRACTOR SHALL BEGIN THE FACILITY STARTUP AND CONDUCT OPERATIONAL TESTS OF EACH SYSTEM AS DESCRIBED HEREIN. CONTRACTOR SHALL CONDUCT THE OPERATIONAL TEST FOR A CONTINUOUS 5-DAY PERIOD.
- 1.8 FACILITY STARTUP/OPERATIONAL PLAN
- A. Develop a plan in conjunction with OWNER's operations personnel detailing step-by-step instructions for startup of each unit process and the complete facility.
 - B. Include a method of evaluation and overall performance reports for each unit process, utilizing the Startup and Performance Evaluation Forms. Startup and Performance Evaluation Forms will minimally include the following:
 - 1. Description of unit process being started.
 - 2. All equipment and devices included in the unit process.
 - 3. Unit process startup procedures (i.e., valves to be open/closed, order of equipment startup, etc.).
 - 4. Requirements for water, power, chemicals, etc. needed for startup.
 - 5. Space for performance evaluation comments.
 - C. OWNER's responsibilities:
 - 1. Assist CONTRACTOR in developing a Facility Startup and Demonstration Plan detailing step-by-step instructions for startup of each unit process and the complete facility.
 - 2. Provide water and power for testing and facility startup, unless otherwise indicated.
 - 3. Operate process units and devices, with support of CONTRACTOR.
 - 4. Provide labor and materials as required for sampling and laboratory analyses.

1.9 FACILITY STARTUP/OPERATIONAL TESTING PERIOD

- A. Startup sequence of the unit processes shall be in accordance with the Facility Startup/Operation Plan developed by the CONTRACTOR and the OWNER, and as approved by the ENGINEER.
- B. Startup of the entire facility or any portion thereof shall be considered complete when, in the opinion of the ENGINEER, the facility or designated portion has operated in manner intended for 5-continuous days, without interruption, unless otherwise specified. This period is in addition to training, or Performance Test periods specified elsewhere.
- C. Repeat the Operational Test when malfunctions or deficiencies cause shutdown or partial operation of the facility or results in performance that is less than specified, as determined by the ENGINEER. Any interruption will require the startup then in progress to be stopped and restarted for an additional 5-continuous days, after corrections are made.

1.10 FACILITY PERFORMANCE EVALUATION

- D. During the Facility Startup/Operational Testing Period, conduct a performance evaluation to determine the full capabilities of the facility and performance of the computer system, until all unit processes are operable and under control of the computer system.
- E. Certify, on the Startup and Performance Evaluation Forms that each unit process is capable of performing its intended function(s), including fully automatic and computerized operation.

1.11 DOCUMENTATION

- F. Results of the startup shall be fully documented and copies provided in the specifications. Documentation shall include amperages, rpms, speeds, efficiencies, resistance, flows, pressures, etc.
- G. Upon successful completion of the Acceptance Test, the SUPPLIER shall prepare a written report. This report shall be submitted to OWNER and shall summarize pertinent details regarding the tests as well as test results to demonstrate that the tested equipment complies with the specified description and minimum system Performance Requirements. Submittal of the report and subsequent review and approval by OWNER shall be required prior to final acceptance of the system.

END OF SECTION

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SECTION 01820

TRAINING AND DEMONSTRATION PERIOD

PART 1 GENERAL

1.1 THE CONTRACTOR SHALL CONDUCT THE TRAINING OF THE OWNER'S STAFF AS SPECIFIED FOR EQUIPMENT AND FACILITY OPERATION AND MAINTENANCE BEFORE EACH ASSOCIATED SYSTEM IS PLACED INTO SERVICE.

1.2 DEMONSTRATION PERIOD

- A. After successful completion of the Performance, Facility Startup/Operational Testing and when the OWNER is ready to accept the system, the system shall be placed into full operational condition.
- B. The CONTRACTOR, ENGINEER, and the OWNER's operations personnel shall first develop an outline of the steps for the startup and initial operation of each area under actual operating conditions of the equipment and systems. The document shall serve as guidance for the Demonstration Period.
- C. The OWNER's certified operations personnel shall operate the facility under the direction and supervision of the CONTRACTOR for a 30-day period. The CONTRACTOR shall be available within 24-hours' notice to provide repairs, assistance, or adjustments in case of failure of any portion of the system.
- D. During the Demonstration period, the OWNER shall be responsible for all normal operational costs and the CONTRACTOR shall bear the costs of all necessary repairs or replacements, including labor and materials.
- E. OWNER reserves the right to simulate operational variables, equipment failures, routine maintenance scenarios, etc., to verify the functional integrity of the system.
- F. The facility shall be fully operational, performing all functions for which it was designed. If, during the Demonstration Period the aggregate amount of time used for repairs, alterations, or unscheduled adjustments to any equipment or systems that renders the affected equipment or system inoperative exceeds 10-percent of the Demonstration Period, then the Demonstration Period will be deemed to have failed. In the event of failure, a new Demonstration Period will recommence after correction of the cause of failure. Any new Demonstration Periods shall have the same requirements and durations as the first period.
- G. Time of beginning and ending of the Demonstration Period shall be agreed upon by the CONTRACTOR, OWNER and the ENGINEER, in advance of initiating the Demonstration Period.
- H. At the end of the Demonstration Period and when all corrections required by the ENGINEER to assure a reliable and completely operational facility are complete and all test reports have been submitted and approved, the ENGINEER shall issue a Substantial Completion Certification.
- I. Final acceptance shall be determined by the OWNER.

END OF SECTION

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SECTION 01830

OPERATION AND MAINTENANCE DATA

PART 1 GENERAL

1.1 OVERVIEW

- A. This section provides requirements for submittal of operation and maintenance (O&M) data pertaining to the project. The O&M submission shall include (1) submission of project equipment O&M data, (2) submission of data for the facility's electronic O&M in a format specified in this section, and (3) submission of data for the Asset Management (AM) and Computerized Managed Maintenance Management Software (CMMS) of the facility.
- B. Project equipment O&M submittal shall be specific to the project under construction and include data for all equipment and process installed under the project. Contractor shall closely coordinate with the TMWRF/ENGINEER to clarify on the expectations and requirements for the O&M data submission for the particular project.
- C. Contractor shall comply with the submission requirements for the eOMM as described in the section below.
- D. TMWRF utilizes eRPortal software for Asset Management (AM) and Computerized Maintenance Management Software (CMMS) operations. Section 01672 - Asset Identification and Labeling establishes requirements for submittal of general asset data for AM. Requirements for submittal of preventative maintenance for CMMS operations are included in this Section.

1.2 OPERATION AND MAINTENANCE (O&M) MANUALS SHALL CONTAIN THE FOLLOWING INFORMATION AND COMPONENTS:

- A. Cover page
 - 1. Identify each volume with typed or printed title if applicable.
 - 2. List Project name, equipment name, equipment tag number, OWNER's name, specification section number, appropriate date.
- B. Table of Contents
- C. Name of Contractor and Engineer with addresses and telephone numbers.
- D. List with each product: Name, address, and telephone number of subcontractor, supplier, installer, and maintenance contractor, as appropriate.
- E. General description of information provided within each tab section
- F. Provide local source of supply for parts and replacement.
- G. Control diagrams: internal and connection wiring, including logic diagrams, wiring diagrams for control panels, ladder logic for computer based systems, and connections between existing systems and new additions, and adjustments such as calibrations and set points for relays, and control or alarm contact settings.

- H. Start-up procedures: Recommendations for installation, adjustment, calibration, and troubleshooting.
- I. Operating procedures:
 - 1. Step-by-step procedures for starting, operating, and stopping equipment under specified modes of operation.
 - 2. Include safety precautions and emergency operating shutdown instructions.
 - 3. Include a list of environmental conditions (temperature, humidity, and other relevant data) which are best suited for each product or piece of equipment and describe conditions under which equipment should not be allowed to run.
- J. Delivery, storage, and handling: Recommendations for delivery, handling, storage, and maintenance during storage.
- K. Preventive maintenance procedures: Recommended steps and schedules for maintaining equipment.
- L. Lubrication information: Required lubricants and lubrication schedules.
- M. Overhaul instructions: Directions for disassembly, inspection, repair and reassembly of the equipment; safety precautions; and recommended tolerances, critical bolt torques, and special tools that are required.
- N. Parts list: Generic title and identification number of each component part of equipment; include bearing manufacturer, model and ball or roller pass frequencies for every bearing.
- O. Spare parts list: Recommended number of parts to be stored at the site and special storage precautions.
- P. Warranties: List and explain all of the warranties, bonds and service agreements and include the servicing and technical precautions prescribed by the manufacturers or contract documents to keep the warranties in force. Include the proper procedures in event of failure. Provide instances that might affect the validity of Warranties or Bonds.
- Q. Drawings: Supplement product data with Drawings as necessary to clearly illustrate:
 - 1. Relations of component parts of equipment and systems.
 - 2. Control and flow diagrams
 - 3. Coordinate drawings with Project record documents to assure correct illustration of completed installation. (Please do not use Project record documents as maintenance manual drawings.)
- R. Provide electrical and instrumentation schematic record drawings.
- S. Source (factory) quality control test results: Provide copies of factory test reports as specified in the equipment section or as required.
- T. Field quality control test results: After field-testing is completed, insert field test reports as specified or as required.

- U. Electronic copy of the O&M manual shall contain a training manual used for startup training session for that piece of equipment or system.

1.3 PROVISIONS FOR FACILITY ELECTRONIC OPERATIONS AND MAINTENANCE MANUAL (EOMM)

- A. Submittal of project specific operation and maintenance manuals and documents shall supplement the TMWRF's eOMM.

1. Contractor shall submit the as-built project manuals and documents in the format specified herein to TMWRF/ENGINEER for review. Contractor shall incorporate TMWRF/ENGINEER comments and submit the final documents which would be used by the TMWRF to update their eOMM.
2. Contractor shall comply with the submittal type and format described below. Submittals that do not comply with the type and format will be rejected without further content review.
3. Each section of the eOMM page for the process /project shall follow the structure and format described in this specification.
4. Submit all electronic files as part of the eOMM submission in duplicate memory drives.
5. Electronic files must not be password protected.
6. All electronic pdf files must be searchable.
7. File names shall be in English, shall not be arbitrary, shall contain no spaces, shall not exceed 25 characters, shall have only alphanumeric characters, and shall not contain the following symbols:
`` ! @ # $ % ^ & * () - = + < > ? / \ | . , ~ ' " ; { []`
8. Scanned documents are not acceptable for the electronic copy of the O&M manual.
9. Contractor shall submit a set of hard copy of the electronic files submitted for the eOMM. The hard copy shall be bound in a three-ring binder, arranged in the order of eOMM sections, separated by sections with fly-leaves, and provided with a table of contents on the front. All information provided electronically shall be consistent and exact copy of information provided in bound format.

- B. The TMWRF eOMM contains the following sections. Contractor shall provide project specific data and information for each section in the specified format and comply with other requirements as described for each section in this specification.

1. Alarms
 - a. The list of alarms for the eOMM will be gathered from the Specification Section 17101 – Specific Control Strategies.
 - b. Contactor shall complete the alarms section of the Specification Section 17101 in all respect.

2. Theory of operations
 - a. Submit a description of the general process and the theory (chemical, physical, and biological) behind the process operation. Include an overview of the system, system components, and how they interact with one another to achieve the process objective. Describe flow paths for all material inputs and outputs of the process and provide pictures/diagrams to aid the descriptions.
 - b. Provide the above in a word document with single spaced, Times New Roman, and 12 size black font.
 - c. Use Template A as an example of the Theory of Operations.
3. Design criteria
 - a. Provide design criteria of each piece of equipment separately in a tabular form as shown in example Template B.
 - b. Provide at minimum, but not limited to, number of units, type of unit, design provision e.g., duty/standby or lead/lag, dimensions, capacity (flow, volume, HP, RPM, voltage, etc), design loading rate including hydraulic, solids, and organic, and design factors (HRT, SRT, etc).
 - c. Provide the above in a word document with single spaced, Times New Roman, and 12 size black font.
4. Equipment
 - a. Provide a summary of details of each piece of equipment separately in a tabular form as shown in example Template C.
 - b. At minimum, provide information for each field as shown in the template.
 - c. Provide the above in a word document with single spaced, Times New Roman, and 12 size black font.
5. Instrument
 - a. Provide a summary of details of each piece of instrument separately in a tabular form as shown in example Template D.
 - b. At minimum, provide information for each field as shown in the template.
 - c. Provide the above in a word document with single spaced, Times New Roman, and 12 size black font.
6. Vendor O&Ms
 - a. Contractor shall submit pdf files of manufacturer/supplier's O&M manual for each piece of equipment and instrument used in the project.
 - b. Naming convention of each pdf file shall be the unique eight character Asset ID assigned to the equipment or instrument, as described in Specification Section 01672. If two or more pieces of equipment have the same O&M manual, replicate files must be generated and named for each distinct asset in the project.

7. Photos
 - a. Submit electronic files of all photos used in the description of any of the eOMM sections and all construction photos. Use a short file name including the identifying area or equipment shown in the photo followed by the date the photo was taken using the following format: yy.mm.dd
 - b. All photo shall be in JPEG format with 640x480 size.
8. Drawings
 - a. Submit a set of all record drawings in pdf format. Drawings shall be 11x17 inch size and file naming convention shall be per the Specification Section 01830 – Operation and Maintenance Data.
 - b. The record drawings shall include a full set of the project drawings scanned into a single pdf file and separate pdf files with each including drawings from each section of the drawing set (general, civil, electrical, instrumentation, mechanical and structural).
9. Documents
 - a. No submission shall be required from Contractor for this section.
10. Control Description
 - a. Information for this section shall be gathered from the Specification Section 17101 – Specific Control Strategies, Overall Control Description paragraph. This specification describes control description of each loop or equipment in the format shown in the Specification Section 17101.
 - b. Contractor in coordination with ENGINEER shall update and submit the as-built Specification Section 17101.
 - c. At minimum, this paragraph must include but not limited to (1) how each piece of equipment is controlled in remote automatic mode and/or manual mode, (2) external software and hardware interlocks, and (3) setpoints and alarms.
11. Troubleshooting
 - a. Provide a list of common problems or issues, probable causes, and solution(s) to the problem for each equipment of the project in a tabular format as shown in Template E. These data as submitted in the manufacturer’s O&M shall not be acceptable and must be submitted in the format specified below.
 - b. Provide the above in a word document with single spaced, Times New Roman, and 12 size black font.

END OF SECTION

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SECTION 13700

ALARM AND PAGING EQUIPMENT

PART 1 GENERAL

1.1 THE SUMMARY

- A. The CONTRACTOR shall arrange for detail design and provide the alarm system and accessories, complete and operable, in accordance with the Contract Documents.
- B. The CONTRACTOR shall submit system design and product information for approval.
- C. The requirements of Section 16000 – Electrical General Provisions, apply to the WORK of this Section.

1.2 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

- A. NEC – National Electrical Code.

1.3 SUBMITTALS

- A. Furnish submittals in accordance with Section 01300 – Contractor Submittals.
- B. Shop Drawings
 - 1. Block diagram showing system relationships of major components and quantities and interconnecting cable requirements.
 - 2. Plans showing equipment locations, raceway, and conductor requirements
 - 3. Control console and panel arrangements, equipment outlet devices, and special mounting details
 - 4. Wiring diagrams showing terminal identification for field installed wiring.
 - 5. Catalog literature for detector, manual pull stations, and control panel components.
 - 6. Control logic, electrical schematic, and connection diagrams for the entire system.
- C. Stamp of approval. Furnish one copy of the system design and product information.
- D. The CONTRACTOR shall furnish 6 copies of the operating and service manuals for the system. The manuals shall be bound in flexible binders with data therein printed or typewritten. Each manual shall include instruction necessary for proper operation of the system and shall include a complete block diagram of the system, a complete circuit diagnosis of the system, and wiring designation schedule for each amplifier as well as other major components and a replacement parts list.

1.4 QUALITY ASSURANCE

- A. Manufacturer's Qualifications: Alarm system components shall be manufactured by firms regularly engaged in the alarm system. Auxiliary equipment similar to that required for this project shall have been in satisfactory service for at least 5 years.

- B. Installer's Qualifications: The firm performing detailed design and installing the alarm system shall have had prior successful experience with alarm systems comparable in extent and complexity to this WORK. Submit a listing of the firm's experience if the ENGINEER requests.
- C. The CONTRACTOR shall post a typewritten notice at the alarm panel for the name, address, and telephone number of the firm to call when service is necessary. Notice shall be mounted in a glass-faced metal frame attached to the panel case.
- D. Operation of the alarm system shall be demonstrated to the ENGINEER to prove that the system operates properly and complies with these requirements.

1.5 MAINTENANCE DURING CORRECTION OF DEFECTS PERIOD

- A. The CONTRACTOR shall arrange for the installing firm to respond to trouble calls with a competent repair person at the Site within 24 hours of telephone notice; the installing firm shall also maintain a full inventory of replacement parts so that routine repairs can be completed within 24 hours.

PART 2 PRODUCTS

2.1 EQUIPMENT

- A. Desktop: Desktop (telephone) shall be wall-mounted. Acceptable manufacturer: GAI-TRONICS P/N 319-02-HZ00200
- B. IP Controller: IP Controller shall be alarm generator with features of prerecorder message storage, built-in real time clock, and accept up to 8 contact input. Acceptable manufacturer: GAI-TRONICS P/N 013-02-0096-001
- C. Speakers: Indoor Speakers shall be UL approved with meeting Class 1, Div 2 requirement. Acceptable manufacturer: GAI-TRONICS P/N 910-320S1000
- D. Indoor/Outdoor Speaker Amplifier Station: Amplifier shall accept input voltage varying from 100-240VAC. Speakers shall be UL approved with meeting Class 1, Div 2 requirement. Speakers Amplifier Station shall have ethernet cable connection and RTU output. Acceptable manufacturer: GAI-TRONICS P/N 910-320S100 (indoor) and 920-320S100 (outdoor).
- E. Weatherproof Horn with Integral Driver rated at 15 watt at 8 ohms, Non-Corrosive material with Stainless Steel mounting bracket, Ingress Protection Rating (IP-56). Acceptable manufacturer: GAI-TRONICS P/N HP15-8
- F. Industrial/Weatherproof Strobe, approved for Div 2 areas. Acceptable manufacturer: GTNVSZMFG01RBG

PART 3 EXECUTION

3.1 INSTALLATION

- A. Alarm system installation shall be performed in accordance with manufacturer's written recommendations.
- B. Electrical WORK involving connections, controls, stations, etc, shall be performed in accordance with the applicable section of Division 16.

3.2 COMMISSIONING

- A. The CONTRACTOR shall verify each device in the alarm/paging system working properly.

END OF SECTION

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SECTION 16000

ELECTRICAL - GENERAL PROVISIONS

PART 1 GENERAL

1.1 SCOPE OF WORK

- A. Furnish all labor, materials, and equipment required and install complete and make operational, alarm system at the TMWRF as shown on the Drawings and as specified herein.
- B. Contractor shall arrange and pay for the City of Sparks Building permit for the work required in the scope.
- C. The work shall include furnishing, installing, and testing the equipment and materials detailed in the following Sections:

<u>Section No</u>	<u>Title</u>
13700	- Alarms and Paging Equipment
16000	- Electrical - General Provisions
16110	- Raceways, Boxes, Fittings and Supports
16120	- Wires and Cables (600 Volt Maximum)
16600	- Underground Systems
16950	- Electrical System Testing and Settings

- D. The work shall include furnishing and installing the following:
 - 1. Furnish and install Conduit and Cable for electrical equipment under Section 13700.
 - 2. Furnish and install Conduit and Cable for all field-mounted instruments furnished and mounted under other Divisions. Install vendor furnished cables specified under other Divisions.
 - 3. Furnish and install precast manholes, and handholes (if need).
 - 4. Furnish and install manhole and handhole frames and covers (if need).
 - 5. Remove and demolish equipment and materials in such a sequence that the existing and proposed plant will function properly with no disruption of Plant process treatment.
 - 6. Perform testing of the electrical equipment.
- E. Each bidder or their authorized representatives shall, before preparing their proposal, visit all areas of the existing buildings and structures in which work under this bid is to be performed and inspect carefully the present installation. The submission of the proposal by this bidder shall be considered evidence that their representative has visited the buildings and structures and noted the locations and conditions under which the work will be performed and that he/she takes full responsibility for a complete knowledge of all factors governing his/her work.
- F. Sequencing and Scheduling
 - 1. Coordinate electrical equipment installation with MOPO and/or facility operational constraints as approved by TMWRF staff.

2. Coordinate electrical equipment installation with other building components.
 3. Arrange for chases, slots and openings in the building structures during the progress of construction to allow for the electrical installation.
 4. Coordinate installing required supporting devices and set sleeves in poured-in-place concrete and other structural components as they are constructed.
 5. Sequence, coordinate and integrate the installation of electrical materials and equipment for efficient flow of the work. Coordinate the installation of large equipment requiring position prior to closing in the building.
 6. Verify final locations for rough-ins with field measurements and with the requirements of the actual equipment to be connected.
- G. Excavation, bedding material, forms, concrete and backfill for underground raceways; forms and concrete for electrical equipment furnished under Division 16. The work shall be in accordance with Divisions 2 and 3.

1.2 RELATED WORK

- A. Asset Identification and Labeling is included in Section 01672.
- B. Acceptance testing and Facility Start-up is included in Section 01756.
- C. Training and Demonstration Period is included in Section 01820.
- D. Operations and Maintenance Data is included in Section 01830.

1.3 SUBMITTALS

- A. Submit, in accordance with Section 01300, shop drawings for equipment, materials and other items furnished under Division 16.
- B. As a minimum all equipment specified in each Section of Division 16 shall be submitted at one time. As an example all lighting fixtures shall be submitted together, all motor control centers shall be submitted together, etc. Submittals that do not comply will be returned disapproved.
- C. Shop drawings shall be submitted for the following equipment:
 1. Raceways, Boxes, Fittings and Hangers
 2. Wires and Cables
 3. Precast Manholes and Handholes, Frames and Covers
 4. Grounding Hardware and Connections
 5. Intercom and Paging System
- D. The manufacturers name and product designation or catalog numbers shall be submitted for the following material:
 1. Raceways, Boxes, Fittings and Hangers

2. Wire and Cable
- E. The following shall be submitted for record.
1. Ground System Test Results.
 2. Electrical System Test Results
- F. Mark submittals to clearly identify proposed equipment including accessories, options, and features and to exclude parts not applicable to the project.
- G. Check shop drawings for accuracy prior to submittal. Shop drawings shall be stamped with the date checked and a statement indicating that the shop drawings conform to this Section and the Drawings. This statement shall also list all exceptions to this Section and the Drawings. Mark submittals to identify proposed equipment including accessories, options and features being proposed for approval and exclude parts not to be used. Shop drawings not so checked and noted shall be returned marked NOT APPROVED.
- H. The Engineer's check shall be for conformance with the design concept of the project and compliance with this Section and the Drawings. Errors and omissions on approved shop drawings shall not relieve the Contractor from the responsibility of providing materials and workmanship required by this Section and the Drawings.
- I. All dimensions shall be field verified at the job site and coordinated with the work of all other trades.
- J. Material shall not be ordered or shipped until the shop drawings have been approved. No material shall be ordered or shop work started if shop drawings are marked "APPROVED AS NOTED - CONFIRM," "APPROVED AS NOTED - RESUBMIT" or "NOT APPROVED."
- K. In addition to manufacturer's equipment shop drawings, submit electrical installation working drawings containing the following:
1. Concealed and buried conduit layouts, shown on floor plans drawn at not less than 1/4-in = 1-ft-0-in scale. The layouts shall include locations of process equipment, motor control centers, transformers, panelboards, control panels and equipment, motors, switches, motor starters, large junction or pull boxes, instruments and any other electrical devices connected to concealed or buried conduits.
 2. Plans shall be drawn on high quality reproducible, double sided bond, size 34-in by 22-in and shall be presented in a neat, professional manner.
 3. Review plans and change order related orders work shall be submitted in 11-in x 17-in format.
 4. Concrete floors and/or walls containing concealed conduits shall not be poured until conduit layouts are approved.
- L. Operation and Maintenance Data
1. Submit operations and maintenance data for equipment furnished under this Division, in accordance with Section 01830 – Operations and Maintenance Data. The manuals shall be prepared specifically for this installation and shall include catalog data sheets, drawings,

equipment lists, descriptions, parts lists including replacement part numbers, to instruct operating and maintenance personnel unfamiliar with such equipment.

2. Manuals shall include the following as a minimum:
 - a. A comprehensive index.
 - b. A complete "As-Built" set of approved shop drawings.
 - c. A complete list of the equipment supplied, including serial numbers, ranges and pertinent data.
 - d. System schematic drawings "As-Built," illustrating all components, piping and electric connections of the systems supplied under this Section.
 - e. Detailed service, maintenance and operation instructions for each item supplied.
 - f. Special maintenance requirements particular to this system shall be clearly defined, along with special calibration and test procedures.
 - g. The operating instructions shall also incorporate a functional description of the entire system, with reference to the systems schematic drawings and instructions.
 - h. Complete parts list with stock numbers, including spare parts.

1.4 REFERENCE STANDARDS

- A. Electric equipment, materials and installation shall comply with the National Electrical Code (NEC) and with the latest edition of the following codes and standards:
 1. National Electrical Safety Code (NESC)
 2. Occupational Safety and Health Administration (OSHA)
 3. National Fire Protection Association (NFPA)
 4. National Electrical Manufacturers Association (NEMA)
 5. American National Standards Institute (ANSI)
 6. Insulated Cable Engineers Association (ICEA)
 7. Instrument Society of America (ISA)
 8. Underwriters Laboratories (UL)
 9. Factory Mutual (FM)
 10. National Electrical Testing Association (NETA)
 11. State Building Code
 12. The BOCA National Building Code (BOCA)
 13. American Society for Testing and Materials (ASTM)

14. Institute of Electrical and Electronics Engineers (IEEE)

15. Joint Industrial Council (JIC)

- B. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply.

1.5 PRIORITY OF THE CONTRACT DOCUMENTS

- A. If, during the performance of the work, the Contractor finds a conflict, error or discrepancy between or among one or more of the Sections or between or among one or more Sections and the Drawings, furnish the higher performance requirements. The higher performance requirement shall be considered the equipment, material, device or installation method which represents the most stringent option, the highest quality or the largest quantity.
- B. In all cases, figured dimensions shall govern over scaled dimensions, but work not dimensioned shall be as directed by the Engineer and work not particularly shown, identified, sized, or located shall be the same as similar work that is shown or specified.
- C. Detailed Drawings shall govern over general drawings, larger scale Drawings take precedence over smaller scale Drawings, Change Order Drawings shall govern over Contract Drawings and Contract Drawings shall govern over Shop Drawings.
- D. If the issue of priority is due to a conflict or discrepancy between the provisions of the Contract Documents and any referenced standard, or code of any technical society, organization or association, the provisions of the Contract Documents will take precedence if they are more stringent or presumptively cause a higher level of performance. If there is any conflict or discrepancy between standard specifications, or codes of any technical society, organization or association, or between Laws and Regulations, the higher performance requirement shall be binding on the Contractor, unless otherwise directed by the Engineer.
- E. In accordance with the intent of the Contract Documents, the Contractor accepts the fact that compliance with the priority order specified shall not justify an increase in Contract Price or an extension in Contract Time nor limit in any way, the Contractor's responsibility to comply with all Laws and Regulations at all times.

1.6 ENCLOSURE TYPES

- A. Unless otherwise required, electrical enclosures shall be NEMA Types as follows:
1. NEMA 1 in dry, non-process indoor above grade locations (i.e. administration areas, laboratories, control rooms, storage rooms).
 2. NEMA 12 in "DAMP" locations shown on the Drawings and maintenance shops.
 3. NEMA 4 in outdoor locations, rooms below grade including basements and buried vaults and "WET" locations shown on the Drawings.
 4. NEMA 4X in "CORROSIVE" "WET" locations shown on the Drawings.

1.7 HAZARDOUS AREAS

- A. Equipment, materials and installation in areas designated as hazardous on the Drawings shall comply with NEC Articles 500, 501, 502 and 503.

- B. Equipment and materials installed in hazardous areas shall be UL listed for the appropriate hazardous area classification.

1.8 CODES, INSPECTION AND FEES

- A. Equipment, materials and installation shall comply with the requirements of the local authority having jurisdiction.
- B. Obtain all necessary permits and pay all fees required for permits and inspections.

1.9 ELECTRICAL SYSTEM TESTING AND SETTINGS

- A. Test systems and equipment furnished under Division 16 and repair or replace all defective work and equipment at no additional cost to TMWRF. Refer to the individual equipment sections for additional specific testing requirements.
- B. Make adjustments to the systems furnished under Division 16 and instruct TMWRF's personnel in the proper operation of the systems.
- C. In addition to the specific testing requirements listed in the individual Sections, the following minimum tests and settings shall be performed.
 - 1. Mechanical inspection, testing and settings of equipment for proper operation.
 - 2. Check control and instrument wiring for each system and/or part of a system to prove that the system will function properly as indicated by control schematic and wiring diagrams.
 - 3. Inspect each piece of equipment in areas designated as HAZARDOUS to ensure that equipment of proper rating is installed. In the case where HAZARDOUS rated equipment is installed outdoors verify that gasketed enclosures were furnished.
 - 4. Verify grounding of instrumentation equipment.
- D. Testing shall be scheduled and coordinated with the Engineer at least 2 weeks in advance. Provide qualified test personnel, instruments and test equipment.
- E. Provide a test report verifying compliance with the testing requirements included under Division 16. The report shall include a Table of Content and a data sheet for each component tested. The Table of Content shall identify each component by a unique number. The Number shall appear on the technical data sheet for identification. Submit cable test results, grounding test results, circuit breaker, motor circuit protector, and protective device settings, fuse type and rating for each piece of equipment. Test report shall be submitted in a three ring binder. Three copies shall be furnished.

1.10 INTERPRETATION OF DRAWINGS

A. CONDUIT

- 1. Unless specifically stated to the contrary, the Drawings do not show exact locations of conduit runs. Coordinate the conduit installation with other trades and the actual supplied equipment.
- 2. Conduit shown exposed shall be installed exposed; conduit shown concealed shall be installed concealed. Unless otherwise indicated install branch circuit conduits exposed in process/ industrial type spaces and concealed in finished spaces.

3. Where circuits are shown as "home-runs" all necessary fittings and boxes shall be provided for a complete raceway installation. Where home-runs indicate conduit is to be installed concealed or exposed the entire branch circuit shall be installed in the same manner.
4. Verify the exact locations and mounting heights of lighting fixtures, switches and receptacles prior to installation.
5. Except where dimensions are shown, the locations of equipment, fixtures, outlets and similar devices shown on the Drawings are approximate only. Exact locations shall be determined by the Contractor and approved by the Engineer during construction. Obtain information relevant to the placing of electrical work and in case of any interference with other work, proceed as directed by the Engineer and furnish all labor and materials necessary to complete the work in an approved manner.
6. Circuit layouts are not intended to show the number of fittings, or other installation details. Furnish all labor and materials to install and place in satisfactory operation all power, lighting and other electrical systems shown.
7. Redesign of electrical or mechanical work, which is required due to the Contractor's use of an alternate item, arrangement of equipment and/or layout other than specified herein, shall be done by the Contractor at his/her own expense. Redesign and detailed plans shall be submitted to the Engineer for approval. No additional compensation will be provided for changes in the work, either his/her own or others, caused by such redesign.
8. Submittal Data Requirements
 - a. Submittals
 - i. Catalog cuts or data sheets on restraints to be utilized detailing compliance with this Section. Reference "Type" in accordance with Paragraph F - Materials.
 - ii. Catalog cuts or data sheets on restraints to be utilized detailing compliance with this Section. Reference "Type" in accordance with Paragraph F - Materials.
 - iii. An itemized list of all isolated and non-isolated equipment. Detailed schedules showing isolator and seismic restraints proposed for each piece of equipment, referencing material and seismic calculation by drawing numbers.
 - b. Shop Drawings
 - i. When walls and slabs are used as seismic restraint locations, details of acceptable methods for conduits, busways, cable bus and cable trays must be included.
 - ii. Indicate isolation devices selected with complete dimensional and deflection data before condition is accepted for installation.
 - iii. Provide specific details of seismic restraints and anchors; include number, size and locations for each pipe of equipment.
 - iv. Coordinated or contract drawings shall be marked with the specific locations and types of restraints shown for conduits, busway and cable tray. Rod bracing and assigned load at each restraint location shall be clearly delineated. Tributary loads shall be considered for proper restraint sizing.

- v. For ceiling suspended equipment provide minimum and maximum installation angle allowed for restraint system as well as braced and un-braced rod lengths at each allowable installation condition.

B. Related Work

1. Supplementary Support Steel

- a. Contractor shall supply supplementary support steel and connections for all equipment and materials as required.

1.11 SIZE OF EQUIPMENT

- A. Investigate each space in the structure through which electrical equipment furnished under Division 16 must pass to reach its final location. Coordinate shipping splits with the manufacturer to permit safe handling and passage through restricted areas in the structure.
- B. The equipment shall be kept upright at all times during storage and handling. When equipment must be tilted for passage through restricted areas, brace the equipment to ensure that the tilting does not impair the functional integrity of the equipment.

1.12 RECORD DRAWINGS

- A. As the work progresses, legibly record all field changes on a set of Project Contract Drawings, hereinafter called the "Record Drawings."
- B. Record Drawings shall accurately show the installed condition of the following items:
 - 1. Raceways and pull boxes.
 - 2. Conductor sizes and conduit fills.
 - 3. Panel Schedule(s).
 - 4. Control Wiring Diagram(s).
 - 5. Underground raceway and duct bank routing.
 - 6. Page/party system components, wiring and routing of raceways.
 - 7. Grounding system.
 - 8. Point to point connection diagrams:
 - a. Provide detailed point-to-point interconnection wiring diagrams for all equipment furnished under Divisions 13, and 16 requiring an electrical connection; either control, signal, or power, as indicated. All communication system wiring shall be included.
 - b. Point-to-point connection diagrams shall be produced with AutoCad 2019 software. A separate drawing shall be provided for each diagram. One complete diagram shall be included on a drawing.
 - c. Refer to the TMWRF Electrical CAD Standards for details related to Drawing Production.

- d. Submit samples of the point-to-point (PTP) interconnection diagrams to the Engineer for approval at the beginning of the construction phase. The sample drawings shall indicate the drawing format, equipment and device labeling and wire tagging methodology to be used for all diagrams. Five separate sample diagrams shall be submitted. The diagrams shall include the following information:
 - e. Circuit origin, destination and wire numbers.
 - f. Field wiring terminal strip names and numbers.
 - g. Each point-to-point interconnection diagram shall be unique with diagram number, wire numbers, device numbers, equipment numbers and location designations.
- h. Submit detailed PTP connection diagrams for each system. The diagram shall show all components of the circuit both analog, digital, and discrete, including all relays, switches, and starters which are being provided for proper operation. Pneumonic designations used shall correspond to the loop numbers indicated in the contract documents and Sections 01672, 17102 and 17103. The format shall be the Instrument Society of America, Standard for Instrument Loop Diagrams, ISA-S5.4 plus the following requirements:
 - i. Show all interconnecting wiring between equipment, panels, terminal junction boxes and field mounted components. The diagrams shall show all components and panel terminal board identification numbers and all wire numbers. This diagram shall include all intermediate terminations between field elements and panels (e.g. terminal junction boxes). The diagrams shall be coordinated with the work to be performed under Divisions 11, 16 and 17.
 - ii. Show locations of all devices.
 - iii. Show all power back to termination on terminal block or panel board, including circuit breaker size, as applicable.
 - iv. Show all grounding points with cabinets and panels and identify the connection point of individual components.
 - v. Each PTP connection diagram shall be submitted on a 24-in by 36-in sized sheet with all the information needed for installation, checkout, startup and maintenance. Each diagram shall contain the following information:
 - 1. All devices or items with clear labeling and identification. Refer to Section 01672 – Asset Identification and Labeling.
 - 2. Each component of the circuit, including wire numbers and connections. The wires shall be tagged at every device, piece of equipment and in every junction box, pull box terminal cabinet, manhole and handhole. Tagging of the wires or cables shall agree with the P&ID, Loop Diagrams, Equipment Lists and Sections 01672 and 17103. The nomenclature system and system tagging requirements are included in Divisions 1 and
 - 3. Word descriptions of circuit functions. The title should be adequate, but if not, a supplemental note shall be added. A description of special features or functions which are not obvious or implied in the title, especially safety and shutdown circuits, is required. The identification of safety and shutdown circuits is especially important.

4. All interconnections with identifying numbers for electrical cables and conductor pairs. This identification of connections includes junction boxes, computer input/output (I/O) connections, grounding system and grounding connections.
5. Locations of devices, such as, but not limited to: field, panels, auxiliary equipment, termination cabinets, local control panels, switchgear, motor control centers, and panel boards.
6. Electrical power supply requirements designation voltage and other applicable requirements.
7. Identifying numbers for equipment, including devices, panels, terminal boxes, junction boxes, motor control centers, switchgear and panel boards
8. The PTP connection diagrams shall be produced on reproducible vellum (24-in by 36-in) with 1/8-in letter size which can be reduced to (half size) for field use and still be legible.
9. Each PTP connection diagram shall contain only one circuit or loop. Care must be used to prevent overcrowding and space left for future additions and circuit data.
10. A consistent pattern (horizontal or vertical) shall be developed for presentation. The drawing shall be divided into section for relative location of devices.
11. The symbols used shall be consistent with the symbols shown on the contract drawings and symbol sheets. The symbols in ANSI Y32.20 (ISA S5.1) are suitable for instrumentation devices. However, these symbols shall be expanded to include connection points and power sources to clarify certain connection and operation details required on the diagrams. Refer to Section 17103 – Process Instrumentation and Controls Diagram for details.

i. Data Base

- i. A data base that correlates the wire's identification number with the equipment and drawings shall be established with Microsoft Access Software.
- ii. The data base shall employ the following fields:
 1. Wire Identification Number
 2. Wire size and type
 3. Equipment tag number in which each end of wire terminates
 4. Termination point ID at each end (i.e. terminal strip & position on strip)
 5. Building identification code
 6. Process system code
 7. Shop drawing ID and page in which the respective field termination is indicated.

8. Interconnection Diagram number in which wire or equipment is indicated.
9. details.
- iii. The data base shall be configured to allow the user to sort and query the information.
- iv. The data base shall be provided to the CM in electronic and hard format
 1. Five copies of the data base shall be provided on electronic USB Media Drive 3.0.
 2. Seven hard copies shall be submitted for review and for insertion into the hard copy O&M manual sorted as follows:
- j. Provide Wire, Equipment and System Schedules:
 - i. Wire Schedules shall be sorted in list format with the following priorities:
 1. Wire ID Number
 2. Equipment ID where wire is terminated
 3. Termination point ID
 - ii. Equipment Schedule shall be sorted in page format. Each page shall include the Equipment tag number, the interconnection diagram on which it is indicated and wire ID numbers immediately below its respective Interconnection Diagram. Adjacent to the wire numbers shall be the termination equipment and terminals trip IDS and the respective shop drawing on which they are indicated. The sort shall have the following priorities, each page shall be arranged with:
 1. Equipment tag number
 2. Interconnection diagram number
 3. Wire ID Number
 - iii. System Schedule shall be sorted with the following priorities:
 1. System Code
 2. Equipment tag number
 3. Interconnection diagram
- C. Submit the record drawings and the schedule of control wiring raceways and wire numbers (or the point-to-point connection diagram) to the Engineer.

1.13 EQUIPMENT INTERCONNECTIONS

- A. Review shop drawings of equipment furnished under Divisions 13 and 16 and prepare coordinated wiring interconnection diagrams. Submit copies of wiring diagrams or tables with Record Drawings.

- B. Furnish and install all equipment interconnections.

1.14 MATERIALS AND EQUIPMENT

- A. Materials and equipment furnished under this contract shall be new.
- B. Material and equipment of the same type shall be the product of one manufacturer and shall be UL listed.
- C. Provide Quality Control.
- D. Warrant all equipment furnished. Refer to individual equipment sections for additional warranty items.

1.15 EQUIPMENT IDENTIFICATION

- A. Identify equipment, disconnect switches, separately mounted motor starters, control stations, etc. furnished under Division 16 with the name of the equipment it serves. Motor control centers, control panels, panelboards, switchboards, switchgear, junction or terminal boxes, transfer switches, etc. shall have nameplate designations as shown on the Drawings.
- B. Nameplates shall be engraved, laminated plastic, not less than 1/16-in thick by 3/4-in by 2-1/2-in with 3/16-in high white letters on a black background.
- C. Nameplates shall be screw mounted to NEMA 1 enclosures. Nameplates shall be bonded to all other enclosure types using an epoxy or similar permanent waterproof adhesive. Two sided foam adhesive tape is not acceptable. Where the equipment size does not have space for mounting a nameplate the nameplate shall be permanently fastened to the adjacent mounting surface.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 SLEEVE AND FORMS FOR OPENINGS

- A. Provide and place all sleeves for conduits penetrating floors, walls, partitions, etc. Locate all slots for electrical work and form before concrete is poured.
- B. Exact locations are required for stubbing-up and terminating concealed conduit. Obtain shop drawings and templates from equipment vendors or other subcontractors and locate the concealed conduit before the floor slab is poured.
- C. Where setting drawings are not available in time to avoid delay in scheduled floor slab pours, the Engineer may allow the installations of such conduit to be exposed. Requests for this deviation must be submitted in writing. No additional compensation for such change will be allowed.
- D. Seal all openings, sleeves, penetration and slots as specified in Section 16110.

3.2 CUTTING AND PATCHING

- A. Cutting and patching shall be done in a thoroughly workmanlike manner and be in compliance with modifications and repair to concrete. Saw cut concrete and masonry prior to breaking out sections.
- B. Core drill holes in concrete floors and walls as required.

- C. Install work at such time as to require the minimum amount of cutting and patching.
- D. Do not cut joists, beams, girders, columns or any other structural members.
- E. Cut opening only large enough to allow easy installation of the conduit.
- F. Patching to be of the same kind and quality of material as was removed.
- G. The completed patching work shall restore the surface to its original appearance or better.
- H. Patching of waterproofed surfaces shall render the area of the patching completely waterproofed.
- I. Remove rubble and excess patching materials from the premises.
- J. When existing conduits are cut at the floor line of wall line, they shall be filled with grout of suitable patching material.

3.3 INSTALLATION

- A. Work not installed according to the Drawings and Specification shall be subject to change as directed by the Engineer at Contractor's expense.
- B. Electrical equipment shall be protected against mechanical and water damage. Store all electrical equipment in dry permanent shelters. Do not install electrical equipment in place until structures are weather-tight.
- C. Damaged equipment shall be replaced or repaired by the equipment manufacturer, at the Engineer's discretion and at the Contractor's expense.
- D. Repaint any damage to factory applied paint finish using touch-up paint furnished by the equipment manufacturer. The entire damaged panel or section shall be repainted in accordance with the field painting requirements specified in Section 09902 at the Contractor's expense.

3.4 MANUFACTURERS SERVICE

- A. Provide manufacturer's services for testing and start-up of the following equipment:
 - 1. Intercom and Paging System (1 days 1 trips minimum)
- B. Testing and startup shall not be combined with training. Testing and start-up time shall not be used for manufacturer's warranty repairs.

3.5 TRAINING

- A. Provide manufacturer's services for training of plant personnel in operation and maintenance of the equipment furnished under Division 16.
 - 1. Intercom and Paging System (1 days 1 trips minimum)
- B. The cost of training programs to be conducted with TMWRF's personnel shall be included in the Contract Price. The training and instruction, insofar as practicable, shall be directly related to the system being supplied.
- C. Provide detailed O&M manuals to supplement the training courses. The manuals shall include specific details of equipment supplied and operations specific to the project.

- D. The training program shall represent a comprehensive program covering all aspects of the operation and maintenance of each system.
- E. All training schedules shall be coordinated with and at the convenience of TMWRF. Shift training may be required to correspond to TMWRF's working schedule.
- F. Within 7 days of contract award to the Contractor, submit an overview of the proposed training plan. This overview shall include, for each course proposed:
 - 1. An overview of the training plan.
 - 2. Course title and objectives.
 - 3. Prerequisite training and experience of attendees.
 - 4. Recommended types of attendees.
 - 5. Course Content - A topical outline.
 - 6. Course Duration.
 - 7. Course Location - Training center or job site.
 - 8. Course Format - Lecture, laboratory demonstration, etc.
 - 9. Schedule of training courses including dates, duration and locations of each class.
 - 10. Resumes of the instructors who will actually implement the plan.
- G. The Engineer will review the training plan submittal with TMWRF staff.

END OF SECTION

SECTION 16110

RACEWAYS, BOXES, FITTINGS AND SUPPORTS

PART 1 GENERAL

1.1 SCOPE OF WORK

- A. Furnish and install complete raceway systems as shown on the Drawings and as specified herein.
- B. Home runs indicated are to assist the contractor in identifying raceways to be installed concealed or exposed. Raceways identified to be installed exposed on the Drawings shall be run near the ceilings or along the walls of the areas through which they pass and shall be routed to avoid conflicts with HVAC ducts, cranes and hoists, lighting fixtures, doors and hatches. Raceways indicated to be run concealed shall be run in the center of concrete floor slabs, in partitions, or above hung ceilings, as required.
- C. Raceways and conductors are not shown completely on the Drawings, including but not limited to raceways and conductors: between other miscellaneous low voltage and signal systems, except where they are required to pass through a restricted or designated space. Conduit and wiring descriptions are indicated on the riser diagrams for the Alarm System. Home runs indicated, are to assist the Contractor in identifying raceways to be installed concealed or exposed. Raceways and conductors shall be provided for complete and operating systems. Raceways indicated to be run exposed on the Drawings shall be run near the ceilings or along the walls of the areas through which they pass and shall be routed to avoid conflicts with HVAC ducts, cranes and hoists, lighting fixtures, doors and hatches, etc. Raceways indicated to be run concealed shall be run in the center of concrete floor slabs, in partitions, or above hung ceilings, as required.
- D. Furnish all labor, materials, equipment, accessories and components and install a complete seismic restraint and support system for raceway systems as indicated on the Drawings and as specified herein.
 - 1. All supports, hangers, bracing and appurtenances shall conform to the latest applicable requirements of the State of Nevada except as supplemented or modified by the requirements specified in this Section.
- E. The electrical subcontractor shall engage the services of an independent professional engineer registered in the State of Nevada, with specific experience in the design of seismic restraints and supports for electrical supporting systems hereinafter referred to as support engineer.

1.2 RELATED WORK

- A. Asset Identification and Labeling is included in Section 01672.
- B. Acceptance testing and Facility Start-up is included in Section 01756.
- C. Training and Demonstration Period is included in Section 01820.
- D. Operations and Maintenance Data is included in Section 01830.

1.3 SUBMITTALS

- A. Submit, in accordance with Section 01300, the manufacturers' names and product designation or catalog numbers with marked cut sheets of all materials specified.

- B. Submittals shall include type of hanger and/or support, location, support reaction transmitted to the structure and type of anchor and other supporting appurtenance including structural fasteners.

PART 2 PRODUCTS

2.1 RACEWAYS AND FITTINGS

A. Steel Conduit and Fittings

1. Rigid metal conduit (GRS), couplings, factory elbows and fittings shall be heavy wall steel tubing with a hot-dipped galvanized finish inside and out after threading and shall comply with ANSI C 80.1 and UL/6.
2. Intermediate metal conduit (IMC), couplings, factory elbows and fittings shall be medium wall steel tubing with a hot-dipped galvanized finish inside and out after threading and shall comply with UL/1242.
3. Electrical metallic tubing (EMT), factory elbows and fittings shall be thin wall steel tubing with an electrically galvanized finish after fabrication and comply with ANSI C80.3 and UL/797.
4. Acceptable manufacturers:
 - a. Allied Tube & Conduit Corp.
 - b. LTV Steel Tubular Products Corp.
 - c. Triangular PWC Inc.
 - d. Or approved equal.
5. Rigid metal and intermediate metal conduit fittings shall be of the threaded type, and shall be steel or malleable iron, with a hot-dipped galvanized finish. Threadless fittings and split couplings are not allowed except in specific applications as approved by the Engineer.
6. Electrical metallic tubing fittings shall be of the rain tight, concrete tight, compression type with malleable iron or pressure cast steel body, steel hex type compression nut and electrically galvanized finish.
7. Acceptable manufacturers:
 - a. Appleton Electric Co.
 - b. O-Z Gedney Co.
 - c. RACO Inc.
 - d. Gould/Efcor
 - e. Steel City
 - f. Or approved equal

B. PVC Coated Rigid Steel Conduit and Fittings

1. PVC coated rigid steel conduit shall be heavy wall steel tubing with a hot-dipped galvanized finish inside and out after threading with a minimum 0.040-in thick, polyvinyl chloride coating permanently bonded to it and an internal chemically cured urethane or enamel coating. The rigid steel conduit shall comply to ANSI C80.1 and UL/6 prior to coating.
2. PVC coated couplings, factory elbows and fitting shall be furnished with a PVC coating bonded to steel the same thickness as used on the PVC coated conduit. The ends of all couplings, fittings, etc. shall have a minimum of one pipe diameter in length of PVC overlap.
3. Acceptable manufacturers:
 - a. "OCAL" as manufactured by Thomas & Betts
 - b. "Plasti-Bond Red" as manufactured by Robroy Industries
 - c. Triangle PWC Inc
 - d. Or approved equal

C. Non-Metallic Conduit and Fittings

1. PVC conduit shall be rigid polyvinyl chloride schedule 40. Rigid PVC conduit up to trade sizes 4-in shall comply with NEMA TC-2 and UL/651 and shall be sunlight resistant, rated for use with 90-degree C conductors in exposed, direct burial or concrete encased applications. Underground utility duct, over 4-in trade size and above, shall be high density polyethylene (HDPE) Schedule 40 conduit encased in concrete, rated for use with 90-degree C conductors and shall comply with NEMA TC-8 and ASTM F512.
2. Connectors, couplings, fittings and ancillary materials shall be supplied by the conduit manufacturer.
3. Acceptable manufacturers:
 - a. Carlon Corp.
 - b. Certained Corp.
 - c. Conux Pipe Systems, Inc.
 - d. Or approved equal.

D. Liquid-tight Flexible Metal Conduit, Couplings and Fittings

1. Liquid-tight flexible metal conduit shall be square locked, galvanized steel flexible conduit with a moisture proof, flame resistant, polyvinyl chloride jacket, for use with rigid metal conduit systems. Sealtite, Type UA, manufactured by the Anaconda Metal Hose Div.; Anaconda American Brass Co.; American Flexible Conduit Co., Inc.; Universal Metal Hose Co. or equal.
2. Liquid-tight conduit fittings shall be hot-dipped mechanically galvanized, positive grounding, screw in type. Provide external bonding lugs on sizes 1-1/4-in and larger. Box connectors shall have insulated throats as manufactured by the Thomas & Betts Co.; Crouse-Hinds Co. or equal.

3. Acceptable Manufacturers:
 - a. American Flexible Conduit Co.
 - b. Anaconda Metal Hose/ANAMET Inc.
 - c. Electri-flex Co.
 - d. Thomas & Betts
 - e. O-Z Gedney
 - f. Or approved equal

2.2 BOXES AND FITTINGS

A. Dry and Damp Location Boxes and Fittings

1. Outlet boxes shall be zinc-galvanized, 2-1/8 in extra depth, pressed steel with knockouts and of size and type suitable for the intended application.
2. Boxes that are less than 100 cubic inches in size used for junction or pull boxes shall be zinc galvanized pressed steel not less than 14 USS gauge with appropriate blank covers, minimum size 4-11/16-in square by 2-1/8-in deep.
3. Boxes that are 100 cubic inches and larger shall be constructed of hop dip galvanized sheet steel without knockouts. Covers shall be secured with round head brass machine screws. All joints shall be welded and ground smooth.
4. Terminal cabinets shall be NEMA 12 sheet steel unless otherwise shown on the Drawings. Boxes shall be painted and have continuously welded seams. Welds shall be ground smooth and galvanized. Box bodies shall be flanged and shall not have holes or knockouts. Box bodies shall not be less than 14-gauge metal and covers shall not be less than 12 gauge metal. Terminal boxes shall be furnished with latching hinged doors, terminal mounting straps and brackets. Terminal blocks shall be rated not less than 20A, 600V.
5. Acceptable Manufacturers:
 - a. Appleton
 - b. Raco
 - c. Steel City
 - d. Hoffman
 - e. Electromate Division of Robroy Ind.
 - f. Wiegmann

B. Wet Location Boxes and Fittings

1. NEMA 4 terminal boxes, junction boxes, pull boxes, etc, shall be sheet Type 316 stainless steel unless otherwise shown on the Drawings. Boxes shall have continuously welded seams and mounting feet. Welds shall be ground smooth. Boxes shall be flanged and shall not have

holes or knockouts. Box bodies shall not be less than 14 gauge metal and covers shall not be less than 12 gauge metal. Covers shall be gasketed and fastened with stainless steel clamps. Terminal boxes shall be furnished with hinged doors, terminal mounting straps and brackets. Terminal blocks shall be NEMA type, not less than 20 Amps, 600 Volt.

2. Cast or malleable iron device boxes shall be Type FD. Boxes and fittings shall have cadmium-zinc finish with cast covers and stainless-steel screws.
3. Cast aluminum device boxes shall be Type FD. Boxes and fittings shall be copper free aluminum with cast aluminum covers and stainless-steel screws
4. Acceptable Manufacturers:
 - a. Appleton
 - b. Crouse-Hinds
 - c. Steel City
 - d. Hoffman
 - e. Electromate - Division of Robroy Ind.
 - f. Or approved equal

C. Corrosive Location Boxes

1. NEMA 4X PVC coated outlet boxes shall be used with PVC coated conduit shall be furnished with a PVC coating bonded to the metal, the same thickness as used on the coated steel.
2. Acceptable manufacturers:
 - a. "OCAL" as manufactured by Thomas & Betts
 - b. "Plasti-Bond Red" as manufactured by Robroy Industries
 - c. Triangle PWC Inc
 - d. Or approved equal
3. NEMA 4X terminal boxes, junction boxes and pull boxes shall be fiberglass reinforced plastic with stainless steel hardware and gasketed covers. Terminal boxes shall be furnished with hinged doors, terminal mounting straps and brackets. Terminal blocks shall be NEMA type, not less than 20 Amps, 600 Volt.
4. Acceptable Manufacturers:
 - a. Hoffman
 - b. Stahlin - Division of Robroy Ind.
 - c. English Electric
 - d. Or approved equal

D. Hazardous (Classified) Location Boxes

1. Explosion-proof boxes shall be designed for Class 1, Group D, Division 1 hazardous locations. They shall be cast iron with cadmium-zinc or hot-dipped galvanized finish, stainless steel or hot-dipped galvanized bolts; Type EJB as manufactured by the Crouse-Hinds Company; Appleton Electric Co.; The Pyle-National Co. or equal.]
2. Explosion-proof boxes shall be designed for Class 1, Group D, Division 1 hazardous locations, and shall also have O-ring seals to meet NEMA 4 requirements. Boxes shall be aluminum, with stainless steel hinged covers and stainless-steel bolts; Type EJB-N4 as manufactured by the Crouse-Hinds Co.; Appleton Electric Co.; Adalet-PLM or equal.]

E. Miscellaneous Fittings

1. Flexible couplings shall be type ECGJH as manufactured by the Crouse-Hinds Co.; Appleton Electric Co.; Killark Electric Manufacturing Co. or equal.
2. Conduit hubs shall be as manufactured by Myers Electric Products, Inc. or equal.
3. Conduit wall seals for new concrete walls below grade shall be O.Z./Gedney Co., Type WSK; Linkseal; Spring City Electrical Manufacturing Co., Type WDP or equal.
4. Conduit wall seals for cored holes shall be Type CSMC as manufactured by the O.Z./Gedney Co. or equal.
5. Conduit wall and floor seals for sleeved openings shall be Type CSMI as manufactured by the O.Z./Gedney Co. or equal.
6. Combination expansion-deflection fittings embedded in concrete shall be Type XD as manufactured by the Crouse-Hinds Co.; Type AXDX as manufactured by O.Z./Gedney Co.; Type DF as manufactured by Appleton Electric Co. or equal.
7. Combination expansion-deflection fittings installed exposed shall be Type XD as manufactured by Crouse-Hinds Co.; Type AXDX as manufactured by O.Z. Gedney Co.; Type DF as manufactured by Appleton Electric Co. or equal.
8. Explosion proof fittings shall be as manufactured by the Crouse-Hinds Co.; Appleton Electric Co.; O.Z./Gedney Co. or equal.
9. Conduit sealing bushings shall be O.Z./Gedney, Type CSB or equal.
10. Grounding bushings shall be malleable iron with integral insulated throat rated for 150 degrees C, with solderless lugs as manufactured by Crouse Hinds/Cooper, Series HGLL; Appleton, Series GIB; O.Z./Gedney, Type HBLG or equal.

2.3 HARDWARE

A. Conduit Mounting Equipment

1. In dry indoor areas, hangers, rods, backplates, beam clamps, channel, etc, shall be galvanized iron or steel.
2. PVC coated steel channel with stainless steel hardware shall be used in areas designated "WET" or "CORROSIVE" on the Drawings and in outdoor locations. Fiberglass channel shall be resistant to the chemicals present in the area in which it is used.

3. Furnish any and all necessary supports, brackets, conduit sleeves, racks and bracing as required. All boxes and hardware shall be galvanized zinc plated steel except that stainless steel shall be used in areas designated as “WET” or “CORROSIVE” on the Drawings.

B. Conduit Identification Plates

1. Conduit identification plates shall be embossed stainless steel with stainless steel band, permanently secured to the conduit without screws. They shall include conduit ID number and equipment it feeds. Designate where possible “from equipment” to “end equipment”; i.e “PCU003-FIT10051”.
2. Identification plates shall be as manufactured by the Panduit Corp. or equal.

C. Wall and Floor Slab Opening Seals

1. Wall and floor slab openings shall be sealed with a UL approved expanding material which equals or exceeds the fire rating of the wall or floor construction as manufactured by the Thomas & Betts Corp.; Pro Set Systems; Neer Mfg. Co.; Specified Technologies, Inc. or equal.

D. Cold Galvanizing Compound

1. Cold galvanizing compound shall be as manufactured by ZRC Products Company, a Division of Norfolk Corp. or equal.

E. Conduit Supports

1. Trapezes

- a. In dry indoor areas, beams, channels, struts, hangers, bracing, rods, beam clamps, accessories and components shall be galvanized steel.
- b. PVC coated steel or stainless-steel beams, channels, struts or fiberglass beams, channels, struts with stainless steel hangers, bracing, rods, beam clamps, accessories and components shall be used in areas designated “WET”, “DAMP” and “CORROSIVE” where indicated and in outdoor locations. Fiberglass channels shall be resistant to the chemicals present in the area in which it is used.

2. Flush Mounted Supports

- a. In dry indoor areas, channels, struts, accessories and components shall be galvanized steel.
- b. PVC coated steel or stainless steel channels, struts or fiberglass channels, struts with stainless, accessories and components shall be used in areas designated “WET”, “DAMP” and “CORROSIVE” where indicated and in outdoor locations. Fiberglass channels, struts shall be resistant to the chemicals present in the area in which it is used.

3. Conduit Racks

- a. In dry indoor areas, conduit racks, accessories and components shall be galvanized steel.
- b. PVC coated steel conduit racks or fiberglass conduit racks with stainless, accessories and components shall be used in areas designated “WET”, “DAMP” and “CORROSIVE” where indicated and in outdoor locations. Fiberglass channels shall be resistant to the chemicals present in the area in which it is used.

4. Conduit Hangers

- a. In dry indoor areas, conduit clamps, rods, beam clamps, bracing, accessories and components shall be galvanized steel.
- b. Stainless steel conduit clamps, rods, beam clamps, bracing, accessories and components shall be used in areas designated “WET”, “DAMP” and “CORROSIVE” where indicated and in outdoor locations.

5. Adjustable steel and plastic band hangers, adjustable band hangers, adjustable swivel ring hangers and J-hangers shall not be allowed.

6. All hangers, bracing, rods, beam clamps, accessories and components shall be as manufactured by the Carpenter & Paterson Inc.; Grinnell Corporation; B-Line Systems Inc. or equal.

PART 3 EXECUTION

3.01 RACEWAY APPLICATIONS

- A. Refer to Table 16110-1 for specific raceway application requirements.
- B. All conduit of a given type shall be the product of one manufacturer.
- C. Refer to Section 16600 for underground applications.

**TABLE 16110-1
Raceway Application Guidelines**

<i>Location/Circuit Type</i>	<i>Raceway Type</i>
<p><u>All locations</u> Note: Select system.</p> <ul style="list-style-type: none"> ▪ Class 2 and 3 signal wiring and 4-20 mA instrumentation cables, non-fiber (copper) data highway. ▪ Fire alarm, security, and communications system wiring. 	<p>NOTE: Select areas.</p> <ul style="list-style-type: none"> ▪ Exposed - Galvanized rigid steel (GRS) conduit. Use PVC coated rigid steel conduit in corrosive areas. [Hazardous areas, areas designated as wet and outdoor areas.] ▪ Concealed - Galvanized rigid steel (GRS) conduit. ▪ Underground - Galvanized rigid steel (GRS) conduit in concrete reinforced ductbank. Use PVC coated steel conduit for single conduit direct burial applications. ▪ All conduit stubbed through slab shall be PVC coated rigid until first fitting. Minimum length of 3-inches exposed through slab.
<p><u>Clean, dry finished areas</u> - offices, administrative areas, lobbies, control room, lunch room, toilets, and laboratories, etc.</p>	<ul style="list-style-type: none"> ▪ Conceal raceways in walls above hung ceilings in rooms and areas that have finished interiors. Surface raceway for multiple receptacle, voice, and data outlets in labs and control rooms or in offices where specified. ▪ 3/4 or 1-in electrical metallic tubing (EMT) for lighting, switch, and receptacle circuits exposed above hung ceilings or concealed in partition walls. Galvanized rigid steel (GRS) above 1-in. ▪ Flexible, armor interlocked cable assembly (Type MC) or flexible conduit may be used as branch circuit wiring in these areas. ▪ All conduit stubbed through slab shall be PVC coated rigid until first fitting. Minimum length of 3-inches exposed through slab
<p><u>Clean, dry non-finished areas</u> - electrical rooms, generator rooms, mechanical rooms, shops, dry storage, etc.</p>	<ul style="list-style-type: none"> ▪ Exposed conduit for power wiring, lighting, switch, and receptacle circuits - Galvanized rigid steel (GRS). ▪ Concealed conduit for power wiring, lighting, switch, and receptacle circuits - Schedule 40 PVC conduit when embedded within concrete floor slabs. ▪ All conduit stubbed through slab shall be PVC coated rigid until first fitting. Minimum length of 3-inches exposed through slab
<p><u>Process areas</u> - non-corrosive, non-hazardous locations designated as DAMP or WET on the Drawings.</p>	<p>NOTE: Select following as applicable.</p> <ul style="list-style-type: none"> ▪ Exposed conduit for power wiring, lighting, switch, and receptacle circuits - PVC Coated steel. ▪ Concealed conduit for power wiring, lighting, switch, and receptacle circuits - Schedule 40 PVC conduit when embedded within concrete floor slabs. ▪ All conduit stubbed through slab shall be PVC coated rigid until first fitting. Minimum length of 3 inches exposed through slab
<p><u>Corrosive areas</u> - chemical storage and handling areas, underground vaults, within tanks or clearwells, filter pipe galleries and locations where designated corrosive on the Drawings.</p>	<p>NOTE: Select following as specified.</p> <ul style="list-style-type: none"> ▪ Exposed conduit for power wiring, lighting, switch, and receptacle circuits – Schedule 80 PVC for sized 3/4 and 1-in. Schedule 40 PVC above 1-in. ▪ Concealed conduit for power wiring, lighting, switch, and receptacle circuits - Schedule 40 PVC conduit when embedded within concrete floor slabs or structures.

TABLE 16110-1 Raceway Application Guidelines	
Location/Circuit Type	Raceway Type
<u>Hazardous areas</u> - all locations - Class 1, Division 1 and 2.	<ul style="list-style-type: none"> ▪ Exposed and concealed conduit for power wiring, lighting, switch, and receptacle circuits - Galvanized rigid steel (GRS). All conduit stubbed through slab shall be PVC coated rigid until first fitting. Minimum length of 3 inches exposed through slab
<u>Outdoor areas</u> - all locations.	<ul style="list-style-type: none"> ▪ Exposed conduit for power wiring, lighting, switch, and receptacle circuits – PVC coated rigid. PVC conduit shall not be used exposed. ▪ Concealed conduit for power wiring, lighting, switch, and receptacle circuits - Schedule 40 PVC conduit when embedded within concrete structures. ▪ All conduit stubbed through slab shall be PVC coated rigid until first fitting. Minimum length of 3-inches exposed through slab

3.2 BOX APPLICATIONS

- A. Unless otherwise specified herein or shown on the Drawings, all boxes shall be metal.
- B. Exposed switch, receptacle and lighting outlet boxes and conduit fittings shall be cast or malleable iron, except that cast aluminum shall be used with aluminum conduit and non-metallic PVC shall be used with PVC.
- C. Concealed switch, receptacle and lighting outlet boxes shall be pressed steel.
- D. Terminal boxes, junction boxes and pull boxes shall have NEMA ratings suitable for the location in which they are installed, as specified in Section 16000.
- E. Boxes flush in block, brick or tile walls shall be located at a course line and provided with square tile covers. Flush boxes shall not project beyond the finished surfaces nor shall surfaces project more than 1/8-in beyond the box enclosure. Wiring devices located in close proximity to each other shall be installed in one solid gang box with single cover.
- F. All conduit bodies and pulling outlets shall comply with NEC wire bending space requirements. Mogul type fittings shall be used for sizes 2-1/2-in and larger.

3.3 FITINGS APPLICATIONS

- A. Combination expansion-deflection fittings shall be used where exposed rigid metal conduits cross structure expansion joints or in straight runs where expansion is anticipated. Combination expansion-deflection fittings shall be installed where embedded rigid metal conduit cross structural expansion joints. Refer to Structural Drawings for expansion joint locations. Provide bonding jumpers around fittings.
- B. All underground conduit penetrations at walls or other structures shall be sealed watertight. Conduit wall seals and sleeves shall be used in accordance with the manufacturer's installation instructions and the details shown on the Drawings.
- C. Conduit sealing bushings shall be used to seal conduit ends exposed to the weather and at other locations shown on the Drawings.

D. Gas Containment Area Sealing

1. Internally and externally seal each conduit entering or leaving any area containing noxious gases to prevent contamination into clean areas via the conduit system. Areas requiring this protection are rooms where chlorine, ammonia and ozone are stored, generated or handled. Caulking material for conduit internal use shall be synthetic elastomer type, 3M, Series CP25 or approved equal. External sealing shall be in accordance with the typical details shown on the Drawings.

E. Insulated throat grounding bushings shall be used where specified herein, in Section 16660 and where conduits stub up into electrical equipment such as MCC's, switchgear, etc.

3.4 INSTALLATION

A. No conduit smaller than 3/4-in electrical trade size shall be used, nor shall any have more than the equivalent of three 90 degree bends in any one run. Pull boxes shall be provided as required by the NEC after every 270 degrees of bends and for straight run not to exceed 200 feet or as directed.

B. No wire shall be pulled until the conduit system is complete in all details; in the case of concealed work, until all rough plastering or masonry has been completed; in the case of exposed work, until the conduit system has been completed in every detail.

C. All conduit which may under any circumstance contain liquids such as water, condensation, liquid chemicals, etc., shall be arranged to drain away from the equipment served. If conduit drainage is not possible, conduit seals shall be used to plug the conduits. The ends of all conduits shall be temporarily plugged to exclude dust, moisture and debris from entering during construction.

D. Conduit ends exposed to the weather shall be sealed with conduit sealing bushings.

E. Conduits noted as spare shall be capped or plugged at both ends with easily removable fittings.

F. Conduit terminating in NEMA 3R, 4, 4X and 12 enclosures shall be terminated with Myers type conduit hubs.

G. Conduit terminating in pressed steel boxes shall have double locknuts and insulated bushings.

H. Conduits containing equipment grounding conductors and terminating in sheet steel boxes shall have insulated throat grounding bushings.

I. Conduits shall be installed using threaded fittings except for PVC or EMT.

J. The use of running threads is prohibited. Where such threads are necessary, a 3-piece union shall be used.

K. Rigid galvanized steel conduits buried in earth shall be completely painted with bitumastic.

L. Rigid galvanized steel conduits which have been field cut and threaded shall be painted with cold galvanizing compounds.

M. In hazardous locations, conduits terminating at boxes enclosing circuit opening equipment shall be sealed at the entrance to the enclosure with approved compound filled sealing fittings to prevent passage of explosive or combustible gases through the conduits. All conduits leading from or entering hazardous locations shall be similarly sealed at points of exit or entrance. Exposed conduits passing through hazardous locations shall be sealed at both the entrance to and the exit from the hazardous locations. A sealing compound installation schedule shall be presented to

TMWRF for approval. Each installation shall be signed off by the Contractor and the RE and each fitting shall be legibly marked with red paint to indicate that the sealing compound has been installed.

- N. Conduit sealing and drain fittings shall be installed in all hazardous (classified) areas designated Class 1, Division 1, and Class 1, Division 2.
- O. Conduit sealing and drain fittings shall be installed on all conduits entering and leaving any area containing noxious gases to prevent contamination into clean areas via the conduit system. Areas requiring this protection are: rooms where [chlorine, ammonia, and ozone] are stored, generated or heated. A sealing compound installation schedule shall be presented to TMWRF for approval. Each installation shall be signed off by the Contractor and TMWRF and each fitting shall be legibly marked with red paint to indicate that the sealing compound has been installed.
- P. Liquid-tight flexible metal conduit shall be used for all motor terminations, the primary and secondary of transformers, generator terminations and other equipment where vibration is present or may require removal. Non-metallic flexible conduit can be used with rigid PVC conduit systems.
- Q. Flexible couplings shall be used in hazardous locations for all motor terminations and other equipment where vibration is present.
- R. Flexible metallic conduit (Type MC cable) shall be used for recessed fluorescent fixtures in hung ceilings to connect fixtures to the conduit system.
- S. PVC coated rigid steel conduit shall be used as a transition section where concrete embedded conduit stubs out of floor slabs or through below grade walls or where conduit installed under building slabs on grade stub out of floors. The PVC coated rigid steel conduit shall extend a minimum of 3-in into and out of the floor slab, concrete pad, or wall to allow for proper threading of the conduit.
- T. PVC conduit to non-metallic box connections shall be made with PVC socket to male thread terminal adapters with neoprene O-ring and PVC round edge bushings.
- U. PVC conduit shall be supported with non-metallic clamps, PVC coated steel racks and stainless-steel hardware.
- V. Expansion fittings shall be used on exposed runs of PVC conduit where required for thermal expansion. Installation and number of fittings shall be as recommended by manufacturer.
- W. PVC boxes, conduit fittings, etc., with integral hubs shall be solvent welded directly to the PVC conduit system.
- X. Non-metallic boxes with field drilled or punched holes shall be connected to the PVC conduit system with threaded and gasketed PVC Terminal Adapters.
- Y. Conduit supports, other than for underground raceways, shall be spaced at intervals not exceeding the distance required by the NEC to obtain rigid construction.
- Z. Single conduits shall be supported by means of one-hole pipe clamps in combination with one-screw back plates, to raise conduits from the surface. Multiple runs of conduits shall be supported on fabricated channel trapeze type racks with steel horizontal members and threaded hanger rods. The rods shall be not less than 3/8-in diameter. Surface mounted panel boxes, junction boxes, conduit, etc., shall be supported by spacers to provide a minimum of 1/2-in clearance between wall and equipment.

AA. Conduit Supports (Other than Underground Raceways)

1. Trapezes

- a. Conduit support trapezes shall be vertically supported every 10-ft or less, as required to obtain rigid conduit construction.
- b. Lateral seismic restraints (Sway Bracing) shall be spaced 30-ft or less.
- c. Horizontal seismic restraints shall be spaced at 40-ft or less. There shall be at least one horizontal restraint per horizontal run.
- d. Attachment to structural steel shall be by beam clamps or welded beam attachment. C-clamps will not be allowed for vertical hangers. Side beam clamps with beam hooks shall be used for seismic restraint only.
- e. Attachment to concrete shall be cast-in-place inserts, cast-in place welded plates with welded studs or stainless steel adhesive anchors.

2. Flush Mounted Supports

- a. Support shall be spaced 10-ft or less, as required to obtain rigid conduit construction.
- b. Attachment to concrete shall be with cast-in-place inserts, cast-in place welded plates with welded studs or stainless adhesive anchors.

3. Conduit Racks

- a. Support shall be spaced 10-ft or less, as required to obtain rigid conduit construction.
- b. Horizontal seismic restraints shall be spaced at 30-ft or less.
- c. Attachment to concrete shall be with cast-in-place inserts, cast-in place welded plate with welded studs or stainless adhesive anchors.

4. Conduit Hangers

- a. Conduit hangers shall be vertical supported 10-ft or less, as required to obtain rigid conduit construction.
- b. Lateral seismic restraints (Sway Bracing) shall be spaced 20-ft or less.
- c. Horizontal seismic restraints shall be spaced at 30-ft or less. There shall be at least one horizontal restraint per horizontal run.
- d. Attachment to structural steel shall be by beam clamps or welded beam attachment. C-clamps will not be allowed for vertical hangers. Side beam clamps with beam hooks shall be used for seismic restraint only.
- e. Attachment to concrete shall be cast-in-place inserts, cast-in place welded plates with welded studs or stainless steel adhesive anchors.

5. All reinforcing bars shall be located by the Electrical Subcontractor with the use of a rebar locator prior to installing adhesive capsule type anchors. Mark the location of all reinforcing bars in an area bounded by a line drawn at least 18-in from the edge of the support bearing/weld

plates on all four sides of the bearing/weld plates prior to fabricating and installing bearing/weld plates.

6. Where interference occurs, adjust anchor locations to clear reinforcing bars and alter support configuration at no additional cost to the Authority.
- BB. Miscellaneous steel for the support of fixtures, boxes, transformers, starters, contactors, panels and conduit shall be furnished and installed. Channel supports shall be ground smooth and fitted with plastic end caps.
- CC. Steel channels, flat iron and channel iron shall be furnished and installed for the support of all electrical equipment and devices, where required, including all anchors, inserts, bolts, nuts, washers, etc., for a rigid installation. Channel supports shall be ground smooth and fitted with plastic end caps.
- DD. Provide sway braces for cable trays and busducts. Sway braces shall be U-channel supports installed at a 45 degree angle from the tray or busduct and anchored to the concrete ceiling structure or structural support system. Braces shall be provided on 20-ft spacing centers. Alternate the direction of the bracing supports.
- EE. Conduits terminating at a cable tray or busduct shall be supported independently from the busduct or cable tray. Provide a conduit support within 1-ft of the cable tray or busduct. The weight of the conduit shall not bear on the cable tray or busduct.
- FF. All conduits on exposed work, within partitions and above suspended ceilings, shall be run at right angles to and parallel with the surrounding wall and shall conform to the form of the ceiling. No diagonal runs will be allowed. Bends in parallel conduit runs shall be concentric. All conduits shall be run perfectly straight and true.
- GG. Where conduits pass through openings in walls or floor slabs, the remaining openings shall be sealed against the passage of flame and smoke in accordance with UL requirements and the details shown on the Drawings. The sealing method shall have a UL fire rating, which equals or exceeds the fire rating of the wall or floor construction.
- HH. Conduits shall not cross pipe shafts, access hatches or vent duct openings. They shall be routed to avoid such present or future openings in floor or ceiling construction.
- II. Conduits passing from heated to unheated spaces, exterior spaces, refrigerated spaces, cold air plenums, etc., shall be sealed with "duct seal" as manufactured by Manville or seal fitting to prevent the accumulation of condensation.
- JJ. Conduits shall be located a minimum of 3-in from steam or hot water piping. Where crossings are unavoidable, the conduit shall be kept at least 1-in from the covering of the pipe crossed.
- KK. Mandrels shall be pulled through all existing conduits which will be reused and through all new conduits 2-in in diameter and larger prior to installing conductors.
- LL. 3/16-in polypropylene pull lines shall be installed in all new conduits noted as spares or designated for future equipment. Conduit noted as spare shall be capped or plugged at both ends with easily removable fittings
- MM. Emergency (generator) source and normal (power company) source feeders shall not be run through the same pull box.

- NN. Where no type or size is indicated for junction boxes, pull boxes or terminal cabinets, they shall be sized in accordance with the requirements of NEC Article 314. Enclosure type and material shall be as specified herein.
- OO. Pull or junction boxes shall be furnished and installed where shown on the Drawings, in every 200 feet of straight conduit runs or in runs where more than the equivalent of four 90 degree bends occur or at any point necessary for wire pulling and splicing. Splices shall not be made in pulling elbows.
- PP. A conduit identification plate shall be installed on all power, instrumentation, alarm and control conduits at each end of the run and at intermediate junction boxes, manholes, etc. Conduit plates shall be installed before conductors are pulled into the conduits. Exact identification plate location shall be coordinated with the Engineer at the time of installation to provide uniformity of placement and ease of reading. Conduit numbers shall be exactly as shown on the Drawings.
- QQ. Place inner duct in the conduit and allow to rest in place for a minimum of 72 hours prior to cutting each end to length.
- RR. Place the correct number of maximum sized inner ducts for the conduit with minimum 1/8-in clearance.

END OF SECTION

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SECTION 16120

WIRES AND CABLES (600 VOLT MAXIMUM)

PART 1 GENERAL

1.1 SCOPE OF WORK

- A. Furnish, install and test all wire, cable and appurtenances as shown on the Drawings and as specified herein.

1.2 RELATED WORK

- A. Electrical General Provisions in Section 16000.

1.3 SUBMITTALS

- A. Submit, in accordance with Section 01300, samples of proposed wire. Each sample shall have the size, type of insulation and voltage stenciled on the jacket.
- B. Approved samples will be sent to the project location for comparison by the Project Manager with the wire actually installed.
- C. Installed unapproved wire shall be removed and replaced at no additional cost to the Owner.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Carefully handle all conductors to avoid kinks and damage to insulation.

PART 2 PRODUCTS

2.1 GENERAL

- A. Wires and cables shall be of annealed, 98 percent conductivity, soft drawn copper.
- B. All conductors shall be stranded.
- C. Except for control, signal and instrumentation circuits, wire smaller than No. 12 AWG shall not be used.

2.2 BUILDING WIRE

- A. Wire for circuits not exceeding 150 Volts to ground shall be NEC type XHHW-2 as manufactured by the Okonite Co.; Carol Cable Co. Inc.; Pirelli Cable Corp. or equal.
- B. Multi-conductor control and power cables shall have stranded conductors with type XHHW-2 insulated. PVC jacket covering TC rated. Conductors shall be tin coated. Cable shall be TC rated meeting UL 1277 and IEEE 383 Standards. Cable shall be flame resistant, non-propagating and suitable for installation in a Class I, Division II hazardous location and for direct burial in earth. Power and control cables shall be furnished with a green ground conductor. Power cables shall be furnished with a white neutral conductor where required to serve phase to neutral loads. Cable shall be as manufactured by the Okonite Co.; Southwire Co.; General Cable Co., or equal.

2.3 CONTROL, STATUS AND ALARM WIRE

- A. Wire shall be No.14 AWG NEC type MTW-UL1015, tin coated stranded as manufactured by the Okonite Co.; Carol Cable Co. Inc.; Pirelli Cable Corp. or equal.
- B. Multi-conductor control cable, where shown on the Drawings, shall be stranded, tin coated, No. 14 AWG, 600 Volt, polyvinyl chloride insulated, nylon jacket over insulation, polyvinyl chloride jacket overall, Type TC as manufactured by the Okonite Co.; Pirelli Cable Corp. or equal.

2.4 INSTRUMENTATION WIRE

- A. Wire for process instrumentation signals (i.e. 1-5 VDC, 4-20 mADC), R.T.D., potentiometer and similar signals shall be:

1. Single pair cable:

- a. Conductors: 2 No. 16 tin coated, stranded and twisted on 2-in lay
- b. Insulation: PVC with 600 Volt, 105 degrees C rating
- c. Shield: 100 percent mylar tape with drain wire
- d. Jacket: PVC with UL Subject 13, UL 1581 and manufacturers' identification
- e. Max overall diameter: 0.262-in
- f. Miscellaneous: UL Subject 13, Type PLTC
- g. Manufacturers: Belden No. 1030; Manhattan No. M39119

2. Three conductor (triad) cable:

- a. Conductors: 3 No. 16 tin coated, stranded and twisted on 2-in lay
- b. Insulation: PVC with 300 Volt, 105 degrees C rating
- c. Shield: 100 percent mylar tape with drain wire
- d. Jacket: PVC with UL Subject 13, UL 1581 and manufacturers' identification
- e. Max overall diameter: 0.276-in
- f. Miscellaneous: UL Subject 13, Type PLTC
- g. Manufacturers: Belden No. 1031; Manhattan No. 39120

3. Multiple pair cables (where shown on the Drawings):

- a. Conductor: Multiple 2 No. 22 tin coated, stranded and twisted on a 2-in lay
- b. Insulation: PVC with 300 Volt, 105 degrees C rating
- c. Shield: Individual pairs shielded with 100 percent mylar tape and drain wire
- d. Jacket: PVC with UL Subject 13, UL 1581 manufacturers' identification

- e. Misc.: UL Subject 13, Type PLTC
 - f. Manufacturers: Belden No. 9330, 9331, 9332, 9333, 9335, 9337;
Manhattan No. M39149, M39150, M39151, M39152, M39154, M39156.
4. CAT6 unshielded cables (where shown on the Drawings):
- a. Conductor: 23AWG, 4 twisted pairs
 - b. Operating Temperature Range: 75 C/167 F
 - c. Maximum Operating Voltage: 300V
 - d. Bend Radius: 2 in/5mm

2.5 SPLICES (POWER CONDUCTORS)

- A. Compression type connectors shall be insulated with a heat shrink boot or outer covering and epoxy filling. Splice kits shall be as manufactured by Raychem; Ideal Industries; 3M Co. or equal.
- B. Solderless pressure connectors shall be self-contained, waterproof and corrosion-proof units incorporating prefilled silicone grease to block out moisture and air. Connectors shall be sized according to manufacturer's recommendations. The connectors shall be UL listed and CSA approved, as manufactured by King Technology, St Louis, MO; Ideal Industries, Inc., Sycamore, IL or equal.

2.6 TERMINATION AND SPLICES (CONTROL, STATUS AND ALARM CONDUCTORS)

- A. Termination connectors shall be of the locking fork-end (upturned leg ends) type as manufactured by Ideal Industries; 3M Co.; Panduit Corp. or equal.
- B. Insulated compression type connectors shall be of the expanded vinyl insulated parallel or pigtail type as manufactured by Ideal Industries; 3M Co.; Panduit Corp. or equal.
- C. Solderless pressure connectors shall be self-contained, waterproof and corrosion-proof units incorporating prefilled silicone grease to block out moisture and air. Connectors shall be sized according to manufacturer's recommendations. The connectors shall be UL listed and CSA approved, as manufactured by King Technology, St Louis, MO; Ideal Industries, Inc., Sycamore, IL or equal.

2.7 TERMINATIONS (INSTRUMENTATION CABLES)

- A. Termination connectors shall be of the locking fork-end (upturned leg ends) type as manufactured by Ideal Industries; 3M Co.; Panduit Corp. or equal.

2.8 WIRE AND CABLE MARKERS

- A. Wire and cable markers shall be "Omni-Grip" as manufactured by the W.H. Brady Co.; Thomas & Betts Co.; 3M Co. or equal.
- B. Wire and cables with diameters exceeding the capacity of the "Omni-Grip" shall be marked with pre-printed, self-adhesive vinyl tapes as manufactured by the W.H. Brady Co.; Panduit Corp. or equal.

2.9 DIRECT BURIED CABLE WARNING TAPE

- A. Tape shall be 6-in wide, red polyethylene not less than 0.0035-in thick. Tape shall be W.H. Brady Co., Catalog No. 91296 or equal.]

2.10 WALL AND FLOOR SLAB OPENING SEALS

- A. Wall and floor slab openings shall be sealed with "FLAME-SAFE" as manufactured by the Thomas & Betts Corp. or equal.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Uniquely identify all wires, cables and each conductor of multi-conductor cables (except lighting and receptacle wiring) at each end with wire and cable markers.
- B. Use lubrications to facilitate wire pulling. Lubricants shall be UL approved for use with the insulation specified.

3.2 WIRE COLOR CODE

- A. All wire shall be color coded or coded using electrical tape in sizes where colored insulation is not available. Where tape is used as the identification system, it shall be applied in all junction boxes, manholes and other accessible intermediate locations as well as at each termination.
- B. The following coding shall be used:

<u>System</u>	<u>Wire</u>	<u>Color</u>
24 Volts DC	Low voltage control	Blue
24 Volts AC	Low voltage control	Blue with white tracer
120 Volts AC	Control power	Red
120 Volts AC	Foreign Control Power	Yellow
240/120 Volts Single-Phase, 3 Wire Line 1	Neutral	White
	Black Line 2	Red
208Y/120, Volts 3 Phase, 4 Wire	Neutral	White
	Phase A	Black
	Phase B	Red
	Phase C	Blue
240/120 Volts 3 Phase, 4 Wire delta, center tap ground on phase coil A-C	Neutral	White
	Phase A	Black
	Phase B (High)	Orange
	Phase C	Blue

3.3 TERMINATIONS AND SPLICES

- A. Power conductors: Terminations shall be die type or set screw type pressure connectors as specified. Splices (where allowed) shall be die type compression connector and waterproof with heat shrink boot or epoxy filling for copper conductors # 4 AWG and larger. Splices shall be solderless pressure connectors with insulating covers for copper conductors # 6 AWG and smaller. Aluminum conductors (where specified) shall employ terminations and splices specifically designed for aluminum conductors.
- B. Control Conductors: Termination on saddle-type terminals shall be wired directly with a maximum of two conductors. Termination on screw type terminals shall be made with a maximum of two spade connectors. Splices (where allowed) shall be made with insulated compression type connectors.
- C. Instrumentation Signal Conductors (including graphic panel, alarm, low- and high-level signals): terminations same as for control conductors. Splices allowed at instrumentation terminal boxes only.
- D. Except where permitted by the Engineer no splices will be allowed in manholes, handholes or other below grade located boxes.
- E. Splices shall not be made in push button control stations, control devices (i.e., pressure switches, flow switches, etc.), conduit bodies, etc.

3.4 INSTRUMENTATION CABLES

- A. Instrumentation cables shall be installed in rigid steel raceways as specified. All circuits shall be installed as twisted pairs or triads. In no case shall a circuit be made up using conductors from different pairs or triads. Triads shall be used wherever three wire circuits are required.
- B. Terminal blocks shall be provided at all instrument cable junction and all circuits shall be identified at such junctions.
- C. Shielded instrumentation wire, coaxial, data highway, I/O and fiber optic cables shall be run without splices between instruments, terminal boxes, or panels.
- D. Shields shall be grounded as recommended by the instrument manufacturer and isolated at all other locations. Terminal blocks shall be provided for inter-connecting shield drain wires at all junction boxes. Where individual circuit shielding is required, each shield circuit shall be provided with its own block.
- E. Seal openings in slabs and walls through which wires and cables pass.

3.5 FIELD TESTING

- A. Test all 600 Volt wire insulation with a megohm meter after installation. Make tests at not less than 500 Volt. Submit a written test report of the results to the Engineer.

END OF SECTION

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SECTION 16600

UNDERGROUND SYSTEM

PART 1 GENERAL

1.1 SCOPE OF WORK

- A. Furnish and install a complete underground system of raceways, manholes and handholes as shown on the Drawings and as specified herein.
- B. All underground systems shall be steel reinforced and concrete encased unless indicated otherwise on the Drawings.
- C. The Contractor shall be responsible for setting manholes and handholes at the proper elevation such that the pitch of raceways will be towards manholes and handholes and away from structures, vaults and buildings.
- D. Where referred in this Section, raceways are underground conduits – Duct banks are a collection of underground raceways. Underground system is the collection of underground raceways, manholes and handholes.
- E. Duct banks shall be steel reinforced, and concrete encased up to the building, structure, vault, manhole and handhole.
 - 1. Duct bank, manhole and handhole depths vary. Coordinate with other utilities, yard piping, yard structures and field conditions to determine required depths and install raceways, manholes and handholes at that required depth at no additional cost to the TMWRF.
 - 2. Duct bank routing and manhole/handhole locations shown on the Drawings are diagrammatically depicted. Coordinate with other utilities, yard piping, yard structures and field conditions to determine required paths and depths at no additional cost to the TMWRF.

1.2 RELATED WORK

- A. Asset Identification and Labeling is included in Section 01672.
- B. Acceptance testing is included in Section 01756.
- C. Training and Demonstration Period is included in Section 01820.
- D. Operations and Maintenance Data is included in Section 01830.

1.3 SUBMITTALS

- A. Submit, in accordance with Section 01300, shop drawings and product data, for the following:
 - 1. Manholes and handholes
 - 2. Plastic duct spacers
 - 3. Manhole and handhole frames and covers
 - 4. Buoyancy calculations

5. Warning tape

PART 2 PRODUCTS

2.1 MATERIALS

- A. Raceways shall be polyvinyl chloride conduit encased in steel reinforced concrete, except that rigid steel conduit shall be used for 600 Volt shielded wire, I/O and data highway wiring. Refer to Section 16110 for material requirements.
- B. Cable racks, supports, pulling-in irons, manhole steps and hardware shall be galvanized steel as manufactured by Line Materials Co.; Underground Devices, Inc.; Chance or equal.
- C. Precast manholes and handholes shall be designed as specified below for precast concrete structures. Manufacturer shall provide buoyancy calculations to the Engineer for approval.
 - 1. Provide lifting lugs in each precast section for handling.
 - 2. All sections, flat slab tops and grade rings shall conform to ASTM C478.
 - 3. Base, riser and transition top sections shall have tongue and groove joints.
 - 4. Compressive strength for shipping shall be 4000 psi.
 - 5. Design precast concrete base, riser, transition top, flat slab top and grade ring for a minimum H-20 loading plus earth load. Earth load shall be calculated from the future grade indicated as final grade with a unit weight of 130 pcf.
 - 6. The date of manufacture, name and trademark of manufacturer shall be marked on the inside of each precast section.
 - 7. Provide integrally cast knock-out panels in precast concrete manhole and handhole sections at locations indicated and with sizes indicated. Knock-out panels shall have no steel reinforcing.
 - 8. Seal tongue and groove joints of precast manhole and handhole sections with rubber O-ring gasket. O-ring gasket shall conform to ASTM C443. In lieu of the O-ring gasket, a flexible joint sealant may be used. Sealant shall be Kent Seal No. 2; Con Seal No. 2; Ram-Nek or equal. Completed joints shall withstand 15 psi internal water pressure without leakage or displacement of gasket or sealant.
 - 9. Dampproofing shall be Hydrocide 648 by Sonneborn Building Products; Dehydratine 4 by A.C. Horn, Inc.; RIW Marine Liquid by Toch Bothers, or equal.
- D. Handholes shall be precast concrete, heavy-duty type, designed for a Class H-20 wheel load and conform to ASTM C478. Precast units shall be as manufactured by Chase Precast Corp.; Rotondo; American Precast Co. or equal and constructed to dimensions as shown on the Drawings.
- E. Manhole and handhole frames and covers shall be cast iron, heavy duty type for Class H-20-wheel loading as manufactured by Neenah; LeBaron; Vulcan or equal. Covers shall be marked and sized as shown on the Drawings.
- F. Ground rods and other grounding materials and methods shall be as specified in Section 16660.

- G. Bell ends, and plastic duct spacers shall be as manufactured by Carlon; Underground Devices Inc. or equal.
- H. Pull line for spare conduits shall be 1/8-in nylon rope.
- I. Detectable Warning Tape
 - 1. Each duckbank section shall be marked by means of a detectable warning tape (tracer tape) as shown on the Drawings. The detectable warning tape shall be capable of being detected or located by either conductive or inductive location techniques.
 - 2. The detectable warning tape shall consist of 5 mil (.005-in) overall thickness; five-ply composition; ultra-high molecular weight; virgin polyethylene; acid; alkaline and corrosion resistant; with 150 pounds of tensile break strength minimum per 6-in width.
 - 3. The top side of the tracer tape shall be color banded red for electrical and high voltage lines, and orange for signal, communication, telephone and fire alarm lines. Tracer tape shall be 4-in wide with four color bands. The tape shall be inscribed with the warning message for the utility such as "CAUTION – ELECTRICAL LINED BURIED BELOW". Tape shall be as manufactured by Mutual Industries, Inc.; Terra Tape, Div. of Reef Industries Inc. or equal.
- J. Bricks for raising manhole and handhole frames to finished grade shall conform to ASTM C62. Mortar shall be composed of one-part Portland cement, two parts sand and hydrated lime not to exceed 10-lbs to each bag of cement.
 - 1. Portland cement shall be ASTM C150, Type II.
 - 2. Hydrated lime shall conform to ASTM C207.
 - 3. Sand shall be washed, cleaned, screened, well graded with all particles passing a No. 4 sieve and conform to ASTM C33.
- K. Sidewalk boxes and boxes for concrete slabs shall be cast iron intended for outdoor use primarily to provide a degree of protection against falling rain, sleet and external ice formation (NEMA 3R). Boxes shall be manufactured by O-Z/Gedney; Appleton; Killark or equal.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install raceways to drain away from buildings. Raceways between manholes or handholes shall drain toward the manholes or handholes. Raceway slopes shall not be less than 3-in per 100-ft.
- B. Steel reinforce and concrete encase all raceway banks. See duct bank detail on the Drawings.
- C. Use plastic spacers located not more than 4-ft apart to hold raceways in place. Spacers shall provide not less than 2-in clearance between raceways and edge of concrete envelope. Power system raceways shall be separated by 7.5-in center-to-center. Non-power system raceways shall be separated by 4.5-in center-to-center.
- D. The minimum cover for raceway banks shall be 24-in unless otherwise permitted by the Engineer.

- E. Make raceway entrances to buildings, structures and vaults (except manholes and handholes) with steel conduit not less than 10-ft long. Conduits run below floor slabs in slab-on-grade construction shall be steel.
- F. Raceway terminations at manholes shall be with end bells for PVC conduit and insulated throat grounding bushings for steel conduit.
- G. Where bends in raceways are required, use long radius elbows, sweeps and offsets.
- H. Swab all raceways clean before installing cable.
- I. Plug and seal spare raceways watertight at all manholes, buildings and structures.
- J. Seal the ends of raceways and make watertight at all manholes, buildings and structures.
- K. Install pulling-in irons opposite all raceway entrances to manholes.
- L. Train cables in manholes and handholes and support and restrain them on racks and hooks. Furnish inserts on all manhole and handhole walls for mounting future racks as well as racks required for present installation.
- M. A pull line shall be installed and left in all spare raceways.
- N. Install detectable warning tape in all duct banks as shown on the Drawings. Where trench exceeds 24-in width, provide additional detectable tape runs to mark each side of the duct bank in addition to the one in the center.
- O. Manhole and Handhole Installation
 - 1. Place bases on bend of 12-in screened gravel. Set base grade so that a minimum grade adjustment of 4-in of brickwork is required to bring the manhole and handhole frame and cover to final grade.
 - a. Use precast concrete grade rings or brick and non-shrink mortar to adjust frame and cover to final grade.
 - 2. Set precast sections plumb with a 1/4-in maximum out-of-plumb tolerance. Seal joints of precast sections with either a rubber O-ring set in a recess or a flexible joint sealant used in sufficient quantity to fill 75 percent of the joint cavity. Fill the outside and inside joint with non-shrink grout and finished flush with the adjoining surfaces. Caulk the inside of leaking barrel section joints with lead wool or non-shrink grout. If leaks appear in the manholes or handholes the inside joints shall be cleaned out and remade in a manner that will result in a watertight joint.
 - 3. Allow joints to set for 24 hours before backfilling. Backfilling shall be performed by bringing the fill up evenly on all sides.
 - 4. Plug holes in concrete with non-shrink grout or non-shrink grout in combination with concrete plugs. Finish flush on the inside.
 - 5. Cut holes in precast sections to accommodate conduits prior to setting manhole and handhole sections in place.

P. Brickwork

1. Mix mortar only in such quantity as may be required for immediate use and use before initial set takes place. Anti-freeze mixtures shall not be included in the mortar. Install masonry when the outside temperature is above 40 degrees F unless provisions are made to protect the mortar, brick and finished work from frost by heating and enclosing the work with tarpaulins other equivalent material.
2. Set manhole and handhole covers and frames in a full mortar bed. Utilize bricks or precast concrete grade rings, a maximum of 8-in thick, to assure frame and cover are set to the finished grade.

Q. Damp-proofing

1. 1. Coat outer surfaces of precast manholes and handholes with two coats of damp-proofing at the rate of 30 to 60 sq. ft. per gallon in accordance with manufacturer's instructions.

3.2 CLEANING

- A. All new manholes and handholes shall be thoroughly cleaned of all silt, debris and foreign matter prior to final inspection.

END OF SECTION

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SECTION 16950

ELECTRICAL SYSTEM TESTING AND SETTINGS

PART 1 GENERAL

1.1 SCOPE OF WORK

- A. The Contractor shall engage the services of the equipment manufacturer as required for the purpose of performing inspections and tests as herein specified.
- B. The Contractor/manufacturer shall provide all material, equipment, labor, and technical supervision to perform such tests and inspections.
- C. It is the purpose of these tests to assure that all tested electrical equipment, both Contractor- and Owner-supplied, is operational and within industry and manufacturer's tolerances and is installed in accordance with design specifications. The tests and inspections shall determine suitability for energizing equipment.
- D. Test systems and equipment furnished under Division 16 and repair or replace all defective work and equipment at no additional cost to the TMWRF. Refer to the individual equipment sections for additional specific testing requirements.
- E. Adjust the systems furnished under Division 16 and instruct the TMWRF's personnel in the proper operation of the systems.
- F. In addition to the specific testing requirements listed in the individual Sections, perform the additional testing, inspections and adjust settings as specified herein.
- G. Testing shall be scheduled and coordinated with the TMWRF at least 2 weeks in advance.
- H. Provide qualified test personnel, instruments and test equipment.
- I. Provide a test report verifying compliance with the testing requirements included under Division 16.
- J. Before proceeding with the energization of equipment, notify the TMWRF to schedule the start-up of the equipment.

1.2 RELATED WORK

- A. Asset Identification and Labeling is included in Section 01672.
- B. Acceptance testing and Facility Start-up is included in Section 01756.
- C. Training and Demonstration Period is included in Section 01820.
- D. Operations and Maintenance Data is included in Section 01830.

1.3 SUBMITTALS

- A. Test Report

1. The test report shall include the following:
 - a. Summary of project
 - b. Listing of equipment tested
 - c. Test results
 - d. Recommendations
 - i. Furnish copies of the complete report to the TMWRF as directed in the contract documents.

B. The report shall include a Table of Contents and a data sheet for each component tested. The Table of Contents shall identify each component by a unique number. The Number shall appear on the technical data sheet for identification. Submit cable test results, grounding test results, circuit breaker, motor circuit protector, and protective device settings, fuse type and rating for each piece of equipment. Test report shall be submitted in a three-ring binder. Three copies shall be furnished.

C. The report shall include a Table of Contents and a technical data sheet for each component (i.e. cable, circuit breaker, transformer, relay, etc.) tested. The Table of Contents shall include the name of each component, location, the major piece of equipment the component is located within, and a sheet number on which the technical information is presented. Each data sheet shall include a unique sheet number, the name of the component under test, the major piece of equipment in which the component is located and the weather conditions at the time of the test including the temperature and relative humidity at the time of the test. The firm doing the testing shall include, in the report, their opinion whether the equipment being tested complies with the specification and recommended measures to correct the deficiency. Any discrepancies shall be noted in the concluding summary of the report. Test report forms shall follow NETA standards. Three complete copies shall be provided. Reports shall be signed by the person in responsible charge of the field testing, an officer of the firm performing the tests and an officer of the Electrical Contracting Firm.

D. The reports shall be submitted to the TMWRF for review, comment and record purposes. Each report shall include a Table of Contents, a technical data sheet, for each component (i.e. cable, circuit breaker, transformer, relay, etc.) tested. The Table of Contents shall include the name of each component, the major piece equipment the component is located within, and a sheet number on which the technical information is presented. Each data sheet shall include a unique sheet number, the name of the component under test, The major piece of equipment in which the component is located, the weather conditions at the time of the test (i.e. temperature, humidity, sunny, rain, etc.) the tester's observation and findings, discrepancies, any remedial work performed or act to resolve problems, technical parameters obtained during the tests, as left settings of all devices, and a statement indicating the equipment is ready to be energized. The report shall contain a statement indicating the equipment was tested in accordance with the procedures outlined in the latest edition of The International Testing Association Acceptance Testing Specifications.

1.4 APPLICABLE CODES, STANDARDS, AND REFERENCES

- E. All inspections and tests shall be in accordance with the following codes and standards except as provided otherwise herein:
 1. National Electrical Manufacturer's Association - NEMA
 2. American Society for Testing and Materials - ASTM

3. Institute of Electrical and Electronic Engineers - IEEE
4. InterNational Electrical Testing Association - NETA Acceptance Testing Specifications (ATS) – Latest Revision
5. InterNational Electrical Testing Association - NETA Maintenance Testing Specifications (MTS) – Latest Revision
6. American National Standards Institute - ANSI C2: National Electrical Safety Code
7. State and local codes and ordinances
8. Insulated Cable Engineers Association - ICEA
9. Association of Edison Illuminating Companies - AEIC
10. Occupational Safety and Health Administration - OSHA
11. National Fire Protection Association - NFPA
 - a. ANSI/NFPA 70: National Electrical Code
 - b. ANSI/NFPA 70B: Electrical Equipment Maintenance
 - c. NFPA 70E: Electrical Safety Requirements for Employee Workplaces
 - d. ANSI/NFPA 78: Lightning Protection Code
 - e. ANSI/NFPA 101: Life Safety Code

F. All inspections and tests shall utilize the following references:

1. Project design specifications
2. Project design drawings
3. Project short-circuit, coordination and arc flash study
4. Manufacturer's instruction manuals applicable to each particular apparatus
5. Project list of equipment to be inspected and tested

1.5 QUALITY ASSURANCE

G. Qualifications of testing firm

1. The testing firm shall be a corporately- and financially-independent testing organization which can function as an unbiased testing authority, professionally independent of the manufacturers, suppliers, and installers of equipment or systems evaluated by the testing firm.
2. The testing firm shall be regularly engaged in the testing of electrical equipment devices, installations, and systems.

3. The testing firm shall meet OSHA criteria for accreditation of testing laboratories, Title 29, Part 1907, or be a Full Member company of the InterNational Electrical Testing Association.
4. The lead, on-site, technical person shall be currently certified by the InterNational Electrical Testing Association (NETA) or National Institute for Certification in Engineering Technologies (NICET) in electrical power distribution system testing.
5. The testing firm shall utilize engineers and technicians who are regularly employed by the firm for testing services. Resumes of key staff proposed for the project shall be submitted to the TMWRF for review.
6. The testing firm shall submit proof of the above qualifications with bid documents, when requested.
7. The terms used here within, such as test agency, test [Contractor][Firm][Engineer], testing laboratory, or Contractor's test company shall be construed to mean the testing firm.

1.6 DIVISION OF RESPONSIBILITY

- H. The Contractor shall perform routine insulation-resistance, continuity, and rotation tests for all distribution and utilization equipment prior to and in addition to tests performed by the testing firm specified herein.
- I. The TMWRF shall supply a suitable and stable source of electrical power to each test site. The testing firm shall specify the specific power requirements.
- J. The Contractor shall notify the testing firm when equipment becomes available for acceptance tests. Work shall be coordinated to expedite project scheduling.
- K. The project electrical engineer is responsible for obtaining and approving a short-circuit analysis and coordination study prepared by an independent testing firm or consulting engineer.
- L. The project electrical engineer shall supply a short-circuit analysis and coordination study, a protective device setting sheet, a complete set of electrical plans, specifications, and any pertinent change orders to the testing firm prior to commencement of testing.
- M. The testing firm shall notify the Owner/Engineer's representative prior to commencement of any testing.
- N. Any system, material, or workmanship which is found defective on the basis of acceptance tests shall be reported to the TMWRF/Engineer's representative.
- O. The testing firm shall maintain a written record of all tests and, upon completion of project, shall assemble and certify a final test report.
- P. Safety and Precautions
 1. Safety practices shall include, but are not limited to, the following requirements:
 - a. Occupational Safety and Health Act (OSHA)
 - b. Accident Prevention Manual for Industrial Operations, National Safety Council (NSC)
 - c. Applicable state and local safety operating procedures

- d. TMWRF's safety practices (Lockout/Tagout)
 - e. National Fire Protection Association - NFPA 70E
 - f. National Fire Protection Association – NFPA 79
 - g. American National Standards for Personnel Protection
2. All tests shall be performed with apparatus de-energized. Exceptions must be thoroughly reviewed to identify safety hazards and devise adequate safeguards.
 3. The testing firm shall have a designated safety representative on the project to supervise the testing operations with respect to safety.

1.7 TEST EQUIPMENT REQUIREMENTS

A. Suitability of Test Equipment

1. All test equipment shall be in good mechanical and electrical condition.
2. Selection of metering equipment should be based on a knowledge of the waveform of the variable being measured. Digital multimeters may be average or RMS sensing and may include or exclude the dc component. When the variable contains harmonics or dc offset and, in general, any deviation from a pure sine wave, average sensing and average measuring RMS scaled meters may be misleading. Use of RMS measuring meters is recommended.
3. Field test metering used to check power system meter calibration must have an accuracy higher than that of the instrument being checked.
4. Accuracy of metering in test equipment shall be appropriate for the test being performed.
5. Waveshape and frequency of test equipment output waveforms shall be appropriate for the test and tested equipment.

B. Test Instrument Standards

1. All equipment used for testing and calibration procedures shall exhibit the following characteristics:
 - a. Maintained in good visual and mechanical condition
 - b. Maintained in safe operating condition
2. Test equipment should have operating accuracy equal to, or better than, the following limits:
 - a. Portable multimeters should be true RMS measuring.
 - b. Multimeters should have the following accuracy limits, or better:
 - i. AC voltage ranges: .75% +/-3 last single digits @ 60 Hz
 - ii. AC current ranges: .90% +/-3 last single digits @ 60 Hz, including adapters, transducers

- iii. DC voltage ranges: .25% +/-1 last single digit
- iv. DC current ranges: .75% +/-1 last single digit
- v. Resistance ranges: .50% +/-1 last single digit
- vi. Frequency range: .10% +/-1 last single digit @ 60 Hz
- c. Clamp-on ammeters: ac current +/-3% of range +/-1 last single digit @ 60 Hz
- d. Dissipation/power factor field equipment
 - i. +/-0.1% power factor for power factor values up to 2.0%
 - ii. 5% of the reading for power factor values above 2.0%
- e. Low-range dc resistance equipment: 1.0% of reading, +/-2 last single digits
- f. Transformer turns-ratio test equipment: 0.5% or better @ 60 Hz
- g. Ground electrode test equipment: +/-2% of range
- h. Insulation test sets: 0-1000V dc +/-20% of reading at mid-scale
- i. Electrical load survey equipment
 - i. +/-5% total error, including sensors
 - ii. 1% resolution
 - iii. Current transformers +/-2% of range @ 60 Hz
 - iv. Voltage transformers +/-0.5% of range @ 60 Hz
- j. Liquid dielectric strength test equipment: +/-2% of scale
- k. Infrared scanning equipment: sensitivity of 20c
- l. Phase shifting equipment: +/-1.0o over entire range
- m. High-current test equipment: +/-2% of range
- n. DC high potential test equipment: +/-2% of full scale
- o. AC high potential test equipment (60 Hz): +/-2% of full scale

C. Test Instrument Calibration

1. The testing firm shall have a calibration program which assures that all applicable test instruments are maintained within rated accuracy.
2. The accuracy shall be directly traceable to the National Institute of Standards and Technology.
3. Instruments shall be calibrated in accordance with the following frequency schedule:

- a. Field instruments: 6 months maximum
- b. Laboratory instruments: 12 months
- c. Leased specialty equipment: 12 months (Where accuracy is guaranteed by lessor)
- d. Dated calibration labels shall be visible on all test equipment.
- e. Records, which show date and results of instruments calibrated or tested, must be kept up-to-date and available upon request.
- f. Up-to-date instrument calibration instructions and procedures shall be maintained for each test instrument.
- g. Calibrating standard shall be of higher accuracy than that of the instrument tested.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 PREPARATION

- A. Testing shall be scheduled and coordinated with the TMWRF at least 2 weeks in advance

3.2 ACCEPTANCE TESTING

- B. Provide acceptance testing for all equipment provided under Division 16 in accordance with the individual specification sections.
- C. Test all electrical equipment, both Contractor- and Owner-supplied, is operational and within industry and manufacturer's tolerances and is installed in accordance with design specifications prior to energizing equipment.
- D. Test systems and equipment furnished under Division 16 and repair or replace all defective work and equipment at no additional cost to the TMWRF. Refer to the individual equipment sections for additional specific testing requirements.
- E. Make adjustments to the systems furnished under Division 16 and instruct the TMWRF's personnel in the proper operation of the systems.
- F. Provided mechanical inspection of equipment and operational testing of control circuits to confirm proper operation of equipment.
- G. Check interlocking, control and instrument wiring for each system and/or part of a system to prove that the system will function properly as indicated by control schematic and wiring diagrams.
- H. Inspect each piece of equipment in areas designated as HAZARDOUS to ensure that equipment of proper rating is installed. In the case where HAZARDOUS rated equipment is installed outdoors or in "WET" locations, verify that equipment furnished is also rated for use in WET locations and that conduit and equipment drains are provided. If equipment is not properly rated advise the TMWRF.

END OF SECTION

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Apprenticeship Utilization Act Information and Forms

APPRENTICESHIP UTILIZATION ACT

BACKGROUND

Senate Bill 207 (Apprenticeship Utilization Act) passed during the 2019 Legislative Session added sections 338.0116 and 338.01165 to the NRS. These new provisions apply to bids for public works where the value exceeds \$100,000.00. In passing SB 207, The Legislature hereby finds and declares that: (1) A skilled workforce in construction is essential to the economic well-being of the State; (2) Apprenticeship programs are a proven method of training a skilled workforce in construction; and (3) Requiring the use of apprentices on the construction of public works will ensure the availability of a skilled workforce in construction in the future for this State.

A contractor or subcontractor engaged in **horizontal construction** who employs a worker on a public work pursuant to NRS 338.040 shall use one or more apprentices for at least 3 percent of the total hours of labor worked for each apprenticed craft or type of work to be performed on the public work for which more than three workers are employed.

“Horizontal Construction” means the construction of any fixed work, including any irrigation, drainage, water supply, flood control, harbor, railroad, highway, tunnel, airport or airway, sewer, sewage disposal plant or water treatment facility and any ancillary vertical components thereof, bridge, inland waterway, pipeline for the transmission of petroleum or any other liquid or gaseous substance, pier, and work incidental thereto. The term does not include vertical construction, the construction of any terminal or other building of an airport or airway, or the construction of any other building.

A contractor or subcontractor engaged in **vertical construction** who employs a worker on a public work pursuant to NRS 338.040 shall use one or more apprentices for at least 10 percent of the total hours of labor worked for each apprenticed craft or type of work to be performed on the public work for which more than three workers are employed.

“Vertical Construction” means the construction or remodeling of any building, structure or other improvement that is predominantly vertical, including, without limitation, a building, structure or improvement for the support, shelter and enclosure of persons, animals, chattels or movable property of any kind, and any improvement appurtenant thereto.

A Public Body/Awarding Body, upon the request of a contractor or subcontractor, **MAY** submit a request for a modification or waiver of the percentage of hours of labor of one or more apprentices prior to (1) the bid advertisement; (2) the bid opening; or (3) the award of the contract if, “Good Cause” exists. The Labor Commissioner may also grant a modification or waiver from the requirements of NRS 338.01165 after work on the public work has commenced.

CITY OF SPARKS – OPERATIONAL PROCESS FOR COMPLIANCE (POST-BID)

The timeline associated with initial collection of materials associated with compliance with the Apprenticeship Utilization Act (“the Act”) is as follows:

Pre-Award Meeting – Following the public opening of bids (as soon as practical), a meeting will be scheduled with the apparent low bidder to discuss the bidder’s ability to meet the requirements of the Act. At this meeting, the contractor will provide a “Project Workforce Checklist” that indicates the expected classification of workers on the project and the determination as to whether or not apprentices may be required per the provisions of the Act.

Determination of Availability of Apprentices

Immediately following the Pre-Award Meeting, the low bidder will survey the market to determine whether there are a sufficient number of apprentices available in the jurisdiction to meet the requirements of the Act, specific to the project at-hand. The contractor will then communicate the results of this survey to the City of Sparks by either indicating they can go forward without further action by the City or by delivering a completed “Apprenticeship Utilization Act Waiver Request” form(s) for consideration by the City and the Nevada Labor Commissioner.

Communications concerning compliance and/or delivery of waiver requests should occur within 14 calendar days of the Pre-Award Meeting.

Waiver Requests

Upon receipt of any waiver requests, the City will consider the materials provided and, as required, forward the materials to the Nevada Labor Commissioner for consideration and possible approval. Upon receipt of that determination, the City of Sparks will communicate the results back to the Contractor as soon as possible.

Contract Award

Once the City and the low bidder have completed the work required to determine the apparent compliance with the Act, the award of the construction contract will be scheduled for consideration by the City Council.

Post-Award Requests

As allowed by the Act, should an awarded Contractor determine in the course of a project that their ability to comply with the requirements of the Act has changed, additional waiver requests or other relevant information should be communicated to the City as soon as practical for further action and consideration by the City and/or the Nevada Labor Commissioner.

Sample Forms

Additional information and sample forms for use in compliance with the Act may be found on the website of the Nevada Labor Commissioner at:

http://labor.nv.gov/Apprenticeship_Utilization_Act/Apprenticeship_Utilization_Act/

This information may also be found following this page and include:

- 1) Apprenticeship Utilization Guide
- 2) Apprenticeship Verification Process
- 3) Project Workforce Checklist
- 4) Request for Apprentice Availability on a Public Work
- 5) Apprenticeship Utilization Act Waiver Request

STEVE SISOLAK
GOVERNOR

TERRY REYNOLDS
DIRECTOR

SHANNON CHAMBERS
LABOR COMMISSIONER



Department of Business & Industry
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(Originally issued on January 28, 2020)

ADVISORY OPINION - NEVADA ADMINISTRATIVE CODE § 607.650

SENATE BILL 207 - APPRENTICESHIP UTILIZATION ACT (AUA)

Pursuant to Nevada Administrative Code (NAC) Section 607.650, the Labor Commissioner is issuing the following Advisory Opinion regarding Senate Bill (SB) 207/Apprenticeship Utilization Act (AUA). The Labor Commissioner has received multiple inquiries, opinion requests, comments, suggestions, and proposals on how Senate Bill 207 should be interpreted, implemented, and enforced. The Labor Commissioner also met with various stakeholders.

This Advisory Opinion is intended to provide as much guidance as possible on Senate Bill 207. However, it must be recognized that not every working environment or situation may be encompassed by the answers and guidance set forth in this Advisory Opinion. The Labor Commissioner will continue to work with stakeholders, public/awarding bodies, contractors/subcontractors, and employers and employees on Senate Bill 207. However, the Labor Commissioner will attempt to interpret, implement, and enforce Senate Bill 207 based on the plain language of the bill and the intent of the Legislative Sponsors of the bill to ensure that apprenticeship utilization takes place on public works projects in the State of Nevada.

KEY HIGHLIGHTS OF SENATE BILL (SB 207) – EFFECTIVE JANUARY 1, 2020

The Legislature hereby finds and declares that: 1. A skilled workforce in construction is essential to the economic well-being of this State; 2. Apprenticeship programs are a proven method of training a skilled workforce in construction; and 3. Requiring the use of apprentices on the construction of public works will ensure the availability of a skilled workforce in construction in the future for this State.

Sec. 1.7. 1. Notwithstanding any other provision of this chapter and except as otherwise provided in this section, a contractor or subcontractor engaged in vertical construction who employs a worker on a public work pursuant to NRS 338.040 shall use one or more apprentices for at least 10 percent of the total hours of labor worked for each apprenticed craft or type of work to be performed on the public work for which more than three workers are employed.

2. Notwithstanding any other provision of this chapter and except as otherwise provided in this section, a contractor or subcontractor engaged in horizontal construction who employs a worker on a public work pursuant to NRS 338.040 shall use one or more apprentices for at least 3 percent of the total hours of labor worked for each apprenticed craft or type of work to be performed on the public work for which more than three workers are employed.

<https://www.leg.state.nv.us/App/NELIS/REL/80th2019/Bill/6351/Text>

DEFINITIONS FOR PUBLIC BODY AND PUBLIC WORK AND AWARDING BODY NEVADA REVISED STATUTES (NRS) SECTIONS 338.010(17)(18) AND NEVADA ADMINISTRATIVE CODE (NAC) SECTION 338

17. “Public body” means the State, county, city, town, school district or any public agency of this State or its political subdivisions sponsoring or financing a public work.

18. “Public work” means any project for the new construction, repair or reconstruction of a project financed in whole or in part from public money for:

- (a) Public buildings;
- (b) Jails and prisons;
- (c) Public roads;
- (d) Public highways;
- (e) Public streets and alleys;
- (f) Public utilities;
- (g) Publicly owned water mains and sewers;
- (h) Public parks and playgrounds;
- (i) Public convention facilities which are financed at least in part with public money; and
- (j) All other publicly owned works and property.

NAC 338.0054 “Awarding body” defined. ([NRS 338.012](#)) “Awarding body” means a public body, as that term is defined in [NRS 338.010](#), or any authorized agent or representative of a public body.

DEFINITIONS FOR HORIZONTAL AND VERTICAL CONSTRUCTION NRS 338.010(13)(24) – SENTATE BILL 141 (2021)

Horizontal Construction NRS 330.010 - Subdivision 13. “Horizontal construction” means any construction, alteration, repair, renovation, demolition or remodeling necessary to complete a public work, including , without limitation, any irrigation, drainage, water supply, flood control, harbor, railroad, highway, tunnel, airport or airway, sewer, sewage disposal plant or water treatment facility and any ancillary vertical components thereof, bridge, inland waterway, pipeline for the transmission of petroleum or any other liquid or gaseous substance, pier, and any other work incidental thereto. The term does not include vertical construction, the construction of any terminal or other building of an airport or airway, or the construction of any other building.

Vertical Construction NRS 338.010 - Subdivision 24. “Vertical construction” means any construction, alteration, repair, renovation, demolition or remodeling necessary to complete a public work for any building, structure or other improvement that is predominantly vertical, including, without limitation, a building, structure or improvement for the support, shelter and enclosure of persons, animals, chattels or movable property of any kind, and any other work or improvement appurtenant thereto.

WHAT IS COMPLEX AND/OR HAZARDOUS?

Tasks routinely and customarily performed by an apprentice in an apprenticed craft or type of work, unless specifically prohibited by the applicable Apprenticeship Program or Apprenticeship Standards, are not considered to be either uniquely hazardous or complex tasks for the purpose of enforcement of the provisions of Senate Bill 207 and any regulations adopted pursuant thereto.

SENATE BILL 207 ONLY APPLIES TO PUBLIC WORKS PROJECTS OF \$100,000 OR MORE.

Assembly Bill 136 passed during the 2019 Nevada Legislative Session changed the public works project amount that triggers prevailing wage laws from \$250,000 to \$100,000. The Sponsor of Senate Bill 207, Senator Brooks, stated that the intent of Senate Bill 207 was to apply to public works projects based on prevailing wage laws and the amount that triggers prevailing wage laws. The Legislature determined that amount to be \$100,000. Therefore, Senate Bill 207 only applies to public works projects of \$100,000 or more.

SENATE BILL 207 DOES NOT APPLY TO DAVIS-BACON OR 100% FEDERALLY FUNDED PROJECTS.

Senate Bill 207 is a state law that applies to state public works projects based on the definition set forth above in NRS Section 338.010 subdivision 17.

Senate Bill 207 does not apply to 100% federally funded projects and/or those projects that fall exclusively under the federal Davis-Bacon Act requirements for compliance and/or enforcement.

For projects that have a mix of state and federal funding, the public/awarding body should include the provisions of Senate Bill 207 as part of their bid documents and apply Senate Bill 207 on those projects.

The public/awarding body can work with their federal funding agencies and seek a determination from them as to whether Senate Bill 207 should apply based on the funding structure of the project. The Labor Commissioner will consider this information in determining whether Senate Bill 207 applies on those types of projects.

THE LABOR COMMISSIONER DOES NOT HAVE JURISDICTION OVER AND WILL NOT ENFORCE “ON-THE-JOB TRAINING”/OJT REQUIREMENTS IF THE AUA APPLIES.

Assembly Bill 459 passed during the 81st Regular Session of the Nevada Legislature (2021) moved the jurisdiction of the Nevada State Apprenticeship Council back to the Office of the Labor Commissioner and designated the Office of the Labor Commissioner as the recognized State Apprenticeship Agency.

Projects that require compliance with the AUA and fall under the jurisdiction and enforcement of the Labor Commissioner will be required to meet the requirements of the AUA. The Labor Commissioner will not apply and/or enforce additional “on-the-job”/OJT requirements and public/awarding bodies should not enforce additional OJT requirements if state law, the AUA applies.

Pursuant to Nevada Revised Statutes (NRS) sections 610.020 and 610.144, and Nevada Administrative Code (NAC) section 610.540, state registered apprenticeship programs must already comply with the following requirements related to equal opportunity, affirmative action, selection methods, and a nondiscriminatory pool for application as an apprentice.

NRS 610.020 Purposes. The purposes of this chapter are:

1. To open to people, without regard to race, color, creed, sex, sexual orientation, gender identity or expression, religion, disability, genetic information, national origin or age of 40 years or older, the opportunity to obtain training that will equip them for profitable employment and citizenship.
2. To establish, as a means to this end, an organized program for the voluntary training of persons under approved standards for apprenticeship, providing facilities for their training and guidance in the arts and crafts of industry and trade, with instruction in related and supplementary education.
3. To promote opportunities for employment for all persons, without regard to race, color, creed, sex, sexual orientation, gender identity or expression, religion, disability, genetic information, national origin or age of 40 years or older, under conditions providing adequate training and reasonable earnings.
4. To regulate the supply of skilled workers in relation to the demand for skilled workers.
5. To establish standards for the training of apprentices in approved programs.
6. To establish a State Apprenticeship Council.
7. To provide for a State Apprenticeship Director with the authority to carry out the purposes of this chapter.
8. To provide for reports to the Legislature and to the public regarding the status of the training of apprentices in the State.
9. To accomplish related ends.

NRS 610.144 Requirements for program to be eligible for registration and approval by State Apprenticeship Council.

1. Be an organized, written plan embodying the terms and conditions of employment, training and supervision of one or more apprentices in an occupation in which a person may be apprenticed and be subscribed to by a sponsor who has undertaken to carry out the program.
2. Contain the pledge of equal opportunity prescribed in 29 C.F.R. § 30.3(c) and, when applicable:
 - (a) A plan of affirmative action in accordance with 29 C.F.R. § 30.4;
 - (b) A method of selection authorized in 29 C.F.R. § 30.10;
 - (c) A nondiscriminatory pool for application as an apprentice; or
 - (d) Similar requirements expressed in a state plan for equal opportunity in employment in apprenticeships adopted pursuant to 29 C.F.R. Part 30 and approved by the United States Department of Labor.

NAC 610.540 Standards: Pledge of equal opportunity. ([NRS 610.090](#), [610.144](#)) Each sponsor shall include in its standards a pledge of equal opportunity which is worded substantially as follows:

The recruitment, selection, employment and training of apprentices during apprenticeship will be without discrimination because of race, color, religion, sex, sexual orientation, age, disability or national origin. The sponsor will take affirmative action to provide equal opportunity in apprenticeship and will operate the program of apprenticeship as required under Title 29 of the Code of Federal Regulations, Part 30, and all regulations on equal opportunity of employment in the State of Nevada.

[Apprenticeship Council, Equal Employment Opportunity, § 4 subsec. (b), eff. 9-11-76] (NAC A by R082-04, 7-13-2004)

THE LABOR COMMISSIONER TYPICALLY DOES NOT HAVE JURISDICTION OVER THE BIDDING PROCESS.

NRS section 338.013 requires an identifying number from the Labor Commissioner. Please see below.

NRS 338.013 Inclusion of identifying number from Labor Commissioner in advertisement or solicitation and bids and other responsive documents; reports by public bodies and contractors to Labor Commissioner.

1. A public body that undertakes a public work shall request from the Labor Commissioner and include in any advertisement or other type of solicitation, an identifying number with a designation of the work. That number must be included in any bid or other document submitted in response to the advertisement or other type of solicitation.
2. Each public body which awards a contract for any public work shall report its award to the Labor Commissioner within 10 days after the award, giving the name and address of the contractor to whom the public body awarded the contract and the identifying number for the public work.
3. Each contractor engaged on a public work shall report to the Labor Commissioner and the public body that awarded the contract the name and address of each subcontractor whom the contractor engages for work on the project within 10 days after the subcontractor commences work on the contract and the identifying number for the public work.
4. The public body which awarded the contract shall report the completion of all work performed under the contract to the Labor Commissioner before the final payment of money due the contractor by the public body.

The bidding requirements and provisions set forth in NRS 338.1373 et seq. fall under the jurisdiction of the public/awarding bodies, with limited exceptions where the Labor Commissioner can get involved in the bidding and award of contracts if potential violations of prevailing wage and public works laws may be occurring.

Therefore, each public/awarding body is encouraged to work with their respective attorneys/counsel to develop forms and a process to implement Senate Bill 207. Examples and guidance have been provided on how to include the requirements of Senate Bill 207 in bid documents and in determining what is a responsive bid. The Labor Commissioner will not take over or assume any of the bidding and award duties of the public/awarding body as required by existing laws and regulations.

DEFINITION OF APPRENTICE NAC 338.

NAC 338.0052 “Apprentice” defined. ([NRS 338.012](#)) “Apprentice” means a person employed and individually registered in a bona fide apprenticeship program with:

1. The Bureau of Apprenticeship and Training of the Office of Apprenticeship, Training, Employer and Labor Services of the Employment and Training Administration of the United States Department of Labor or its successor; and
2. The State Apprenticeship Council pursuant to [chapter 610](#) of NRS and any regulations adopted pursuant thereto.

THERE ARE NO REGISTERED APPRENTICESHIP PROGRAMS IN MY JURISDICTION.

A Request for Waiver may be submitted by the public/awarding body. Please follow the link to the Advisory Opinion on “Jurisdiction(s)” for purposes of Senate Bill 207.

http://labor.nv.gov/uploadedFiles/labornvgov/content/Apprenticeship_Utilization_Act/AO-2019-03%20AUA%20Jurisdiction%20definition.pdf

DOES THE AWARDING BODY STILL NEED TO REQUEST A WAIVER IF THERE IS NO REGISTERED APPRENTICESHIP PROGRAM IN THE JURISDICTION?

Yes, a Request for Waiver still needs to be submitted.

However, the Labor Commissioner will not require a Request for Waiver for the Truck Driver Job Classification in the State of Nevada because there currently are no Registered Apprenticeship Programs for Truck Drivers in the State of Nevada, and because of the volume of waivers that could be generated simply for the Truck Driver Job Classification.

HOW MANY APPRENTICESHIP PROGRAMS DO I HAVE TO REQUEST APPRENTICES FROM?

A contractor/subcontractor that has more than three workers employed on a public work within the same apprenticed craft or type of work needs to request apprentices from every Registered Apprenticeship Program for that craft or type of work performed in their jurisdiction. This could include requesting apprentices from both a Union Apprenticeship Program and a Non-Union Apprenticeship Program. (See above for Advisory Opinion on “Jurisdiction(s)” for purposes of Senate Bill 207)

For example, the Laborers Job Classification and Job Description may also include Brick and Hod Plaster Carriers, Flaggers, Cement Masons, Fence Erectors, Asbestos Abatement, and Landscaping. Similarly, the Carpenters Job Classification and Job Description may also include different types of work performed. The Labor Commissioner will likely view each different Job Description within the broader Job Classification as separate crafts or types of work for purposes of SB207.

The contractor/subcontractor should identify the craft or type of work to be performed and determine how that work is bid and assigned according to area practice and within that jurisdiction. The Labor Commissioner does not have jurisdiction over jurisdictional disputes involving collective bargaining agreements where contractors/subcontractors and/or the Unions are claiming a type of work that has been assigned according to area practice and is set forth in the collective bargaining agreements.

Please also see the sample Project Workforce Checklist on the link below.

http://labor.nv.gov/Apprenticeship_Utilization_Act/Apprenticeship_Utilization_Act/

WHAT HAPPENS IF THE DISPATCHED APPRENTICE DOES NOT SHOW UP OR THERE ARE OTHER ISSUES WITH THE APPRENTICE?

The contractor/subcontractor should contact the Registered Apprenticeship Program and notify them that the apprentice did not show up. The contractor/subcontractor should also document the incident and notify the prime contractor and/or public/awarding body of the situation.

Apprenticeship questions, issues and/or complaints regarding Registered Apprenticeship Programs and the verification and/or qualifications and/or work of an Apprentice that is dispatched should be directed to the Registered Apprenticeship Program first. Additional information can be found at https://labor.nv.gov/Wages/Nevada_State_Apprenticeship_Council/.

WHAT HAPPENS IF THE CONTRACTOR/SUBCONTRACTOR IS ONLY GOING TO HAVE MORE THAN 3 WORKERS PER CRAFT OR TYPE OF WORK TO BE PERFORMED FOR ONE DAY OR A LIMITED PERIOD OF TIME?

The Labor Commissioner cannot possibly address every individual situation that could arise on a public works jobsite. If a contractor/subcontractor is required or finds the need to bring on additional workers that triggers the requirements of Senate Bill 207, the contractor/subcontractor should make every effort to bring on an apprentice to comply with the requirements of Senate Bill 207.

The Labor Commissioner also recognizes that there may be situations where the contractor/subcontractor only has more than 3 workers within a specific apprenticed craft or type of work for a day or for a limited period where it may not be reasonable and/or practical to request and/or obtain apprentice(s). The contractor/subcontractor should document the reason for the increase in workers and why it was necessary, and work with the prime contractor and/or public/awarding body to determine if the increase in workers will be temporary or a long-term situation.

The contractor/subcontractor should then determine if the contractor/subcontractor needs to request apprentices or if the public/awarding body should seek a Request for Waiver from the Labor Commissioner. In situations like this, the Labor Commissioner may look at the project as a whole and will review the actions of the contractor/subcontractor and public/awarding body to determine if their actions were reasonable and not an attempt to circumvent the requirements of Senate Bill 207.

In addition, in cases of emergencies, the law provides an exemption to prevailing wage requirements, and therefore the requirements of Senate Bill 207. (See also NRS sections 338.011 and 338.090.)

HOW WILL SENATE BILL 207 BE ENFORCED?

The plain language of Senate Bill 207 provides that it will be enforced contractor by contractor, subcontractor by subcontractor, and project by project. Therefore, the general/prime contractor cannot satisfy the 10% or 3% requirement on the project for all their subcontractors. If a subcontractor has more than 3 workers for an apprenticed craft or a type of work performed, they will need to comply with the

requirements of Senate Bill 207 separately. Similarly, a general/prime contractor that has more than 3 workers within an apprenticed craft or type of work performed will need to comply with the requirements of Senate Bill 207 separately.

So, for example, if you have 4 Electricians who each work a 40-hour week, $40 \times 4 = 160$, and that was the total hours they worked on the entire project. Because there were more than 3 workers per craft or type of work performed that would trigger the requirements of Senate Bill 207. Depending upon whether it was Vertical Construction = 10% or Horizontal Construction = 3% of the total hours of the project for that craft or type of work performed would have to be hours worked by an Apprentice based on the 160 total project hours.

It is important to look at and recognize the craft or the type of work performed. For example, the Flagger Job Classification is listed as separate, but the assignment of this work typically falls under the Laborers through collective bargaining agreements and area practice. However, a Flagger performs a distinct type of work from a general Laborer. So, if there are more than 3 Flaggers on a public works jobsite, there will need to be an apprentice on the jobsite for that craft or type of work performed, or a waiver obtained. Senate Bill 207 specifically specifies “craft” or “type of work performed.” Prevailing wage laws require that workers are paid based on the type of work the worker actually performs. Senate Bill 207 reinforces this requirement by requiring apprentices specifically for the craft or type of work performed.

The Laborer and Operator Job Classifications contain Groups. The Groups will not be considered separately but will be counted together towards the more than 3 workers threshold. As stated above, exceptions to this could be Laborers if they are performing a separate and distinct type of work, such as a Flagger. If there is an Operator Group 1 worker, an Operator Group 2 worker, an Operator Group 4 worker, and an Operator Group 5 worker, they will all be counted together as 4 Operators, thereby triggering the requirements of Senate Bill 207.

There may be situations where the Labor Commissioner may need to look at and/or review the project on a broader basis or as a “whole” to determine compliance with Senate Bill 207. While the law does not necessarily provide any “carve outs” to not enforce the law contractor by contractor, subcontractor by subcontractor, or project by project, the Labor Commissioner will review compliance with Senate Bill 207 and compliance with prevailing wage laws based on the facts and evidence presented and the actions of the contractors, subcontractors, and public/awarding bodies.

WHAT HAPPENS IF THE PUBLIC/AWARDING BODY AND/OR LABOR COMMISSIONER FIND I COMMITTED A VIOLATION?

The law provides for notice, due process, and an opportunity to be heard. NAC sections 338.105 through 338.116 set forth the provisions governing the investigation, determination, objection, and hearing process. NRS section 338.015 also provides for notice and an opportunity for a hearing before an administrative penalty may be imposed. The Labor Commissioner does have the authority to impose administrative penalties of up to \$5,000 per violation against contractors, subcontractors, and public/awarding bodies.

Contractors, subcontractors, and public/awarding bodies should comply with the certified payroll reporting and review requirements set forth in NRS and NAC section 338 to monitor and review compliance with Senate Bill 207 and prevailing wage laws.

In the event a claim/complaint is filed with the Labor Commissioner it will follow the process set forth in NAC sections 338.106 through 338.116 and/or NRS section 338.015, and any other applicable laws and regulations.

Failure to maintain proper documentation and/or submit required reports, such as certified payroll reports, could result in potential violations and disqualification.

Intentional and/or purposeful actions that demonstrate an intent to circumvent the requirements of Senate Bill 207 and prevailing wage laws may result in administrative penalties and disqualification.

CONCLUSION

In this Advisory Opinion, the Labor Commissioner has attempted to provide guidance on the interpretation and implementation of Senate Bill 207. The Labor Commissioner will defer to the legislative intent, plain language, legislative testimony, and intent of Senate Bill 207 should additional questions arise.

The Labor Commissioner has made every effort to address the questions, concerns, and issues raised relating to Senate Bill 207. To the extent that a question, concern, or issue is not addressed in this Advisory Opinion, it is recommended that you contact the Office of the Labor Commissioner and submit your question(s) in writing to AUA@labor.nv.gov or contact our office at the phone numbers and address locations listed on the first page of this Advisory Opinion.

Please be advised that the Labor Commissioner may revisit the interpretation and implementation of Senate Bill 207 as needed through an additional Advisory Opinion or through the Administrative Rulemaking process.

Sample Forms and information on SB 207 can be found at:
http://labor.nv.gov/Apprenticeship_Utilization_Act/Apprenticeship_Utilization_Act/

Sincerely,



Shannon M. Chambers
Labor Commissioner
Office of the Labor Commissioner
State of Nevada
Department of Business and Industry

STEVE SISOLAK
Governor

TERRY REYNOLDS
Director

SHANNON M. CHAMBERS
Labor Commissioner

STATE OF NEVADA



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Department of Business & Industry

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Senate Bill 207 – Apprenticeship Utilization Act becomes effective January 1, 2020
<https://www.leg.state.nv.us/App/NELIS/REL/80th2019/Bill/6351/Text>

APPRENTICE VERIFICATION PROCESS

When a Contractor and/or Subcontractor first lists an Apprentice on a Certified Payroll Report (CPR) they must submit with that CPR documentation to substantiate that the Apprentice is registered with the Bureau of Apprenticeship and Training of the Office of Apprenticeship, Training, Employer and Labor Services of the Employment and Training Administration of the United States Department of Labor or its successor **and** the State Apprenticeship Council. (Emphasis added). A properly enrolled and registered Apprentice is exempt from NRS 338.020 to NRS 338.090, inclusive. An Apprentice is paid pursuant to terms of the Apprenticeship Agreement/Standards for the type of work covered by the Apprenticeship Agreement/Standards as approved by the State Apprenticeship Council and/or Nevada Revised Statutes (NRS) section 610 or Nevada Administrative Code (NAC) section 610. (See NRS 338.080)

ELECTRONIC REPORTING/VERIFICATION OF APPRENTICES FOR CERTIFIED PAYROLL REPORTS AND SENATE BILL 207

Contractor and/or Subcontractors utilizing electronic Certified Payroll Reporting software, such as LCP Tracker or other software, should upload the documentation substantiating that the Apprentice is registered with the Bureau of Apprenticeship and Training of the Office of Apprenticeship, Training, Employer and Labor Services of the Employment and Training Administration of the United States Department of Labor or its successor **and** the State Apprenticeship Council. The Contractor and/or Subcontractor should upload any Apprentice Forms verifying the Apprentice's registration and any expiration parameters that need to be applied for the Apprentice in the Certified Payroll Reporting software.

The Awarding/Public Bodies should verify and review /certify that the Apprentice is registered and that the supporting documents were electronically uploaded before a Contractor and/or Subcontractor can certify them on the first Certified Payroll Report. The Awarding/Public Bodies and/or other entities as necessary, will validate the Apprentice information as the database Administrator for that project or multiple projects. This will allow the database Administrator, typically, the Awarding/Public Bodies, to verify and accept the Apprentice Forms for the Apprentice/Worker in question, regardless of the number of projects the Apprentice/Employee may be assigned to within the database.

****Contractors and/or Subcontractors and/or Awarding/Public Bodies will not need to obtain an Apprentice Verification Form because, the Apprentice Forms will be loaded into the database by the Contractor and/or Subcontractor along with any expiration parameters. This information will then be reviewed and verified by the Awarding/Public Bodies and/or other entities as necessary.**

This Apprentice approval process ensures an Apprentice is: 1.) Registered with the Bureau of Apprenticeship and Training of the Office of Apprenticeship, Training, Employer and Labor Services of the Employment and Training Administration of the United States Department of Labor or its successor **and** the State Apprenticeship Council; and 2.) Assists with validating Apprentice %'s for purposes of Senate Bill 207.

Compliance with Senate Bill 207 (Passed during 2019 Legislative Session.) The Awarding/Public Bodies and Contractors or Subcontractors must ensure the reporting of Apprentices complies with Senate Bill 207, unless a Waiver has been granted by the Labor Commissioner. Apprentices shall be used and reported for at least 10 % of the total hours on vertical construction and 3 % of the total hours for horizontal construction of the total hours of labor worked for each apprenticed craft or type of work to be performed on the public work when more than three employees of each a craft are employed at the site of work.

Apprenticeship Ratio: Be sure to review the apprenticeship standards to see if they provide for a ratio of apprentices to journeymen. If the ratio is not complied with the apprentice is to be paid at full journeyman rate for the type of work performed. (See NAC 338.0095). Awarding/Public Bodies may contact the Governor's Office of Workforce Innovation to verify the proper apprenticeship ratio because, they have jurisdiction over the Nevada State Apprenticeship Council and apprenticeship standards/agreements and the registration of apprentices.

STEVE SISOLAK
Governor

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Director

SHANNON M. CHAMBERS
Labor Commissioner

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**SUPPLEMENTAL GUIDANCE
APPRENTICESHIP UTILIZATION ACT
MARCH 5, 2021**

**WHAT DOES MORE THAN 3 WORKERS EMPLOYED FOR EACH
APPRENTICED CRAFT OR TYPE OF WORK PERFORMED MEAN?**

For a public works project over \$100,000, the Apprenticeship Utilization Act – Nevada Revised Statutes (NRS) section 338.01165, would be triggered when there were more than 3 workers employed for each apprenticed craft or type of work to be performed on the public works project. NRS section 338.01165 does not specify or clarify if the more than 3 is for the entire public works project, or more than 3 for a specific day(s), week(s), and/or another period. NRS section 338.01165 does however clarify that for Horizontal Construction, if there are more than 3 workers employed for each apprenticed craft or type of work performed, then 3% of the total hours for that apprenticed craft or type of work performed must be worked by an apprentice. For Vertical Construction, it is 10% of the total hours for that apprenticed craft or type of work performed that must be worked by an apprentice.

The Office of the Labor Commissioner/Labor Commissioner (OLC/LC) has interpreted the plain language of NRS section 338.01165 in connection with the legislative history and intent to mean that there must be more than 3 employees/workers employed on the public works project/work site at any one time and/or the same time for each apprenticed craft or type of work performed to trigger the requirements of NRS section 338.01165. In other words, there must be a “crew” of more than 3 employees/workers for each apprenticed craft or type of work performed on the public works project/work site at the same time for the requirements of NRS section 338.01165 to apply. This could include a crew of more than 3 employee/workers of an apprenticed craft or type of work performed present at the same time on the project/work site for only 1 full day of work. The OLC/LC would also look to the potential rotation of crews to avoid the requirements of NRS section 338.01165.

CITY OF SPARKS

Project Workforce Checklist

For Compliance with the Nevada Apprenticeship Utilization Act, 2019

Project: _____ Contractor: _____

Craft/Type of Work	More than 3 Employees Anticipated?	Anticipate Needing Waiver?†
Air Balance Technician	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Alarm Installer	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Boilermaker	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Bricklayer , can also include tile setter, terrazzo workers and marble masons.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Carpenter , can also include cement masons, floor coverer, millwright and piledriver (non-equipment), plasterers and terrazzo workers.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Cement Mason	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Electrician , includes communication technician, line, neon sign and wireman. Can also include alarm installer.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Elevator Constructor	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Fence Erector	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Flag Person	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Floor Coverer	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Glazier (see also Painters and Allied Trades)	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Highway Striper	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Hod Carrier , includes brick-mason tender and plaster tender.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Iron Worker , can also include fence erectors (steel/iron)	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Laborer , can also include fence erector (non-steel/iron), flag person, highway striping and traffic barrier erector	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Lubrication and Service Engineer	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Mason , can also cement, plasterer, tile setter, terrazzo workers and marble masons	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Mechanical Insulator	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Millwright	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Operating Engineer , can also include equipment greaser, piledriver, soils and material tester, steel fabricator/erector (equipment) and surveyor (non-licensed) and well driller.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Painters and Allied Trades , can also include glaziers, floor coverers, and tapers.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Pile Driver (non-equipment)	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>

Craft/Type of Work	More than 3 Employees Anticipated?	Anticipate Needing Waiver? [‡]
Plasterer	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Plumber/Pipefitter	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Refrigeration	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Roofer (not sheet metal)	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Sheet Metal Worker, can also include air balance technician.	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Soils and Materials Tester, includes certified soil tester	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Sprinkler Fitter	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Surveyor (non-licensed)	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Taper	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Tile/Terrazzo Worker/Marble Mason	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Traffic Barrier Erector	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Truck Driver	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Well Driller (see also Operating Engineer)	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Other*:	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
[‡] Pursuant to the Labor Commissioner’s Nov. 27, 2019 Advisory Opinion, waivers are not required in those crafts/types of work where no recognized apprenticeship program exists in the region where the public work is located. Contractor is responsible for verifying whether recognized apprenticeship programs exist in the region for each craft/type of work to be performed.		
*Contractor is responsible for ensuring all crafts/types of work to be performed on the public work are accounted for in this checklist. Attach additional pages if needed.		

I affirm I am fully authorized to acknowledge, on behalf of the Contractor listed above, the anticipated workforce, and acknowledge that changes to the anticipated workforce which may have an impact on compliance with the Nevada Apprenticeship Utilization Act, 2019 will require the submittal of a revised form within ten (10) working days of such change.

Signed: _____

Name and Title: _____

Date: _____

Contractor Name: _____

STATE OF NEVADA
Office of the Labor Commissioner

REQUEST FOR APPRENTICE AVAILABILITY ON A PUBLIC WORK

Senate Bill (SB) 207 - Apprenticeship Utilization Act passed during the 2019 Legislative Session adds a section to NRS section 338. In passing SB 207, The Legislature hereby finds and declares that: (1) A skilled workforce in construction is essential to the economic well-being of the State; (2) Apprenticeship programs are a proven method of training a skilled workforce in construction; and (3) Requiring the use of apprentices on the construction of public works will ensure the availability of a skilled workforce in construction in the future for this State. <https://www.leg.state.nv.us/App/NELIS/REL/80th2019/Bill/6351/Text>

You may use this form to request an Apprentice or determine availability of an Apprentice from a Registered Apprenticeship Program in the applicable craft or trade in the area of the Public Works Project. For information about Registered Apprenticeship Programs in your area and Registered Apprentices, please visit www.labor.nv.gov or the Nevada State Apprenticeship Council at www.owinn.nv.gov/Apprenticeship/AboutSAC/ *The Governor's Office of Workforce Innovation (OWINN) is responsible for the Nevada State Apprenticeship Council and the approval and registration of Apprenticeship Programs and Apprentices.

Requests for dispatch must be in writing and submitted (and received) at least 5 business days in advance (excluding weekends and holidays) via first class mail, fax or email. Proof of submission (and receipt) will be required. Please refer to Chapter 610 of the Nevada Revised Statutes and Nevada Administrative Code Chapter 610 for the laws and regulations governing Registered Apprenticeship Programs and Registered Apprentices.

<u>Request Submitted to:</u> _____	<u>Date Request Submitted:</u> _____
------------------------------------	--------------------------------------

Name of Registered Apprenticeship Program: _____
Contact Person/Title: _____
Address: _____, _____, NV _____
Tel No.: (____) _____ Fax No.: (____) _____ Email: _____

Requestor Information:
Contractor/Subcontractor: _____ License Number: _____
Contact Person/Title: _____
Address: _____, _____, _____
Tel No.: (____) _____ Fax No.: (____) _____ Email: _____

Availability Request Information:
Number of Apprentice(s) Required: ____ Craft or Trade: _____
Apprentice(s) Report Date: _____ (5 business days' notice required) Report Time: __: __ __.
Name of Person to Report to: _____
Address to Report to: _____, _____, NV _____

Project Information:
Contract Name/Number: _____ Project Location: _____
Awarding Body Name: _____
Contact Person/Title: _____
Tel No.: (____) _____ Fax No.: (____) _____ Email: _____

 Print Name/Title _____ *Signature ____/____/____ Date

*By signing this form you certify that the information you have provided is true and correct to the best of your knowledge.

Request Approved: Request Denied:

Notes: _____

 Print Name/Title _____ Signature ____/____/____ Date
 Date Received: _____ Date Returned: _____

**Governor's Office of Workforce
Innovation (OWINN)**

Main Phone # 702-486-8080

When completed, email to:
NVApprenticeship@gov.nv.gov



**REQUEST FOR NEVADA
REGISTERED APPRENTICE
VERIFICATION**

Name of requesting contractor/awarding body/organization:	
Name and title of person requesting this verification:	
Contact phone # of person requesting this verification:	
Email address of person requesting this verification:	
Date this request was submitted to OWINN:	
Additional information regarding current Public Works projects for requester: (for example, project owner(s), PWP/contract #(s), project name(s), etc.)	

*APPRENTICE NAME (First, Last)	RAPIDS ID #	OCCUPATION	APPRENTICESHIP PROGRAM (for example, Local 12)
Additional information regarding apprentice(s): (for example, apprentice status, wage %, etc.)			

*Apprentices only need to be verified once per year/per contractor, and once approved, can be used for multiple Public Works.

Note: The Requesting Contractor/Awarding Body/Organization certifies and assures the information above is true and correct. It also acknowledges that Journeymen wages must be paid for time worked during canceled or suspended time periods or when required ratios are not met. Furthermore, the OWINN office will not process this Apprentice Verification request unless this form is signed, and ALL FIELDS are completed.

Signed: _____ **Date:** _____

Name/Title: _____

FOR OWINN USE ONLY

Date Received: _____

Occupation	Initial Ratio		Ratio Thereafter	
	Apprentice(s)	per Journeymen	Apprentice(s)	per Journeymen
	_____ / _____		_____ / _____	
	_____ / _____		_____ / _____	

OWINN Verified by: _____ Date: _____

STATE OF NEVADA
Office of the Labor Commissioner

APPRENTICESHIP UTILIZATION ACT WAIVER REQUEST

Senate Bill (SB) 207 - Apprenticeship Utilization Act passed during the 2019 Legislative Session adds a section to NRS section 338. In passing SB 207, The Legislature hereby finds and declares that: (1) A skilled workforce in construction is essential to the economic well-being of the State; (2) Apprenticeship programs are a proven method of training a skilled workforce in construction; and (3) Requiring the use of apprentices on the construction of public works will ensure the availability of a skilled workforce in construction in the future for this State. <https://www.leg.state.nv.us/App/NELIS/REL/80th2019/Bill/6351/Text>

A Public Body, upon the request of a contractor or subcontractor, may submit a request for a modification or waiver of the percentage of hours of labor of one or more apprentices prior to (1) the bid advertisement; (2) the bid opening; or (3) the award of the contract if, "Good Cause" exists. The Labor Commissioner may also grant a waiver from the requirements of SB 207 after work on the public work has commenced if the public body, contractor or subcontractor submits documentation and evidence that meets the requirements to establish "Good Cause."

Public Works Project (PWP) # _____

Awarding Body Name: _____

Contact Person/Title: _____

Address: _____, NV _____

Phone: (____) _____ **Fax:** (____) _____ **E-Mail:** _____

Contractor/Subcontractor: _____ **License Number:** _____

Contact Person/Title: _____

Address: _____, _____

Phone: (____) _____ **Fax:** (____) _____ **E-Mail:** _____

Please check the box for the reason for a Waiver Request and provide/submit supporting documentation/evidence:

Yes No

There are no Apprentices available from an Apprenticeship Program Registered by the Nevada State Apprenticeship Council within the jurisdiction where the public work is to be completed.

Yes No

The contractor or subcontractor is required to perform uniquely complex or hazardous tasks on the public work that require the skill and expertise of a greater percentage Apprentice or Journeyworkers.

Yes No

The contractor or subcontractor has requested Apprentices from a Registered Apprenticeship Program and the request has been denied or the request has not been approved within 5 business days.

Please attach additional documentation/evidence supporting the Waiver Request or describe why an Apprentice is not available or cannot be provided:

Contractor/Subcontractor Name Date Waiver Request Submitted to Awarding Body *Signature

Awarding Body Printed Name/Title *Signature Date

**By signing this form, you certify that the information you have provided is true and correct to the best of your knowledge.*

For Office of the Labor Commissioner's Use Only:

Waiver Request Approved: Waiver Request Denied:

Notes: _____

Printed Name/Title Signature Date

Date Received: _____ **Date Returned:** _____

Forms

(to be used following award of bid)

- 1) Contract Form**
- 2) Performance Bond**
- 3) Payment Bond**



TITLE
BID # BIDNUMBER
PWP# PWPNUMBER

THIS CONTRACT made and entered into on this DAY day of MONTH, YEAR by and between the City of Sparks, Nevada, a municipal corporation, existing under and by virtue of the laws of the State of Nevada, hereinafter called "City", and **CONTRACTORNAME**, a qualified Contractor in the class of work required, hereinafter called "Contractor".

W I T N E S E T H

WHEREAS, the City has awarded a contract to Contractor for providing material and/or performing the work hereinafter mentioned in accordance with the proposal of said Contractor;

WHEREAS, the Contractor will provide the material and/or perform the work for the compensation stated in said proposal, an amount which has been arrived at between the parties;

WHEREAS, each party is willing to and does assume joint liability for the contents of this Contract, and each party accordingly agrees that it shall not be construed against any party as a drafting party;

NOW, THEREFORE, IT IS AGREED as follows:

1. Scope of Work:

The scope of work for this contract is generally defined as **TITLE**. The City's Contract Documents and Contractor's Entire Proposal are on file with the City of Sparks. All terms, conditions and requirements contained within these Documents, including any and all bid documents, addenda and specifications issued by the City, are hereby incorporated by reference into this Contract.

The Contractor shall perform within the time stipulated, the Contract as herein defined and shall provide and furnish any and all of the labor, materials, methods or processes, equipment implements, tools, machinery and equipment, and all utility, transportation and other services required to construct, install and put in complete order for use in a good and workmanlike manner all of the work covered by the Contract in connection with strict accordance with the plans and specifications therein, which were approved by said City and are on file with the City, including any and all addenda issued by the City, and with the other contract documents hereinafter enumerated.

2. Payment for Project Services

As full consideration for the Services to be performed by Contractor, City agrees to pay Contractor as set forth in accordance with the bid and not to exceed fee of **\$AMOUNT** for the project.

A monthly progress payment in the amount of ninety-five percent (95%) of the value of the work completed may be made every thirty (30) days upon application by the Contractor and certification by the Project Manager that such work has been completed.

Partial payments will be made once each month as the work satisfactorily progresses and after acceptance



by the authorized City representative. The progress estimates shall be based upon materials in place, or on the job site and invoiced, and labor expended thereon. From the total of the amount ascertained will be deducted an amount equivalent to five percent (5%) of the whole, which five percent (5%) will be retained by the City until after completion of the entire Contract in an acceptable manner. Any time after fifty percent (50%) of the value of the work has been completed, the City will make any of the remaining partial payments in full.

No such estimates or payments shall be required to be made, when, in the judgment of the City Project Manager, the work is not proceeding in accordance with the provision of the Contract, or when in his judgment the total value of the work done since last estimate amounts to less than Five Hundred Dollars (\$500.00).

The cost of materials conforming to the plans and specifications (materials being those which are required to be contained and incorporated in a finished contract bid item) delivered to the project and not at the time incorporated in the work, may also be included in the estimate for payment. No such estimate or payment shall be construed to be an acceptance of any defective work or improper material. The Contractor shall be responsible for, and shall not remove from the project any material that has been included in the estimate for payment.

Final payment shall be made upon the Project Manager certifying that the Contractor has satisfactorily completed the work in conformity with the Contract Documents.

3. Time for Completion:

The Contractor shall deliver the material and/or services called for in the specifications/proposal and within the delivery time specified and in accordance with the terms of the contract. Work shall be completed within _____ days from the Notice to Proceed issued by the City of Sparks Purchasing Division. The Contractor shall not alter or vary any terms or conditions contained or incorporated herein, including but not limited to, the quantity, price, delivery date or date designated as After Receipt of Order (ARO) or date for commencement or completion of services as mutually agreed upon, unless such alteration or variation is consented to in writing by a duly authorized representative of the City.

The City reserves the right to cancel resultant Contract upon ten days written notice in the event the type and quality of the product or work performance is unsatisfactory or in default, subject to Contractor's right to cure as outlined in termination clause.

This is a non-exclusive Contract and the City reserves the right to acquire the material and/or services at its discretion, from other sources during the term of this Contract.

4. No Unlawful Discrimination:

In connection with the performance of work under this contract, the contractor agrees not to discriminate against any employee or applicant for employment because of race, creed, color, national origin, sex, sexual orientation, gender identity or expression, or age, including, without limitation, with regard to 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, without



limitation, apprenticeship. The contractor further agrees to insert this provision in all subcontracts hereunder, except subcontracts for standard commercial supplies or raw materials.

Any violation of these provisions by Contractor shall constitute a material breach of contract. In all cases where persons are employed in the construction of public works, preference must be given when the qualifications of the applicants are equal:

- A) First: To honorably discharged soldiers, sailors and marines of the United States who are citizens of the State of Nevada.
- B) Second: To other citizens of the State of Nevada

If the provisions of this section are not complied with by the contractor engaged on the public work, the contract is void, and any failure or refusal to comply with any of the provisions of this section renders any such contract void and subject to the exceptions contained in this section, no money may be paid out of the State Treasury or out of the treasury of any political subdivision of the State to any person employed on any work mentioned in this section unless there has been compliance with the provisions of this section. Any contractor engaged on a public work or any other person who violates any of the provisions of this section is guilty of a misdemeanor. The penalties provided for in this section do not apply where violations thereof are due to misrepresentations made by the employee or employees.

5. No Illegal Harassment:

Violation of the City's harassment policy, which is incorporated by reference and available from the Human Resource Division, by the Contractor, its officers, employees, agents, vendors, consultants, subcontractors and anyone from whom it is legally liable, while performing or failing to perform Contractor's duties under this Contract shall be considered a material breach of contract.

6. Lawful Performance:

Vendor shall abide by all Federal, State and Local Laws, Ordinances, Regulations, and Statutes as may be related to the performance of duties under this agreement. In addition, all applicable permits and licenses required shall be obtained by the vendor, at vendor's sole expense.

7. Preferences (This Section IS IS NOT Applicable to this contract):

To the extent Contractor has sought and qualified for a bidding preference and this project has a value of over \$250,000 pursuant to Nevada Revised Statutes Chapter 338, Contractor acknowledges and agrees that the following requirements will be adhered to, documented and attained for the duration of the Project:

- 1. At least 50 percent of the workers employed on the Project (including subcontractors) hold a valid driver's license or identification card issued by the Nevada Department of Motor Vehicles;
- 2. All vehicles used primarily for the public work will be (a) registered and (where applicable) partially apportioned to Nevada; or (b) registered in Nevada; and
- 3. The Contractor shall maintain and make available for inspection within Nevada all payroll records related to the Project.

Contractor recognizes and accepts that failure to comply with any requirements herein shall be a



material breach of the contract and entitle the City of Sparks to liquidated damages in the amount set by statute. In addition, the Contractor recognizes and accepts that failure to comply with any requirements herein may lose its certification for a preference in bidding and/or its ability to bid on any contracts for public works pursuant to NRS Chapter 338.

To the extent Contractor has sought and qualified for a bidding preference and this project has a value of over \$250,000 pursuant to Nevada Revised Statutes Chapter 338, each contract between the contractor, applicant or design-build team and a subcontractor must provide for the apportionment of liquidated damages assessed pursuant to this section if a person other than the Contractor was responsible for the breach of a contract for a public work caused by a failure to comply with a requirement of Items 1-5 within this section. The apportionment of liquidated damages must be in proportion to the responsibility of each party for the breach.

8. Prevailing Wages:

The Contractor and subcontractors shall be bound by and comply with all federal, state and local laws with regard to minimum wages, overtime work, hiring and discrimination, including Chapter 338 of the NRS, which is entitled, "Public Works Projects."

The Contractor shall ensure that all employees on the work site are paid in accordance with the CURRENT PREVAILING WAGE RATES AS APPROVED BY THE STATE LABOR COMMISSIONER, whenever the actual value of the Contract totals One Hundred Thousand Dollars (\$100,000) or more, or when required by the Supplementary Conditions. If a Change Order causes a Contract to exceed One Hundred Thousand Dollars (\$100,000), the State Labor Commissioner may audit the entire Contract period.

Questions involving the Prevailing Wage Rates for the City of Sparks should be referred to the Labor Commissioner, State of Nevada, at (775) 687-4850.

When federal money is associated with the project making the Contract subject to both state and federal wage rates, the Contractor shall not pay less than the higher rate when the two rates differ for similar kinds of labor.

- A. Posting of Minimum Wage Rates - In accordance with NRS, Chapter 338, Section 338.020, the Contractor shall post the hourly and daily rate of wages to be paid to each of the classes of mechanics and workers on the site of Work of this Contract in a place generally visible to the workers.
- B. Pursuant to NRS 338.060 and 338.070, the Contractor hereby agrees to forfeit, as a penalty to the City of Sparks, not less than Twenty Dollars (\$20) nor more than Fifty Dollars (\$50) for each calendar day or portion thereof that each worker employed on the Contract is paid less than the designated rate for any work done under the Contract, by the Contractor or any subcontractor under him, or is not reported to the City of Sparks as required by NRS 338.070.
- C. The contractor and each subcontractor shall keep or cause to be kept an accurate record showing, for each worker employed by the contractor or subcontractor:
 - (1) The name of the worker;



-
- (2) The occupation of the worker;
 - (3) If the worker has a driver's license or identification card, an indication of the state or other jurisdiction that issued the license or card; and
 - (4) The actual per diem, wages and benefits paid to the worker.

In addition, the contractor and each subcontractor shall keep or cause to be kept an accurate record showing, for each worker employed by the contractor or subcontractor who has a driver's license or identification card:

- (1) The name of the worker;
- (2) The driver's license number or identification card number of the worker; and
- (3) The state or other jurisdiction that issued the license or card.

D. The records in Section C above must be open at all reasonable hours to the inspection of the City of Sparks, and its officers and agents. A copy of the each record for each calendar Month for the General Contractor and all Sub-Contractors must be submitted to the City of Sparks no later than 15 days after the end of each month for the previous months' wages.

9. Apprenticeship Utilization Act:

Senate Bill 207 (Apprenticeship Utilization Act) passed during the 2019 Legislative Session added sections 338.0116 and 338.01165 to the NRS. These new provisions apply to bids for public works where the value exceeds \$100,000.00. In passing SB 207, The Legislature hereby finds and declares that: (1) A skilled workforce in construction is essential to the economic well-being of the State; (2) Apprenticeship programs are a proven method of training a skilled workforce in construction; and (3) Requiring the use of apprentices on the construction of public works will ensure the availability of a skilled workforce in construction in the future for this State.

A contractor or subcontractor engaged in **horizontal construction** who employs a worker on a public work pursuant to NRS 338.040 shall use one or more apprentices for at least 3 percent of the total hours of labor worked for each apprenticed craft or type of work to be performed on the public work for which more than three workers are employed.

“Horizontal Construction” means any construction, alteration, repair, renovation, demolition or remodeling necessary to complete a public work, including, without limitation, any irrigation, drainage, water supply, flood control, harbor, railroad, highway, tunnel, airport or airway, sewer, sewage disposal plant or water treatment facility and any ancillary vertical components thereof, bridge, inland waterway, pipeline for the transmission of petroleum or any other liquid or gaseous substance, pier, and any other work incidental thereto. The term does not include vertical construction, the construction of any terminal or other building of an airport or airway, or the construction of any other building.

A contractor or subcontractor engaged in **vertical construction** who employs a worker on a public work pursuant to NRS 338.040 shall use one or more apprentices for at least 10 percent of the total hours of labor worked for each apprenticed craft or type of work to be performed on the public work for which more than three workers are employed.



“Vertical Construction” means any construction, alteration, repair, renovation, demolition or remodeling necessary to complete a public work for any building, structure or other improvement that is predominantly vertical, including, without limitation, a building, structure or improvement for the support, shelter and enclosure of persons, animals, chattels or movable property of any kind, and any other work or improvement appurtenant thereto.

A Public Body/Awarding Body, upon the request of a contractor or subcontractor, **MAY** submit a request for a modification or waiver of the percentage of hours of labor of one or more apprentices prior to (1) the bid advertisement; (2) the bid opening; or (3) the award of the contract if, “Good Cause” exists. The Labor Commissioner may also grant a modification or waiver from the requirements of NRS 338.01165 after work on the public work has commenced.

10. Acceptance by the City:

It is expressly understood and agreed that all materials provided and/or work done by the Contractor shall be subject to inspection and acceptance by the City at its discretion, and that any progress inspections and approval by the City of any item or work shall not forfeit the right of the City to require the correction of faulty workmanship or material at any time during the course of the work, although previously approved by oversight. Nothing herein contained shall relieve the Contractor of the responsibility for proper construction and maintenance of the work, materials and equipment required under the terms of this Contract until all work has been completed and accepted by the City.

11. Waiver:

No waiver of any term, provision or condition of this Contract, whether by conduct or otherwise, in any one or more instances, shall be deemed to be nor shall it be construed as a further or continuing waiver of any such term, provision or condition of this Contract. No waiver shall be effective unless it is in writing and signed by the party making it.

12. Notices:

All notices required to be given in writing by this Contract shall be deemed to be received (i) upon delivery if personally delivered, or (ii) when receipt is signed for if mailed by certified or registered mail, postage prepaid, or by express delivery service or courier, when addressed as follows (or sent to such other address as a Party may specify in a notice to the others):

PURCHASING MANAGER
CITY OF SPARKS
431 PRATER WAY
PO BOX 857
SPARKS, NV 89432-0857

CONTRACTOR:
CONTACT
CONTRACTORNAME
ADDRESS
CITY, STATE ZIP
e-mail:

13. Arbitration:

Any and all disputes, controversies or claims arising under or in connection with this Contract, including without limitation, fraud in the inducement of this Contract, or the general validity or enforceability of this Contract, shall be governed by the laws of the State of Nevada without giving effect to conflicts of law principles, may be submitted to binding arbitration before one arbitrator, and shall be conducted in



accordance with the Commercial Arbitration Rules of the American Arbitration Association in a private manner in Washoe County, Nevada. This award shall be final and judgment may be entered upon it in any court having jurisdiction thereof. In reaching this final award, the arbitrator shall have no authority to change or modify any provision of this Contract. All other expenses of arbitration shall be borne equally by the parties. All fees, including legal fees, shall be borne by the party who incurred them. All costs of enforcement shall be borne by the losing party. Each party shall have the right to discovery in accordance with the Nevada Rules of Civil Procedure.

14. Jurisdiction and Venue:

In the event the arbitration award is challenged, any action or proceeding seeking to do so must be brought in the courts of the State of Nevada, County of Washoe, or if the party can acquire subject-matter jurisdiction, in the United States District Court for the District of Nevada in the City of Reno. Each of the parties consents to the personal jurisdiction of such courts (and of the appropriate appellate courts) in any such action or proceeding and waives any objection to venue laid therein. Process in any action or proceeding referred to in the preceding sentence may be served on either party by sending it certified mail to the respective addresses designated for notice.

15. Indemnification:

To the fullest extent permitted by law, upon award, Contractor shall hold harmless, indemnify, defend and protect City, its affiliates, officers, agents, employees, volunteers, successors and assigns (“Indemnified Parties”), and each of them from and against any and all claims, demands, causes of action, damages, costs, expenses, actual attorney’s fees, losses or liabilities, in law or in equity, of every kind and nature whatsoever (“Claims”) arising out of or related to any act or omission of Contractor, its employees, agents, representatives, or Subcontractors in any way related to the performance of work under this Agreement by Contractor, or to work performed by others under the direction or supervision of Contractor, including but not limited to:

1. Personal injury, including but not limited to bodily injury, emotional injury, sickness or disease, or death to persons;
2. Damage to property of anyone, including loss of use thereof;
3. Penalties from violation of any law or regulation caused by Contractor’s action or inaction;
4. Failure of Contractor to comply with the Insurance requirements established under this Agreement;
5. Any violation by Contractor of any law or regulation in any way related to the occupational safety and health of employees.

In determining the nature of the claim against City, the incident underlying the claim shall determine the nature of the claim, notwithstanding the form of the allegations against City.

If City’s personnel are involved in defending such actions, Contractor shall reimburse City for the time and costs spent by such personnel at the rate charged City for such services by private professionals.

In cases of professional service agreements, requiring professional liability coverage:

If the insurer by which a Consultant is insured against professional liability does not so defend the



City and applicable agents and/or staff, and the Consultant is adjudicated to be liable by a trier of fact, the City shall be entitled to reasonable attorney's fees and costs to be paid to the City by the Consultant in an amount which is proportionate to the liability of the of the Consultant.

Nothing in this contract shall be interpreted to waive nor does the City, by entering into this contract, waive any of the provisions found in Chapter 41 of the Nevada Revised Statutes.

16. Licenses and Permits:

The Contractor shall procure at his own expense all necessary licenses and permits and shall adhere to all the laws, regulations and ordinances applicable to the performance of this Contract.

All Contractors, Sub-Contractors and Suppliers doing business within the City of Sparks are required to obtain a current business license from the City of Sparks prior to commencement of this contract. Per Sparks Municipal Code Section 5.08.020A: "It is unlawful for any person to transact business in the City without first having obtained a license from the City to do so and without complying with all applicable provisions of this title and paying the fee therefore."

17. Insurance:

BIDDERS' ATTENTION IS DIRECTED TO THE INSURANCE REQUIREMENTS BELOW. IT IS HIGHLY RECOMMENDED THAT BIDDERS CONFER WITH THEIR RESPECTIVE INSURANCE CARRIERS OR BROKERS TO DETERMINE IN ADVANCE OF BID SUBMISSION THE AVAILABILITY OF INSURANCE CERTIFICATES AND ENDORSEMENTS AS PRESCRIBED AND PROVIDED HEREIN. IF THE APPARENT LOW BIDDER FAILS TO COMPLY STRICTLY WITH THE INSURANCE REQUIREMENTS, THAT BIDDER MAY BE DISQUALIFIED FROM AWARD OF THE CONTRACT.

The City may, unless otherwise required by law, waive or reduce the insurance requirements itemized here, at the discretion of the city's Contracts and Risk Manager.

Should work be required on City premises or within the public right-of-way, upon award of the contract, the bidder shall provide proof of insurance for the types of coverage, limits of insurance and other terms specified herein, prior to initiation of any services under City, Bid, Proposal or Contract. Coverage shall be from a company authorized to transact business in the State of Nevada and the City of Sparks and shall meet the following minimum specifications:

Contractor shall at its own expense carry and maintain at all times the following insurance coverage and limits of insurance no less than the following or the amount customarily carried by Contractor or any of its subcontractors, whichever is greater. Contractor shall also cause each subcontractor employed by Contractor to purchase and maintain insurance of the type specified herein. All insurers must have AM Best rating not less than A-VII, and be acceptable to the City. Contractor shall furnish copies of certificates of insurance evidencing coverage for itself and for each subcontractor. Failure to maintain the required insurance may result in termination of this contract at City's option. If Contractor fails to maintain the insurance as set forth herein, City shall have the right, but not the obligation, to purchase said insurance at Contractor's expense.



Contractor shall provide proof of insurance for the lines of coverage, limits of insurance and other terms specified below prior to initiation of any services. Coverage shall be from a company authorized to transact business in the State of Nevada and the City of Sparks. Contractor and any of its subcontractors shall carry and maintain coverage and limits no less than the following or the amount customarily carried by Contractor or any of its subcontractors, whichever is greater.

Applicable to this Contract	Insurance Type	Minimum Limit	Insurance Certificate	Additional Insured	Waiver of Subrogation
Yes	General Liability/Umbrella (Excess) Liability	\$2,000,000	✓	✓	✓
Yes	Automobile Liability	\$1,000,000	✓	✓	
Yes	Workers' Compensation	Statutory	✓	N/A	✓
Yes	Employer's Liability	\$1,000,000	✓	N/A	
No	Professional Liability	\$1,000,000	✓	N/A	N/A
No	Pollution Legal Liability	\$1,000,000	✓	N/A	N/A

Commercial General Liability

Contractor shall carry and maintain Commercial General Liability (CGL) and, if necessary to meet required limits of insurance, commercial umbrella/excess liability insurance with a total limit of not less than the limits specified herein.

For contracts that are for the construction or improvement of public facilities, the Contractor shall obtain and maintain products and completed operations liability coverage through the statute of repose after completion of the project. Continuing commercial umbrella coverage, if any, shall include liability coverage for damage to the insured's completed work equivalent to that provided under ISO form CG 00 01.

There shall be no endorsement or modification of the CGL limiting the scope of coverage for liability arising from pollution, explosion, collapse, underground property damage, or damage to the named insured's work unless Subcontractor carries and maintains separate policies providing such coverage and provides Contractor evidence of insurance confirming the coverage.

Minimum Limits of Insurance

- \$2,000,000** Each Occurrence Limit for bodily injury and property damage
- \$2,000,000** General Aggregate Limit
- \$2,000,000** Products and Completed Operations Aggregate Limit
- \$10,000** Medical Expense Limit

If Commercial General Liability Insurance or other form with a general aggregate limit is used, it shall be revised to apply separately to this PROJECT or LOCATION.



Coverage Form

Coverage shall be at least as broad as the unmodified Insurance Services Office (ISO) Commercial General Liability (CGL) "Occurrence" form CG 00 01 04/13 or substitute form providing equivalent coverage and shall cover liability arising from premises, operations, independent contractors, products-completed operations, personal and advertising injury, and liability assumed under an insured contract (including the tort liability of another assumed in a business contract).

Additional Insured

City, its officers, agents, employees, and volunteers are to be included as insureds using the applicable ISO additional insured endorsement(s) or substitute forms providing equivalent coverage, in respects to damages and defense arising from: activities performed by or on behalf of Contractor, including the insured's general supervision of Contractor; products and completed operations of Contractor; premises owned, occupied, or used by Contractor. The coverage shall contain no special limitations on the scope of protection afforded to City, its officers, employees, or volunteers. Additional insured status for City shall apply until the expiration of time within which a claimant can bring suit per applicable state law.

Primary and Non-Contributory

Contractor's insurance coverage shall apply as primary insurance with respect to any other insurance or self-insurance programs afforded to City, its officers, agents, employees, and volunteers. There shall be no endorsement or modification of the CGL to make it excess over other available insurance; alternatively, if the CGL states that it is excess or pro rata, the policy shall be endorsed to be primary with respect to the additional insured. Any insurance or self-insurance maintained by City, its officers, employees, or volunteers shall be excess of Contractor's insurance and shall not contribute with it in any way.

Waiver of Subrogation

Contractor waives all rights against City and its agents, officers, directors and employees for recovery of damages to the extent these damages are covered by the commercial general liability or commercial umbrella liability insurance maintained pursuant to this agreement. Insurer shall endorse CGL policy as required to waive subrogation against the City with respect to any loss paid under the policy.

Endorsements

Policy forms or endorsements are required confirming coverage for all required additional insureds. The forms or endorsements for CGL shall be at least as broad as the unmodified ISO additional insured endorsement CGO 20 10 07/04 and CG 20 37 07/04 or substitute forms providing additional insured coverage for products and completed operations.

A waiver of subrogation in favor of City shall be endorsed to the policy using an unmodified Waiver of Transfer of Rights of Recovery of Others to Us ISO CG 24 04 05 09, or a substitute form providing equivalent coverage.

Electronic Data Liability

If any underground work will be performed, Contractor shall maintain electronic data liability insurance applicable to the Project and insuring against liability arising out of the loss of, loss of use of, damage to,



corruption of, inability to access, or inability to manipulate electronic data. This coverage shall be maintained with a limit of liability of not less than \$1,000,000 and provide coverage at least as broad as electronic data liability coverage form CG 04 37 (or substitute form providing equivalent coverage).

Railroad Protective Liability

For any construction or demolition work within fifty (50) feet of a railroad, Contractor shall maintain Railroad Protective Liability insurance on behalf of and in the name of the railroad, as named insured, with a limit of \$6,000,000 per occurrence or higher limit if required by the railroad. Contractor shall also ensure that any exclusions pertaining to the indemnification of a railroad are removed from its CGL policy or that ISO form CG 24 17 (Contractual Liability-Railroads Endorsements) is included in the coverage.

Business Automobile Liability

Minimum Limits of Insurance

\$1,000,000 Combined Single Limit per accident for bodily injury and property damage or the limit customarily carried by Contractor, whichever is greater. No aggregate limit may apply. Coverage may be combined with Excess/Umbrella Liability coverage to meet the required limit.

Coverage Form

Coverage shall be at least as broad as the unmodified Insurance Services Office (ISO) Business Automobile Coverage form CA 00 01 10/13, CA 00 25 10/13, CA 00 20 10/13 or substitute form providing equivalent coverage. Such insurance shall cover liability arising out of any auto (including owned, hired, and non-owned autos).

Pollution liability coverage at least as broad as that provided under the ISO pollution liability—broadened coverage for covered autos endorsement (CA 99 48) shall be provided, and the Motor Carrier Act endorsement (MCS 90) shall be attached for all contracts involving transportation of “hazardous material” as this term is defined by applicable law, including, but not limited to, waste, asbestos, fungi, bacteria and mold.

Additional Insured

City, its officers, agents, employees, and volunteers are to be included as insureds with respect to damages and defense arising from the ownership, maintenance or use of automobiles owned, leased, hired, or borrowed by the Contractor. The coverage shall contain no special limitations on the scope of protection afforded to City, its officers, employees, or volunteers. Additional insured status for City shall apply until the expiration of time within which a claimant can bring suit per applicable state law.

Endorsements

A policy endorsement is required listing all required additional insureds. The endorsement for Business Automobile Liability shall be at least as broad as the unmodified ISO CA 20 48 10/13 or a substitute form confirming City’s insured status for Liability Coverage under the Who Is An Insured Provision contained in Section II of the coverage form ISO CA 00 01 10/13.

Waiver of Subrogation.

Contractor waives all rights against City, its officers, agents, employees, and volunteers for recovery



of damages to the extent these damages are covered by the commercial general liability or commercial umbrella liability insurance maintained pursuant to this agreement. Contractor's insurer shall endorse policy to waive subrogation against City with respect to any loss paid under the policy.

Workers' Compensation and Employer's Liability

Contractor shall carry and maintain workers' compensation and employer's liability insurance meeting the statutory requirements of the State of Nevada, including but not limited to NRS 616B.627 and NRS 617.210 or provide proof that compliance with the provisions of Nevada Revised Statutes Chapters 616A-D and all other related chapters is not required. It is understood and agreed that there shall be no coverage provided for Contractor or any Subcontractor of the Contractor by the City. Contractor agrees, as a precondition to the performance of any work under this Agreement and as a precondition to any obligation of the City to make any payment under this Agreement to provide City with a certificate issued by an insurer in accordance with NRS 616B.627 and with a certificate of an insurer showing coverage pursuant to NRS 617.210.

It is further understood and agreed by and between City and Contractor that Contractor shall procure, pay for and maintain the above-mentioned coverage at Contractor's sole cost and expense.

Should Contractor be self-funded for workers' compensation and employer's liability insurance, Contractor shall so notify City in writing prior to the signing of this Contract. City reserves the right to approve said retentions, and may request additional documentation, financial or otherwise, for review prior to the signing of this Contract.

Upon completion of the project, Contractor shall, if requested by City, provide a Final Certificate for itself and each Subcontractor showing that Contractor and each Subcontractor had maintained the required Workers Compensation and Employer's Liability by paying all premiums due throughout the entire course of the project.

Nevada law allows the following to reject workers' compensation coverage if they do not use employees or subcontractors in the performance of work under the contract:

- Sole proprietors (NRS 616B.627 and NRS 617.210)
- Unpaid officers of quasi-public, private or nonprofit corporations (NRS 616B.624 and NRS 617.207)
- Unpaid managers of limited liability companies (NRS 616B.624 and NRS 617.207)
- An officer or manager of a corporation or limited liability company who owns the corporation or company (NRS 616B.624 and NRS 617.207)

If a contractor has rejected workers' compensation coverage under applicable Nevada law, the contractor must indicate the basis for the rejection of coverage and complete, sign and have notarized an Affidavit of Rejection of Coverage. The Affidavit must be completed, signed and notarized prior to performance of any work.

Minimum Limits of Insurance

Workers' Compensation:	Statutory Limits
Employer's Liability:	\$1,000,000 Bodily Injury by Accident – Each Accident



\$1,000,000 Bodily Injury by Disease – Each Employee
\$1,000,000 Bodily Injury by Disease – Policy Limit

Coverage Form

Coverage shall be at least as broad as the unmodified National Council on Compensation Insurance (NCCI) Workers Compensation and Employer’s Liability coverage form WC 00 00 07/11 or substitute form providing equivalent coverage.

OTHER INSURANCE COVERAGES (IF APPLICABLE)

Professional Liability Insurance (if Applicable) \$1,000,000 each claim limits of liability or whatever limit is customarily carried by the Contractor, whichever is greater, for design, design-build or any type of professional services. If coverage is required on a claims-made or claims-made and reported basis, any applicable retroactive or pending & prior litigation dates must precede the effective date of this contract. Continuous coverage shall be maintained, or an extended reporting period shall be obtained for a period of at least three (3) years following completion of the project.

Contractors Pollution Liability Insurance (If Applicable)- \$1,000,000 per occurrence and \$2,000,000 aggregate or whatever amount is acceptable to the City for any exposure to “hazardous materials” as this term is defined in applicable law, including but not limited to waste, asbestos, fungi, bacterial or mold.

Coverage shall apply to bodily injury; property damage, including loss of use of damaged property or of property that has not been physically injured; cleanup costs; and defense, including costs and expenses incurred in the investigation, defense, or settlement of claims.

City shall be included as an insured under Contractor’s pollution liability insurance.

If coverage is required on a claims-made or claims-made and reported basis, any applicable retroactive or pending & prior litigation dates must precede the effective date of this contract. Continuous coverage shall be maintained, or an extended reporting period shall be obtained for a period of at least three (3) years following completion of the project.

If the scope of services as defined in this contract includes the disposal of any hazardous materials from the job site, Contractor must furnish to City evidence of pollution liability insurance maintained by the disposal site operator for losses arising from the insured facility accepting waste under this contract. Coverage certified to the City under this section must be maintained in minimum amounts of \$1,000,000 per loss, with an annual aggregate of at least \$2,000,000.

Lower tier sub-subcontractors, Truckers, Suppliers: Evidence confirming lower tier subcontractors, truckers and suppliers are maintaining valid insurance prior to beginning work on the project to meet the requirements set forth herein on Subcontractor, including but not limited to all additional insured requirements of Subcontractor.

ALL COVERAGES

Coverage shall not be suspended, voided, canceled, or non-renewed by either CONTRACTOR or by the



insurer, reduced in coverage or in limits except after thirty (30) days' prior written notice has been given to CITY except for ten (10) days' notice for nonpayment of premium.

DEDUCTIBLES AND RETENTIONS

Any deductibles or self-insured retentions that exceed \$100,000.00 per occurrence or claim must be declared to and approved by the City's Contracts and Risk Manager and prior to signing this Contract. City is entitled to request and receive additional documentation, financial or otherwise, prior to giving its approval of the deductibles and self-insured retentions. Any changes to the deductibles or self-insured retentions made during the term of this Contract or during the term of any policy must be approved by City's Contracts and Purchasing Manager prior to the change taking effect. Contractor is responsible for any losses within deductibles or self-insured retentions.

OTHER INSURANCE PROVISIONS

Should City and Contractor agree that higher coverage limits are needed warranting a project policy, project coverage shall be purchased and the premium for limits exceeding the above amount may be borne by City. City retains the option to purchase project insurance through Contractor's insurer or its own source.

Any failure to comply with reporting provisions of the policies shall not affect coverage provided to City, its officers, agents, employees, or volunteers.

ACCEPTABILITY OF INSURERS

Insurance is to be placed with insurers with a Best's rating of no less than A-VII and acceptable to the City. City, with the approval of the Risk Manager, may accept coverage with carriers having lower Best's ratings upon review of financial information concerning Contractor and insurance carrier. City reserves the right to require that Contractor's insurer be a licensed and admitted insurer in the State of Nevada, or meet any applicable state and federal laws and regulations for non-admitted insurance placement.

VERIFICATION OF COVERAGE

Contractor shall furnish City with certificates of insurance and with original endorsements affecting coverage required by this contract. The certificates and endorsements for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf.

Prior to the start of any Work, Contractor must provide the following documents to City of Sparks, Attention: Purchasing Division, P.O. Box 857, Sparks, NV 89432-0857:

- A. Certificate of Insurance.** Contractor must provide a Certificate of Insurance form to the City of Sparks to evidence the insurance policies and coverage required of Contractor.
- B. Additional Insured Endorsements.** An original Additional Insured Endorsement, signed by an authorized insurance company representative, must be submitted to the City of Sparks, by attachment to the Certificate of Insurance, to evidence the endorsement of the City of Sparks as additional insured.
- C. Policy Cancellation Endorsement.** Except for ten (10) days' notice for non-payment of



premium, each insurance policy shall be endorsed to specify that without thirty (30) days prior written notice to the City of Sparks, the policy shall not be suspended, voided, cancelled or non-renewed, and shall provide that notices required by this paragraph shall be sent by certified mailed to the address specified above. A copy of this signed endorsement must be attached to the Certificate of Insurance. If endorsements are not available, Contractor shall be responsible to provide prior written notice to City as soon as practicable upon receipt of any notice of cancellation, non-renewal, reduction in required limits or other material change in the insurance required under this Agreement.

D. Bonds (as Applicable). Bonds as required and/or defined in the original bid documents.

All certificates and endorsements are to be addressed to the City of Sparks, Purchasing Division and be received and approved by City before work commences. The City reserves the right to require complete certified copies of all required insurance policies at any time.

SUBCONTRACTORS

Contractor shall include all Subcontractors as insureds under its policies or shall furnish separate certificates and endorsements for each Subcontractor. All coverages for Subcontractors shall be subject to all the requirements stated herein.

MISCELLANEOUS CONDITIONS

1. Contractor shall be responsible for and remedy all damage or loss to any property, including property of City, caused in whole or in part by Contractor, any Subcontractor, or anyone employed, directed, or supervised by Contractor.
2. Nothing herein contained shall be construed as limiting in any way the extent to which Contractor may be held responsible for payment of damages to persons or property resulting from its operations or the operations of any Subcontractors under it, and such coverage and limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to City in this contract.
3. In addition to any other remedies City may have if Contractor fails to provide or maintain any insurance policies or policy endorsements to the extent and within the time herein required, City may, at its sole option:
 - a. Purchase such insurance to cover any risk for which City may be liable through the operations of Contractor under this Agreement and deduct or retain the amount of the premiums for such insurance from any sums due under the Agreement;
 - b. Order Contractor to stop work under this Agreement and/or withhold any payments which become due Contractor here under until Contractor demonstrates compliance with the requirements hereof; or,
 - c. Terminate the Agreement.
4. If Contractor's liability policies do not contain the standard ISO separation of insureds condition, or a substantially similar clause, they shall be endorsed to provide cross-liability coverage.

18. Liquidated Damages:

If the Product is not delivered/Project is not completed within the time stipulated in the bid, the



Contractor shall pay to the City of Sparks as fixed, agreed and liquidated damages for delay and not as a penalty (it being impossible to determine the actual damages occasioned by the delay) \$AMT for each _____ day of delay until delivery is completed; the Contractor shall be liable to the City of Sparks for the amount herein. This amount may be deducted from money due or to become due to the Contractor as compensation under this proposal in the event the Contractor fails to meet delivery schedules or product specifications.

19. Material Breach of Contract:

In the event Contractor fails to deliver the product and services as contracted for herein, to the satisfaction of the City of Sparks or otherwise fails to perform any provisions of this Contract, the City, after providing five (5) days written notice and Contractor's failure to cure such breach within the time specified in the notice, may without waiving any other remedy, make good the deficiencies and deduct the actual cost of providing alternative products and/or services from payment due the Contractor. Non-performance after the first notice of non-performance shall be considered a material breach of contract.

20. Force Majeure:

Neither party to the Contract shall be held responsible for delay or default caused by fire, riot, acts of God, and/or war which is beyond that party's reasonable control. City may terminate the Contract upon written notice after determining such delay or default will reasonably prevent successful performance of the Contract.

21. Termination:

The City may terminate the Contract for material breach of contract upon ten (10) days written notice and recover all damages, deducting any amount still due the Contractor from damages owed to the City, or seek other remedy including action against all bonds. The Contractor may terminate the Contract for material breach of contract upon thirty (30) days written notice to the City.

22. Assignment:

All of the terms, conditions and provisions of this Contract, and any amendments thereto, shall inure to the benefit of and be binding upon the parties hereto, and their respective successors and assigns. The Contractor shall not assign this Contract without the written consent of the City which will not be unreasonably withheld.

23. Entire Contract:

This Contract constitutes the entire agreement of the parties and shall supersede all prior offers, negotiations, agreements and contracts whether written or oral. Any modifications to the terms and conditions of this Contract must be in writing and signed by both parties.

24. Severability:

If any part of this Contract is found to be void it will not affect the validity of the remaining terms of this Contract which will remain in full force and effect.

25. Headings:

Paragraph titles or captions contained in this Contract are inserted only as a matter of convenience and for reference only, and in no way define, limit, extend, or describe the scope of this Contract or the intent of any provision herein.



26. Singular Includes the Plural; Gender; Title Reference:

Whenever the singular number is used in this Contract and when required by the context, the same shall include the plural, and the use of any gender, be it masculine, feminine or neuter, shall include all of the genders, and the word "person" or "entity" shall include corporation, firm, partnership, or any other combination or association.

The use of the title "Bidder", "Vendor", "Contractor" or "Consultant" within this contract or associated bid documents shall be deemed interchangeable and shall refer to the person or entity with whom the City of Sparks is contracting for the service or product referenced within this contract.

27. Execution:

The parties agree to execute such additional documents and to take such additional actions as are reasonably necessary or desirable to carry out the purposes hereof. They also agree, acknowledge and represent that all corporate authorizations have been obtained for the execution of this Contract and for the compliance with each and every term hereof. Each undersigned officer, representative or employee represents that he or she has the authority to execute this Contract on behalf of the party for whom he or she is signing.

THIS SPACE INTENTIONALLY LEFT BLANK



IN WITNESS WHEREOF, the City of Sparks has caused this Contract to be executed by its officers thereunto duly authorized and the Consultant has subscribed same, all on the day and year first above written.

(Vendor)

CITY OF SPARKS, NEVADA
A Municipal Corporation

By: _____

By: _____
Ed Lawson, Mayor

(Title)

APPROVED AS TO FORM

ATTEST:

City Attorney

City Clerk

CITY OF SPARKS, NEVADA - BOND OF FAITHFUL PERFORMANCE

Bid #: _____

Bond #: _____

Surety Rating: _____

NV License #: _____

Appt. Agent Countersigning - List below with address

KNOW ALL MEN BY THESE PRESENTS: That WHEREAS, the City of Sparks in the State of Nevada has awarded to **CONTRACTORNAME** hereinafter designated as the "Principal" a contract for Bid # **BIDNUMBER**, PWP # **PWPNUMBER**, for the **TITLE** and

WHEREAS, said Principal is required under the terms of said contract to furnish a bond for the faithful and proper performance of the Contract and the Bonding Company has an "A" or better rating with Moody's or A.M. Best and T-Listed with the U.S. Treasury Department;

NOW, THEREFORE, we the Principal and _____ as Surety, are held and firmly bound unto the City of Sparks in the State of Nevada, in the penal sum of **WRITTENAMOUNT** dollars (**\$AMOUNT**), lawful money of the United States, being not less than one hundred percent (100%) of the estimated contract cost of the work, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that if the above bound Principal, his or its heirs, executors, administrators, successors or assigns, shall in all things stand to and abide by, and well and truly keep and faithfully perform the covenants, conditions and agreements in the said contract and any alterations made as therein provided on his or their part to be kept and performed at the time and in the manner therein specified, and in all respects according to their true intent and meaning, and shall indemnify and save harmless the City of Sparks in the State of Nevada, its officers and agents as therein stipulated, then this obligation shall become null and void; otherwise, it shall be and remain in full force and virtue.

As a condition precedent to the satisfactory completion of the said contract, the above obligation shall hold good for a period of one (1) year after the completion and acceptance of the said work, during which time, if the above bounden principal, his or its heirs, executors, administrators, successors or assigns shall fail to make full, complete and satisfactory repair and replacements or totally protect the said City of Sparks in the State of Nevada from loss or damage made evident during said period of one (1) year from the date of acceptance of said works, and resulting from or caused by defective materials or faulty workmanship in the prosecution of the work done, the obligation in the said sum of **WRITTENAMOUNT** dollars (**\$AMOUNT**), shall remain in full force and virtue; otherwise the above obligation shall be void.

And 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 or to the work to be performed thereunder or the specifications accompanying the same shall in anyway effect its obligations 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, to the work or to the specifications.

IN WITNESS WHEREOF, the above bound parties have executed this instrument under their seals this ____ day of _____, 20__, the name and corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

Principal

By _____

Surety

By _____

CITY OF SPARKS, NEVADA – Payment Bond – Labor & Materials

Bid #: _____

Bond #: _____

Surety Rating: _____

NV License #: _____

Appt. Agent Countersigning - List below with address

KNOW ALL MEN BY THESE PRESENTS: That WHEREAS, the City of Sparks in the State of Nevada, has awarded to **CONTRACTORNAME** hereinafter designated as the “Principal” a contract for Bid # **BIDNUMBER**, PWP # **PWPNUMBER**, for the **TITLE** and

WHEREAS, said Principal is required under the terms of said contract to furnish a Bond for the faithful and proper performance of the Contract and the Bonding Company has an “A” or better rating with Moody’s or A.M. Best and T-Listed with the U.S. Treasury Department;

NOW, THEREFORE, we, the Principal, and _____ as Surety, are held and firmly bound unto the City of Sparks in the State of Nevada, in the penal sum of **WRITTENAMOUNT** dollars (\$**AMOUNT**), lawful money of the United States, being not less than one hundred percent (100%) of the estimated contract cost of the work for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally firmly by these presents.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH that if the above bounden principal, his or its heirs, executors, administrators, successors, or assigns, shall fail to pay for any materials, provisions, provender or other supplies, implements, or machinery used in, upon, for, or about the performance of the work contracted to be done or for any work or labor thereon of any kind, or for amounts due under the Unemployment Compensation Law with respect to such work or labor as required by the provisions of NRS 612, and provided that the claimant shall have complied with the provisions of said law, the Surety hereon will pay for the same within thirty (30) calendar days an amount not exceeding the sum specified in this bond, then the above obligation shall be null and void; otherwise to remain in full force and account. In case suit is brought upon this bond, the said Surety agrees to pay a reasonable attorney’s fees to be fixed by the Court.

The Bond shall insure to the benefit of any and all persons, companies and corporations entitled to file claims under NRS 339 as to give a right of action to them or their assigns in any suit brought upon this Bond.

IN WITNESS WHEREOF, the above bound parties have executed this instrument under their seals this ____ day of _____, 20____, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

Principal

By _____

Surety

By _____