BID FOR

ENTRANCE GATE-TMWRF

BID # 16/17-018

PWP # WA-2017-145

BIDS DUE NOT LATER THAN: 1:45 PM ON APRIL 20, 2017

PUBLIC BID OPENING: 2:00 PM ON APRIL 20, 2017

[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
ENTRANCE GATE-TMWRF
BID #16/17-018 / PWP #WA-2017-145

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 APRIL 20, 2017.** 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. Bids will be opened and publicly read at **2:00 PM ON APRIL 20, 2017**, at Sparks City Hall, 431 Prater Way Sparks, NV 89431.

PROJECT DESCRIPTION: Construction of a new Entrance Gate Facility for the Truckee Meadows Water Reclamation Facility (TMWRF), security fencing, vehicle parking and turnaround area, and power and control service and connections to the new Entrance Gate Facility. The location of the new entrance gate is on Clean Water Way approximately 1600 feet before reaching the TMWRF facility.

PRE-BID MEETING: A **MANDATORY** pre-bid meeting will be held at the project site (8500 Cleanwater Way), at 1:00PM on April 6, 2017. Contractors wishing to submit bids on this project must attend the pre-bid meeting to be considered in evaluation.

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://www.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: March 29, 2017
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 Contractor wishes to potentially apply their preference.
7. _____ Bid Bond
8. _____ Signed Bid Addenda (if applicable)

CITY OF SPARKS
BID ITEM SCHEDULE

BID TITLE: **ENTRANCE GATE - TMWRF**

BID #16/17-018 / PWP# WA-2017-145

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)

Item No.	Quantity	Unit	Description	Unit Price	Total Price
1	1	LS	Mobilization	$ _____ /LS	$ _____
2	1	LS	Temporary Erosion Control	$ _____ /LS	$ _____
3	1	LS	Temporary Traffic Control	$ _____ /LS	$ _____
4	1	LS	Electrical / Communication / Control Service	$ _____ /LS	$ _____
5	1	LS	Guard Booth and Entrance Gate Facility	$ _____ /LS	$ _____
6	6,700	SF	Vehicle Parking and Turnaround Area	$ _____ /SF	$ _____
7	1,120	SF	Asphalt Surface Restoration	$ _____ /SF	$ _____
8	1	LS	Concrete Surface Restoration	$ _____ /LS	$ _____
9	1	LS	Landscape Surface Restoration	$ _____ /LS	$ _____
10	1	LS	Force Account	$50,000 / LS	$50,000.00

Grand Total	
$_____	$ _____
(written total bid price)	

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:

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. The Bidder shall list the name of a Subcontractor for each portion of any of the Work the value of which exceeds one percent (1%) of the Bid Price.

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 **ENTRANCE GATE-TMWRF,** Bid # **16/17-018,** 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.

Contractor/Bidder:

(Printed Name of Contractor/Bidder) BY:

Firm:

Address:

City:

State / Zip Code:

Telephone Number:

Fax Number:

E-mail Address:

(Signature of Principal) Signature:

DATED this day of , 2017.

State of Nevada)
) SS.
County of _____)

On this day of , in the year 2017, 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 RESPONSIBIILTY MATTERS
(This form to be signed and returned at the time of bid)

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 **ENTRANCE GATE-TMWRF** (**Bid #16/17-018**) 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 # **16/17-018**, PWP # **WA-2017-145**, for the **ENTRANCE GATE-TMWRF**.

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

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 **ENTRANCE GATE-TMWRF**, 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.

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

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 $250,000 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:
http://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.

22. 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:

(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.

23. 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.

24. 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.

25. 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.

26. 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.

27. 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.

28. 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.

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	

Applicable to this Contract	Insurance Type	Minimum Limit	Insurance Certificate	Additional Insured	Waiver of Subrogation
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.

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, employment-related practices, 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.

Any failure by the Contractor to comply with reporting provisions of the policies shall not affect its obligations to the additional insureds.

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.

Separation of Insureds

Contractor's insurance shall apply separately to each insured against whom a claim is made or suit is brought, except with respect to the limits of the insurer's liability.

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

A policy form or endorsement is required confirming coverage for all required additional insureds. The endorsement for CGL shall be at least as broad as the unmodified ISO additional insured endorsement CG 20 10 11/85 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.

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.

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.

Workers' Compensation and Employer's Liability
Contractor shall carry and maintain workers' compensation and employer's liability insurance as required by NRS 616B.627 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.

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 per occurrence 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 with a minimum of three (3) years reporting of claims 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.

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.

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 on the Insurance Commissioner's approved but not admitted list.

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.

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 of 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.
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.

29. 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.

30. 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.

(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.

31. 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.

32. 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 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.

33. 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.

34. 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/departments/financial-services/purchasing/bids-rfps).

(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).

(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.

35. 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.

36. 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.

37. 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.

38. 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.

39. 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.

40. 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.

41. 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.

42. 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.

43. Optional Cooperative Purchase Agreement
It is intended that any other public agency (i.e., city, county, district, public agency, municipality or state agency) shall have the option to participate (A.K.A. "join" or "piggyback") in any award made as a result of this solicitation. The City of Sparks shall incur no financial responsibility in connection with purchase orders or contracts made by the bidder with another public agency resulting from this solicitation. The public agency utilizing the original contract shall accept sole responsibility for placing orders and making applicable payments to the vendor. Should the Bidder not wish for a contract resulting from this bid to be used by other public agencies, they have the option to decline that option at the time of request.

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.

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

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
ENTRANCE GATE-TMWRF
BID #16/17-018 / PWP #WA-2017-145

These Special Provisions supplement and modify the "Standard Specifications for Public Works Construction" Latest Edition, and adopted by the City of Sparks, Nevada. All of 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
This project includes construction of a new Entrance Gate Facility for the Truckee Meadows Water Reclamation Facility (TMWRF), security fencing, vehicle parking and turnaround area, and power and control service and connections to the new Entrance Gate Facility. The location of the new entrance gate is on Clean Water Way approximately 1600 feet before reaching the TMWRF facility.

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: STANDARD SPECIFICATIONS
All materials furnished and work performed shall be done in accordance with the most current edition of the "Standard Specifications for Public Works Construction" (Orange Book) and any revisions thereto if not covered or amended by the Special Provisions. The "Standard Specifications for Public Works Construction" are herein referred to as "Standard Specifications".

SECTION 4: STANDARD DETAILS
All materials furnished and work performed shall be done in accordance with the most current edition of the "Standard Details for Public Works Construction" (Orange Book) and any revisions thereto if not covered or amended by the Special Provisions. The "Standard Details for Public Works Construction" are herein referred to as "Standard Details".

SECTION 5: 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 ninety (90) working days from the time of issuance of the Notice to Proceed. The Notice to Proceed date will be discussed and determined at the Pre-construction meeting.

SECTION 6: 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, FIVE HUNDRED DOLLARS ($500.00) for each and every calendar day of delay in finishing the work in excess of the number of working days 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 7: EXCUSABLE DELAYS

The CONTRACTOR shall not be assessed with liquidated damage nor the cost of Project Coordinatoring 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 Coordinator in writing of the causes of delay. The Project Coordinator's findings of the facts thereon shall be final and conclusive.

SECTION 8: INTENT OF THE 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 9: AUTHORITY OF THE PROJECT COORDINATOR AND INSPECTOR

All work shall be done under the supervision of the Project Coordinator acting on behalf of the City. The Project Coordinator 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 Coordinators estimate shall be "condition precedent" to the right of the CONTRACTOR to receive money due him under the contract. The Project Coordinator does not have authority to authorize changes in plans and specifications without prior written approval of the Engineer.

The Engineer 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 TMWRF Project Coordinator. All instructions given by the inspector are subject to approval by the TMWRF Project Coordinator.

Inspections related to satisfaction of the City of Sparks Building Permit shall be performed by the City.

SECTION 10: 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 11: COOPERATION WITH OTHER CONTRACTORS

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

SECTION 12: DISPOSAL OF EXCESS AND WASTE MATERIALS
Trash, construction debris, cleared vegetation, excavated material unsuitable to be incorporated in the 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 13: LIMITS OF CONTRACTOR'S OPERATIONS
If the CONTRACTOR's operations result in damage to any publicly or privately owned facilities outside the limitations of the construction easement, the CONTRACTOR shall, at his expense, repair such damage or indemnify the owner of the damaged property.

If the CONTRACTOR negotiates with property owners for the use of land for construction operations outside the limits of the construction easements, he shall do so at his own risk and the City will assume no liability for such use of private property. All agreements between the CONTRACTOR and private property owners shall be in writing and the City will be furnished copies of such agreements.

At no time will the CONTRACTOR be allowed to store debris or materials on the street overnight. All asphalt, concrete, soil and aggregate base will be hauled off at the conclusion of each working day. Materials for installation of Drop Inlets (Pipe, boxes frame and cover) will be allowed to be stored onsite with the approval of the Project Coordinator or inspector.

SECTION 14: PROTECTION OF EXISTING UTILITIES
The location of existing utilities and drain lines shown on the plans are not guaranteed, but indicates generally their location according to the best knowledge of the Project Coordinator. The CONTRACTOR shall notify Underground Services Alert (USA Dig) at 1-800-227-2600, and NV Energy, Truckee Meadows Water Reclamation Facility (TMWRF), The City of Sparks, Truckee Meadows Water Authority (TMWA), SBC, Charter Communications and other cable companies not less than five (5) working days prior to the start of construction to verify the location and depths of utilities.

The CONTRACTOR shall inform himself of the exact location of all vaults, boxes, conduits, ducts, cables, pipe systems, etc. and shall protect said utilities. Any damage caused by operation of the CONTRACTOR shall be repaired by the CONTRACTOR at his own expense. It shall be the CONTRACTOR's responsibility to contact the impacted utility for any replacement hardware.

SECTION 15: CONTRACT AMOUNT
The total amount payable under this contract shall be determined by the sum of the amounts earned and the various quantities of repairs actually made and determined from unit prices as furnished by the CONTRACTOR in the schedule of prices contained in his proposal. The various quantities of repairs in the bid proposal are estimates and the City of Sparks reserves the right to vary quantities as may be necessary.

SECTION 16: PRECONSTRUTION CONFERENCE
After the execution of the contract, but prior to the commencement of any work, a preconstruction conference between the CONTRACTOR, TMWRF, and the City will be held at a mutually acceptable time and place.

SECTION 17: MEASUREMENT FOR PAYMENT
Whenever possible, the actual quantities installed or work performed on any project shall be measured on the site of the work by a crew composed of both the CONTRACTOR and the Project Coordinator. This combined crew shall record all measured quantities in field notebooks, in legible and understandable

entries. The CONTRACTOR and the Project Coordinator shall each have a set of field notes which are to be in agreement on all quantities and items measured and shall include all work accomplished on the project under contract. Each set of field measurements shall be initialed and dated by responsible representatives of the CONTRACTOR and the Project Coordinator participating on the combined crew. In the event that it is not possible to form a combined crew for the measurements, the area repaired shall be measured by the Project Coordinator.

SECTION 18: SURFACE MOUNTED UTILITY ADJUSTMENT

It shall be the CONTRACTOR's responsibility to adjust all surface mounted utility appurtenances, such as manholes, survey monument covers and valve boxes to grade consistent with the grade of the restored street surface.

SECTION 19: PRE/POST-CONSTRUCTION WALK-THRU

The CONTRACTOR, Inspector, and/or Project Coordinator shall conduct a pre and post construction walk-thru. This shall be accomplished to determine limits of construction and existing conditions at each site and the surrounding area. The CONTRACTOR should walk the site and note all existing conditions. Concrete pavers, mow strips, fencing, edging, sprinklers block and brick walls, etc. are within this area. Any damage and finish back to these landscapes will be included within the scope of work and no additional pay item will be allowed for this work.

The CONTRACTOR will be required to video tape the entire project prior to any construction including all effected properties and staging locations. This video media will be in a DVD format and a copy of the tape will be provided to the City. Areas near the property lines, back of sidewalk and driveways, landscaping, mow strips, fences and edging should be filmed in great detail to avoid any damage or disputes with property owners. The CONTRACTOR will be required to replace and or repair all areas that damaged by construction activities. Areas that are in question or concern should be noted on the video and the CONTRACTOR should notify the project coordinator or inspector.

SECTION 20: WORKING DAY, WORK HOURS, SATURDAY, SUNDAY, HOLIDAY AND OVERTIME WORK

The CONTRACTOR shall not perform any contract work on 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 Coordinator and as specified herein. 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 Coordinator 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 Coordinator at least twenty-four (24) hours prior to commencing such overtime work. If the CONTRACTOR plans to perform work on Sunday, he/she shall obtain approval by the Thursday prior to work on the 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 Coordinator 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 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

Coordinator when requested in writing by the CONTRACTOR, excluding but not limited to, the following legal Holidays, recognized by the City of Sparks:

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

SECTION 21: SUBMITTALS

Submittals for the following items shall be provided at the time of the preconstruction meeting and shall have been performed within the previous 12 months. Two (2) copies of each item should be submitted.

- Traffic Control Plan
- Worker Certifications (if necessary)
- Trench Backfill Materials
- Aggregate Base
- Portland Cement Concrete Mix Design
- Asphalt Mix Design
- Prefabricated Guard Booth
- Motorized Lift Gate and Operator
- Chain Link Fence Materials
- Asset Attribute List
- Lighting Fixtures and poles
- Security Cameras
- Gate controls(Card Reader, Keypads, etc.)
- Conductors
- Raceway's and Boxes
- Grounding and bonding
- Disconnects
- Low voltage Transformers
- Data and Fiber cabling
- Data Cabinet

SECTION 22: TRAFFIC CONTROL

All traffic control shall conform to the latest editions of the NDOT Work Zone Traffic Control Handbook and the Manual on Uniform Traffic Control Devices (MUTCD) and as directed by the City of Sparks Community Services Department.

The CONTRACTOR shall designate a Traffic Control Supervisor (TCS), certified by the American Traffic Safety Services Association (ATSSA), who shall be responsible for planning, initiating, installing and maintaining all traffic control devices, as shown on the traffic control plan, as specified in the

MUTCD and these specifications. The designated construction TCS shall be available to be contacted twenty-four (24) hours a day, seven (7) days a week, for the life of this Contract.

The traffic control plan shall scaled such that all proposed signage and traffic control for all streets in the entire unit can be seen on one full size (24"x 36") plan sheet. The CONTRACTOR shall submit two (2) copies of proposed traffic control plan to the Project Coordinator for review and comments five (5) working days prior to the pre-construction meeting. The proposed traffic control plan shall be prepared and signed by a certified TCS, retained by the CONTRACTOR.
The CONTRACTOR's traffic control plans shall include, but not be limited to, the following:

Proposed construction zone and existing speed limits
All construction signing
Message board locations
Location of flaggers
Types and locations of traffic control devices
Temporary lane striping
Construction phasing
Lane crossovers between construction phases
Method for maintaining traffic signal functions
Special events accommodations
Detours
Accommodations for pedestrian, bicycle, and transit facilities

If, during construction, revisions to the accepted plan is necessary or safety or accommodation to traffic, these changes must also be prepared by the ATSSA certified, Traffic Control Supervisor.

The Project Coordinator may authorize a suspension of work during unfavorable weather or other conditions beyond the control of the CONTRACTOR. During such a suspension, the CONTRACTOR shall make passable and shall open to traffic such portions of the project under improvement and such temporary roadways or portions thereof as may be agreed upon between the CONTRACTOR and the City of Sparks Project Coordinator for the accommodation of necessary traffic during the period of suspension. The maintenance of the temporary route, replacement or renewal of any work or materials lost or damaged, removal of any work or materials and temporary maintenance shall be at the expense of the CONTRACTOR.

Flaggers will be required if Project Coordinator believes it is needed due to current activity or traffic safety. Failure to comply with Flagger requirements will result in an immediate shut down of all construction activity. Work will resume when the flagger requirement has been satisfied.

During non-working hours any hazardous section of the work shall be outlined with markers and flares. If deemed necessary by the Project Coordinator, barricades shall be erected to protect public traffic or he may direct the CONTRACTOR to furnish flagger(s) and pilot cars. Such markers, flares, barricades, flagging or piloting shall be at the expense of the CONTRACTOR.

When the CONTRACTOR's hauling equipment is required to merge with a cross traffic and at such other points which may be necessary to maintain safe traffic conditions, flaggers shall be provided to each side of the impairment to stop and direct traffic.

In case of damage to detours due to storms or other causes, the CONTRACTOR shall at once repair the damage, provide other detours or provide for carrying traffic through construction operations. Water shall

be applied at points and in amounts as directed by the Project Coordinator, to keep the roadbed firm, smooth, stable and to reduce the dust hazard to a minimum.

Construction Zone Signs shall be placed on all cross streets where traffic is to be maintained. They shall be placed a sufficient distance from the construction to give motorist's adequate warning of the construction. None of the provisions herein shall be construed to restrict or prohibit, at any time, the prosecution of items of work, which will not interfere with the use of existing streets.

All flagging, piloting, signs, barricades, maintenance of work, streets, structures, detours, temporary approaches, replacement or renewal of work, water applied for these items or for dust control, shall not be paid for directly, but shall be included in various pay items of the proposal and the CONTRACTOR shall not be paid an additional amount for such work. When so ordered by the Project Coordinator, detours shall be surfaced and the materials needed shall be paid for by the cubic yard or ton as set forth in the pay items of the proposal.

SECTION 23: TRUCKEE MEADOWS WATER RECLAMATION (TMWRF) FACILITY ACCESS

Continual access must be available for TMWRF. Traffic may be halted temporarily as needed for construction but traffic delays shall be minimized to the greatest extent possible and not exceed 15 minutes in duration.

SECTION 24: CLEANUP AND DUST CONTROL

It shall be the CONTRACTOR's responsibility to provide cleanup and dust control throughout all phases of construction, including suspension of work, and until final acceptance of the project. The CONTRACTOR shall keep the work site and other adjacent areas clean and free from rubbish and debris. The CONTRACTOR shall also abate dust nuisance by cleaning, sweeping, and sprinkling with water, or other means as necessary. A power broom will not be an acceptable means of cleaning the site unless used in conjunction with water to prevent dust from the power broom operation. The use of water resulting in mud on public streets will not be permitted as a substitute for sweeping or other methods. All water used for dust control must be from a potable water source.

All construction procedures shall conform to WCDHD-AQMD standards.

Excess excavated material from trenches, manholes, catch basins or similar structures in public streets shall be removed from the site immediately. Sufficient material may remain for use as backfill, but shall not remain during non-working hours. Forms and form lumber shall be removed from the site as soon as practical after stripping. No screening of excavated material will be allowed in the street. The CONTRACTOR shall remove all trash from the site in a timely manner. At no time shall the CONTRACTOR permit disposal of trash in any excavation.

Materials and equipment shall be removed from the site as soon as they are no longer necessary; and, upon completion of the work and before final inspection, the entire worksite shall be cleared of equipment, waste and unused materials, construction debris and rubbish so as to present a satisfactory clean and neat appearance.

Care shall be taken to prevent spillage on haul routes. Any such spillage shall be removed immediately and the area cleaned.

Failure of the CONTRACTOR to comply with the City's cleanup orders may result in an order to suspend work until the condition is corrected. Working days will continue to be counted during the suspension.

No additional compensation will be allowed as a result of such suspension. No extension of contract time will be allowed as a result of such suspension.

If the contract time expires before final cleanup has been completed, liquidated damages, as specified in these Special Provisions, may be imposed.

SECTION 25: FORCE ACCOUNT

THIS ITEM SHALL BE IDENTIFIED AS A CONTINGENT ITEM. The use of this contingent item will be as directed by the Project Coordinator. The quantity of the above contingent item of work, as set forth on the bid schedule represent no actual estimate, is nominal only and may be greatly increased or decreased or reduced to zero. The increase or reduction of this quantity as compared with that set forth on the bid schedule shall not constitute a basis for claim by the CONTRACTOR for extra payment or damages.

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. Unforeseen circumstances include but are not limited to the following:

Emergency repairs, complications arising with interfacing new improvements to existing improvements, emergency pumping, emergency light/power plants, premium time or overtime to accelerate portions of work, unexpected utility modifications or conflicts, correcting existing substandard work, requested traffic control measures or signage, over-excavation of unsuitable materials, unknown field conditions, underground storage tanks, asbestos encountered, or any other miscellaneous or incidental items related to unforeseen circumstances.

Any force account items shall be adjusted daily upon report sheets, furnished to the Project Coordinator 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 Coordinator.

SECTION 26: 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 27: LOCATION OF WORK, PUBLIC RELATIONS

It shall be the CONTRACTOR'S responsibility to notify, in writing, all residents and businesses adjacent to this project of the construction working hours and duration of work. Notification shall be provided directly to impacted properties (i.e. properties abutting the work) seven (7) calendar days prior to beginning work at that location **excepting** notification for Monday and Tuesday work shall be provided no later than 7:00 PM Thursday. Notification shall be in the form of a "door hanger" or flyer that is hand-delivered by the CONTRACTOR to each residence/business.

Special consideration shall be given to schools to accommodate schedules for pedestrians, student drop-off, and busses.

"NO PARKING" signs shall be displayed on streets at least 24 hours prior to operations. Signs shall be legible from inside vehicles and state the day and dates work will be performed. Signs shall be free from defects and unbroken.

In the event of delays that require rescheduling of work, the CONTRACTOR shall re-notify impacted properties in the same manner as described in the paragraphs above.

SECTION 28: MATERIAL TESTING

Compaction testing, asphalt and concrete testing will be provided by the Engineer. Twenty-four (24) hour notice must be given by the CONTRACTOR to the Project Coordinator or Inspector prior to any testing.

BID ITEM CLARIFICATIONS
ENTRANCE GATE-TMWRF
BID # 16/17-018 / PWP# WA-2017-145

BID ITEM 1 ~ MOBILIZATION (LUMP SUM)

A. No specific unit of measurement shall apply to the lump sum item "Mobilization".

B. The bid price for "Mobilization" shall constitute full payment for "Mobilization", complete as specified. The bid price shall constitute full pay for all labor, materials, tools, equipment and incidentals necessary to comply with these Specifications including, but not limited to, coordinating, obtaining and maintaining all bonds, permits, and licenses; moving equipment and materials onto and off the site; furnishing and erecting construction trailers, temporary utilities, and other construction facilities; and all preparatory work as required for the proper performance and completion of the project (including work items not identified in a separate bid item), all in accordance with the Contract Documents.

BID ITEM 2 ~ TEMPORARY EROSION CONTROL (LUMP SUM)

A. No specific unit of measurement shall apply to the lump sum item "Temporary Erosion Control".

B. The bid price for "Temporary Erosion Control" shall constitute full payment for "Temporary Erosion Control", complete as specified. The bid price shall constitute full pay for all labor, materials, tools, equipment and incidentals necessary to comply with these Specifications including, but not limited to, installation, maintenance, repair, and removal of drainage inlet protection, gravel bags, fiber/coir rolls, erosion control fencing, and any other temporary erosion control measures as may be required by Project permits, all in accordance with the Contract Documents.

BID ITEM 3 ~ TEMPORARY TRAFFIC CONTROL (LUMP SUM)

A. No specific unit of measurement shall apply to the lump sum item "Temporary Traffic Control".

B. The bid price for "Temporary Traffic Control" shall constitute full payment for "Temporary Traffic Control", complete as specified. The bid price shall constitute full pay for all labor, materials, tools, equipment and incidentals necessary to comply with these Specifications including, but not limited to, preparation and distribution of plans, notices and reports; setup, removal and maintenance of all barricades, signs (including custom signs), channelizing devices, barrel cones, and flag persons, all in accordance with the Contract Documents.

C. There shall be no additional payment for changes in the traffic control plan required as a result of changes in the Contractor's work method or schedule.

BID ITEM 4 ~ ELECTRICAL / COMMUNICATION / CONTROL SERVICE (LUMP SUM)

A. No specific unit of measurement shall apply to the lump sum item "Electrical / Communication / Control Service".

B. The bid price for "Electrical / Communication / Control Service" shall constitute full payment for "Electrical / Communication / Control Service", complete as specified. The bid price shall constitute full pay for all labor, materials, tools, equipment and incidentals necessary to comply

with these Specifications including, but not limited to, power and control connections from existing treatment facility sources to new guard booth and future Clean Water Way extension (excluding guard booth service equipment); network cabinet; removal and disposal of existing improvements regardless of material; trench excavation (including haul and disposal of unusable and excess excavated material); furnishing and installing all conduit, fittings, conductors, and junction boxes; conduit bedding, trench backfill, compaction, and compaction testing; and site cleanup, all in accordance with the Contract Documents.

BID ITEM 5 ~ GUARD BOOTH AND ENTRANCE GATE FACILITY (LUMP SUM)

A. No specific unit of measurement shall apply to the lump sum item "Guard Booth and Entrance Gate Facility".

B. The bid price for "Guard Booth and Entrance Gate Facility" shall constitute full payment for "Guard Booth and Entrance Gate Facility", complete as specified. The bid price shall constitute full pay for all labor, materials, tools, equipment and incidentals necessary to comply with these Specifications including, but not limited to, prefabricated guard booth; entrance gate and operator; site work; concrete foundation pads; fencing; bollards; signage; electrical transformer and connection to the guard booth; site lighting, cameras, and gate controls and programming; utility trenching, power, and control connections for electrical and control equipment; and site cleanup; all in accordance with the Contract Documents.

BID ITEM 6 ~ VEHICLE PARKING AND TURNAROUND AREA

A. Measurement of payment for "Vehicle Parking and Turnaround Area" shall be per square foot.

B. The bid price for "Vehicle Parking and Turnaround Area" shall constitute full payment for "Vehicle Parking and Turnaround Area", complete as specified. The bid price shall constitute full pay for all labor, materials, tools, equipment and incidentals necessary to comply with these Specifications including, but not limited to, pavement sawcutting; excavation and removal of existing pavement; subgrade preparation, aggregate base material, tack coat, and plantmix asphalt cement; compaction; marking sand striping; and site cleanup, all in accordance with the Contract Documents.

BID ITEM 7 ~ ASPHALT SURFACE RESTORATION

A. Measurement of payment for "Asphalt Surface Restoration" shall be per square foot.

B. The bid price for "Asphalt Surface Restoration" shall constitute full payment for "Asphalt Surface Restoration", complete as specified. The bid price shall constitute full pay for all labor, materials, tools, equipment and incidentals necessary to comply with these Specifications including, but not limited to, pavement sawcutting; excavation and removal of existing pavement; site grading; subgrade preparation, aggregate base material, tack coat, plantmix asphalt cement, compaction; and restoration of all disturbed markings; and site cleanup; all in accordance with the Contract Documents.

BID ITEM 8 ~ CONCRETE SURFACE RESTORATION (LUMP SUM)

A. No specific unit of measurement shall apply to the lump sum item "Concrete Surface Restoration".

B. The bid price for “Concrete Surface Restoration” shall constitute full payment for “Concrete Surface Restoration”, complete as specified. The bid price shall constitute full pay for all labor, materials, tools, equipment and incidentals necessary to comply with these Specifications including, but not limited to, concrete sawcutting; excavation and removal of existing concrete; subgrade preparation, aggregate base material, forms, placement and finish of cement concrete; and site cleanup, all in accordance with the Contract Documents.

BID ITEM 9 ~ LANDSCAPE SURFACE RESTORATION (LUMP SUM)

A. No specific unit of measurement shall apply to the lump sum item “Landscape Surface Restoration”.

B. The bid price for “Landscape Surface Restoration” shall constitute full payment for “Landscape Surface Restoration”, complete as specified. The bid price shall constitute full pay for all labor, materials, tools, equipment and incidentals necessary to comply with these Specifications including, but not limited to, replacement of decomposed granite, gravel, or riprap surfaces; replacement of landscape fabric; temporary irrigation of vegetation; planting of shrubs and trees; repair of irrigation system, replacement of decorative boulders; and site cleanup all in accordance with the Contract Documents.

BID ITEM 10 ~FORCE ACCOUNT (LUMP SUM)

A. No specific unit of measurement shall apply to the lump sum item “Force Account”.

B. A force account has been established for this project and shall be included in each bid. The Force Account will be utilized for extra work authorized by the engineer.

ENTRANCE GATE-TMWRF
Bid #16/17-018 / PWP #WA-2017-145
TECHNICAL SPECIFICATONS

CERTIFICATION

The technical material and data contained in this document were prepared under the supervision and direction of the undersigned, whose seal, as a professional engineer licensed to practice as such, is affixed below.

Prepared by Matt Schultz, P.E.
(Divisions 0, 1, 2, 3, 13)

Keller Hackbusch, P.E.
(Division 16)

SECTION 01672

ASSET IDENTIFICATION AND LABELING

PART 1 – GENERAL

1.01 SUMMARY

A. Extent of asset identification, labeling, and tagging work is indicated by project drawings.

B. Work described in this Section includes furnishing all labor, materials, equipment, tools and incidentals required for identification of materials, assets, and installations. All equipment shall be installed, adjusted, tested and placed in operation in accordance with these Specifications, the manufacturer's recommendations, and as shown on the Drawings.

1.02 QUALITY ASSURANCE

A. Manufacturers: Firms shall have sufficient experience in the manufacture of asset identification products of types required, for quality and successful manufacture of asset identification products for this Project.

1.03 SUBMITTALS

A. Submittals shall be submitted to the Engineer for review and acceptance prior to construction in accordance with Special Provisions Section 21- Submittals.

B. Product Data: Submit manufacturer's data on asset identification materials and products.

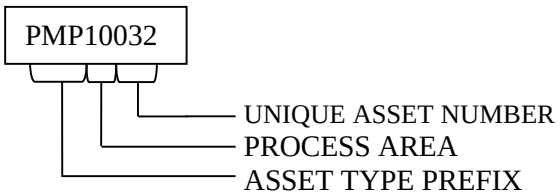
C. Samples: Submit samples of each color, lettering style and other graphic representation required for each identification material or system.

1.04 ASSET NAMING CONVENTION AND ATTRIBUTE LIST

A. Asset identification numbers appearing on asset tags and labels or in O&M manuals shall conform to the TMWRF asset naming convention as shown in the Project Drawings.

1. Asset identification tag numbers shall be a three-digit letter prefix followed by a five-digit number with no spaces. 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.

2. An example of acceptable tag format is shown below. A bubble format is also acceptable and shown below.



Asset ID
Bubble format

3. At the completion of the construction phase of the project, a completed Asset Attribute List shall be submitted by the Contractor. The Asset Attribute List shall include an entry for each asset identified within the Project construction documents.

    a. Contractor to obtain approved Asset Attribute List template in excel format from TMWRF. It is important that the format of the spreadsheet remain preserved and capable of direct upload to the Facility asset management database.

1.05 ASSET FIELD TAG REQUIREMENTS

A. Contractor to furnish and install Asset ID tags conforming to the requirements of this section for each asset identified in the contract documents.

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 instruments 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.

PART 2 – PRODUCTS

2.01 ENGRAVED PLASTIC LAMINATE SIGNS

A. Provide engraving stock melamine plastic laminate lamicoid-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.

B. 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.

C. Thickness: 1/8-inch except as otherwise indicated.

D. Fasteners: Self-tapping screws of brass, cadmium-plated steel, or stainless steel, except contact type permanent adhesive where screws cannot or should not penetrate substrate. Stainless steel bands shall be used to attach tags to equipment if no place for proper attachment is feasible (e.g. valves).

E. 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.

2.02 ROUND BRASS SUSPENDED TAGS

A. Round brass tags shall be minimum 19-gauge brass, 1-1/2" diameter, and include a 3/16" diameter top hole for fastener.

B. Lettering shall be stamped, minimum 1/4" in height, and black in color.

C. Tags shall accurately display the Asset ID in the format described in the TMWRF Design Guideline Manual and as coordinated with TMWRF.

D. Fastener cable shall be stainless steel braided cable.

2.03 LETTERING, GRAPHICS, AND PAINTING

A. Coordinate names, abbreviations, and other designations used in asset identification work with corresponding designations shown, specified, or scheduled.

B. Provide numbers, lettering, and wording as indicated or, if not otherwise indicated as recommended by manufacturer or as required for proper identification and operation/maintenance of instruments and equipment.

C. Contractor shall color code pipes according to the designated use of each pipe done in accordance with the TMWRF Piping Color Scheme. Contractor to obtain TMWRF Piping Color Scheme from Engineer or TMWRF.

1. Select paint system applicable for surface material and location (exterior or interior).

2. 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.

2.04 WARNING LABELS AND SIGNS

A. Comply with NFPA 70 and 29 CFR 1910.145.

B. Self-Adhesive Warning Labels: Factory-printed, multicolor, pressure-sensitive adhesive labels, configured for display on front cover, door, or other access to equipment unless otherwise indicated.

C. Baked-Enamel Warning Signs:

1. Preprinted aluminum signs, punched or drilled for fasteners, with colors, legend, and size required for application.

2. 1/4-inch grommets in corners for mounting.

3. Nominal size, 7 by 10 inches.

D. Warning label and sign shall include, but are not limited to, the following legends:

1. Multiple Power Source Warning: "DANGER - ELECTRICAL SHOCK HAZARD - EQUIPMENT HAS MULTIPLE POWER SOURCES."

E. Fasteners for Labels and Signs: Self-tapping, stainless-steel screws or stainless-steel machine screws with nuts and flat and lock washers.

PART 3 – EXECUTION

3.01 APPLICATION AND INSTALLATION

A. Install asset identification products as indicated, in accordance with manufacturer's written instructions.

B. Substrate for adhesive plastic laminate tags shall be prepared in accordance with the manufacturer's recommendations prior to application of tags.

C. Brass tags shall be affixed to assets with stainless steel braided cable secured with a crimp style fastener.

D. Coordination: Where identification is to be applied to surfaces which require finish, install identification after completion of painting.

E. Regulations: Comply with governing regulations and requests of governing authorities for identification of assets.

F. Asset/Systems Identification: Install engraved plastic laminate signs on each major unit of equipment in building.

1. 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.

G. Install signs at locations indicated or, where not otherwise indicated, at 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.

H. Equipment and devices shall be identified by asset name and tag numbers, where indicated on the Drawings, and shall be utilized on all nameplates.

END OF SECTION

SECTION 01724

SURVEYING

PART 1 – GENERAL

1.01 SUMMARY

A. Work includes all professional survey services necessary for complete layout and construction staking of the proposed Work.

1.02 SURVEY CONTROL

A. Vertical and horizontal datum are based on the coordinates and benchmarks shown on the Drawings or as provided by the Owner prior to the start of construction. The Contractor shall locate and protect Owner furnished control points prior to starting the Work and preserve control points during construction. The Contractor shall re-establish all control points disturbed by its operations at no cost to Owner.

B. The Contractor shall be responsible for the preservation of all existing survey monuments or permanent benchmarks. Any monuments or benchmarks disturbed or destroyed by Contractor shall be referenced and replaced by a licensed land surveyor. A corner record or record of survey, as appropriate, shall be filed by the licensed land surveyor as required by the NRS with the appropriate local government agencies.

1.03 SURVEYS PROVIDED BY THE ENGINEER

A. The Engineer will provide construction staking for those services listed below:

1. Electrical trench centerline, pullboxes, and offsets.
2. Mark grading and asphalt paving limits.
3. Concrete foundation pads.

B. All other survey work needs for construction shall be the sole responsibility of the Contractor.

C. The Engineer will stake the above elements only once. If the stakes are disturbed during Construction, the charges for re-staking will be deducted by the Owner from amounts otherwise due or to become due the Contractor at the current Engineer time and materials rates.

D. The Contractor shall identify on the project schedule the above Work items from coordinating with the Engineer.

1.04 REQUIRED CONTRACTOR SUPPORT

A. The Contractor shall provide sufficient space and safe facilities to enable the Engineer to set control points and perform other Work required by this specification.

B. Requests for surveying by the Contractor shall be made at least 2 days prior to the need. The amount of requested surveying shall amount to a minimum of 1 day of field work per request, unless otherwise approved by the Engineer. Delays due to Contractor's failure to give timely notice to the Engineer for surveying services are at the sole risk and expense of the Contractor.

1.05 UTILITY DATA

A. Utility information shown on the Drawings is the best available data. The Contractor is responsible for requesting and receiving utility location services from Underground Service Alert prior to excavation.

B. If the Project requires utility location services beyond those provided by Underground Service Alert, the Contractor is responsible for obtaining the services of a locating company for location of utilities throughout the project.

C. Many utilities may in fact be abandoned utilities. The Contractor must confirm with the Owner's maintenance staff on the status of utilities.

D. Location of all utilities shall be pothole located at the point of connection. Vertical control data shall be recorded for concurrence with connection to the sewer main.

PART 2 – MATERIALS (NOT USED)

PART 3 – EXECUTION

3.01 EXAMINATION

A. Identification: Verify location of benchmarks and control points provided by the Engineer.

B. Verify layout information shown on the Drawings, in relation to the property survey and existing benchmarks before proceeding to layout the Work. Locate and protect existing benchmarks and control points. Preserve permanent reference points during construction.

1. Do not change or relocate benchmarks or control points without prior written approval from the Engineer. Promptly report lost or destroyed reference points, or requirements to relocate reference points because of necessary changes in grades or locations.

2. Promptly notify Engineer if project control points are destroyed.

3.02 PERFORMANCE

A. Work from lines and levels established by the field survey. Calculate and measure required dimensions within indicated or recognized tolerances. Do not scale Drawings to determine dimensions.

1. Advise entities engaged in construction activities of marked lines and levels provided for their use.

2. As construction proceeds, check every major element for line, level, and plumb.

END OF SECTION

SECTION 02318

TRENCHING

PART 1 – GENERAL

1.01 SUMMARY

A. This section includes the following in support of utilities and associated structures construction:

1. Preparing subgrades.

2. Excavation and backfill.

B. Contractor shall provide all construction and subsequent removal of all shoring and cribs that may be necessary for protection of existing structures, excavation, removal, construction of structures, placement, and compaction of fill material.

C. Contractor shall provide disposal site for all native material not used on site.

1.02 SPECIFIC STANDARDS

A. The specific reference standard for this work will be the current Standard Specifications for Public Works Construction (SSPWC).

B. Additional standards may also apply.

1.03 DEFINITIONS

A. Trench – An excavation in which the depth is greater than the width of the bottom of the trench.

B. Foundation – Material on which pipe bedding or the structure is to be directly placed.

C. Bedding – Granular or slurry material that pipe or structure rests.

D. Initial Backfill:

1. No groundwater encountered. Material from the bedding to 12 inches above the top of the pipe.

2. Groundwater encountered. Material from the bedding to 12 inches above level of the groundwater prior to dewatering.

3. Shallow trenches for electrical and/or communications conduit and conductors encased in slurry may not utilize Initial Backfill.

E. Final Backfill – Material from top of initial backfill to top of trench.

F. Unsuitable Materials: Organic matter such as peat, mulch, organic silt or sod; expansive clays; material containing excessive moisture; poorly graded coarse material; material with particle

sizes greater than 4 inches; material that will not achieve density and/or bearing requirements; construction debris; and frozen material.

G. Fine Grained Soils. More than 40 percent by weight passing the number 200 sieve and a plastic index lower than 15.

H. Clay Soils. More than 40 percent by weight passing the number 200 sieve and a plastic index greater than 15.

I. Granular Soils. Those not defined as Fine Grained or Clay Soils.

J. Rippable Rock. Fractured rock that can be excavated and trenched using conventional excavation techniques.

K. Bedrock. Material that cannot be excavated economically with conventional excavation techniques including a large excavator with the aid of a hoe ram or a single tooth ripper on a large bulldozer.

L. Borrow: Satisfactory soil imported from off site for use as fill or backfill.

M. Conventional Excavation Techniques. Common excavation equipment including, but not limited to, hoe excavators, scrapers, loaders, bulldozers, bulldozers with ripper(s), and how rams, etc.

N. Relative Compaction. Relative compaction is defined as the ratio, in percent, of the as-compacted dry density to the laboratory maximum dry density. The laboratory maximum dry density is defined in accordance with ASTM D1557, latest edition.

O. Well Graded. Well graded as used in this section defines a mixture of soil particle sizes that have no specific concentration or lack thereof of one or more sizes. Well graded is used to help define a material that, when properly compacted, produces a strong and relatively incompressible soil.

1.04 QUALITY CONTROL ASSURANCE

A. Soils and Backfill: Moisture density standard ASTM D1557 or AASHTO T-180 method unless otherwise specifically approved.

B. In-place Density Determination: Sandcone Method ASTM D1556 or Nuclear Method ASTM D2922.

1. Foundation and Embankment Under Pipelines: For each 1 foot of vertical embankment or backfill height, conduct one test for every 500 feet along the pipeline or as determined by Owner or Engineer.

C. Classification of Soils: ASTM D2487.

D. On-site quality control monitoring of trench backfill materials and construction shall be by certified independent laboratory approved, secured, and paid for by the Owner.

E. The Engineer or geotechnical consultant will identify areas requiring overexcavation and backfill and review excavated material to determine its suitability as backfill material.

F. Testing Tolerances.

1. Percent Compaction: Not less than as specified on Plans or in these Specifications.

2. In-Place Moisture Content: As required to achieve minimum specified compaction.

3. Soft or Yielding Surfaces: Regardless of percent compaction obtained by test, areas that are soft and yield (pumping) under the load of construction equipment are to be removed and replaced at no additional cost.

1.05 PROJECT CONDITIONS

A. Verification of Site Conditions: Both prior to bidding and before commencing site work, the Contractor will be expected to visit and inspect all areas of the project site. Examine and note all conditions pertaining to the work involved so that earthwork may be executed in an orderly and careful manner with due consideration for surrounding areas, structures, vegetation, soil conditions, and all other site conditions which will directly impact the work.

1.06 SITE SAFETY

A. All trenching, excavations, shoring, etc., shall be performed in compliance with Chapter 618 NAC "Occupational Safety and Health", as well as other applicable local, State and/or Federal regulations. All work shall also comply with the requirements contained in these Specifications.

B. Protection of Persons and Property: Barricade and cover all open excavations and post with warning lights, signs, barrier tape or a combination of such measures to warn workers and park patrons of unsafe conditions and protect them from harm. Open trenches shall, in all cases, be marked by a sufficient number of flashing lights and barriers during hours of darkness. Ensure that all open trenches are properly barricaded, covered, and flagged at the end of each working day before vacating the jobsite.

C. Protect structures, utilities, sidewalks, pavements and other facilities from damage caused by settlement, lateral movements, undermining, washout, and other hazards created by earthwork operations.

1.07 EROSION CONTROL

A. Comply with the specific requirements of City, County, Owner, and NDEP codes and ordinances pertaining to construction practices and temporary erosion control and sedimentation control measures and methods as they apply to work performed under this contract.

B. Best Management Practices (BMPs) shall be in accordance with the current NDEP guidelines.

1.08 LAYOUT OF WORK AND SURVEYING

A. Construction staking shall be per Section 01724 – Surveying.

B. delivery, storage, and handling

C. Stockpiling: Stockpile materials on-site within grading area, staging area, designated fill sites, and at locations approved by the Owner.

D. Direct surface water away from stockpile site so as to prevent erosion or deterioration of materials.

E. Maintain toe of material at least 6 feet from edges of trenches and excavations. Pile so surface water is prevented from flowing into excavations. Provide free access to fire hydrants and access roadways.

1.09 SUBMITTALS

A. Submittals shall conform with Special Provisions Section 21- Submittals.

B. Submit one copy of load delivery ticket for each load of imported material paid by tonnage delivered to the jobsite. Ticket shall identify tonnage.

C. Perform and submit sample analysis for each type of import material to demonstrate proper specification compliance. No import material will be accepted or approved by the Owner without above submittals prior to delivery to jobsite.

D. Submit one copy of each/all soil materials and compaction density testing reports to the Owner immediately following completion of each test.

E. Certificates: NDOT pit certification for each pit.

F. Gradation curve test reports for each import material at least 15 working days prior to use of material.

G. Gradation and moisture density compaction curve test reports for each import material at least 15 working days prior to use of material.

H. Gradation and moisture density compaction curve test reports for screened native material being used in lieu of Class E Backfill.

PART 2 – PRODUCTS

2.01 SOIL MATERIALS

A. Unsuitable materials not to be incorporated in the work:

1. Organic matter such as peat, mulch, organic silt or sod.

2. Expansive clays.

3. Material containing excessive moisture.

4. Poorly graded coarse material.

5. Material with particle sizes greater than 4 inches.

6. Material that will not achieve density and/or bearing requirements.

7. Construction debris.

8. Frozen material.

B. Native Material

1. Select native soils excavated from the site may be utilized as backfill material for nonstructural embankments, and structural fill, with the approval of the Owner and meets the requirements under Import Materials. Screened native soils are approved for trench backfill above the bedding zone and below the base course in travel ways.

   a. Contractor to provide gradation and moisture density compaction curve test reports for screened native material being used in lieu of Class E Backfill.

2. All materials deemed unsatisfactory for embankments or backfills will be disposed of off site by the Contractor. Native material excavating and wasting shall be considered incidental to the bid price.

3. The Owner retains the right to reject and have removed, at no additional cost, any/all excavated soil material placed as backfill material without the prior approval of the Owner for use of said soil in any particular application.

4. All materials considered to be excavation debris shall be loaded and hauled from the site to a Contractor provided disposal site at no additional cost. Such debris shall include all roots, buried logs, and all other nonsoil type debris exposed during earthwork operations.

2.02 IMPORT MATERIALS

A. SSPWC General Classifications

1. Class A Trench Backfill (3/8” minus aggregate) shall meet the requirements of SSPWC Section 200.03.02.

2. Class B Trench Backfill (1/2” minus aggregate) shall meet the requirements of SSPWC Section 200.03.03.

3. Class C Trench Backfill (1” minus aggregate) shall meet the requirements of SSPWC Section 200.03.04.

4. Class D Trench Backfill (2” minus aggregate) shall meet the requirements of SSPWC Section 200.03.05.

5. Class E Trench Backfill (4” minus aggregate) shall meet the requirements of SSPWC Section 200.03.06.

B. Trench Final backfill materials

1. Paved Areas shall utilitze Class A Trench Backfill.

2. Unpaved Areas shall utilize Class E Trench Backfill.

C. Foundation material to replace unsuitable material excavated from the bottom of trenches shall meet the requirements of SSPWC 200.01.07 (Select Natural Base).

D. Loose Riprap shall meet the requirements of SSPWC Section 200.07.04 (Class 150 and Class 300).

E. Cement Slurry Pipe Encasement: Trench Slurry Backfill shall meet the requirements of SSPWC Section 200.02.06.01, Type II cement, minimum 186 lbs. per cubic yard, fine concrete aggregate, per SSPWC 200.05.04, 100 psi. min. 28-day compressive strength. Sufficient water to produce a fluid workable mix that will flow and can be pumped without segregation of the aggregate during placement. Machine mixed at time of placement.

F. Dust Palliative.

1. Non-Traffic Area. Synthetic Polymer, Lignosulfanate. Material type, application rates as recommended by the manufacturer to provide long-term dust suppression upon completion of final grading.

2. Traffic Area. Synthetic Polymer, Lignosulfanate. Material type, application rates as recommended by the manufacturer to provide long-term dust suppression upon completion of final grading.

3. Areas within 100 feet of waterway or body of water. Straw mulch and tackifier, or Hydromulch and tackifier. Material type, application rates as recommended by the manufacturer to provide long-term dust suppression upon completion of final grading.

G. Geotextile Fabric for Trench Bedding: Synthetic Industries, Geotex 451 or approved equivalent.

H. Geotextile Fabric at Drainage Channel Crossing: Mirafi S600 nonwoven geotextile fabric or approved equivalent.

2.03 WASTE MATERIALS

A. Foreign materials, buried rubble, abandoned pipes, and native soil materials that cannot be processed to uniform moisture and texture necessary to meet material specifications and to achieve specified densities shall be disposed of by the Contractor at an appropriate waste site. Waste sites shall be provided by the Contractor.

2.04 UTILITY WARNING TAPE

A. Shall be APWA color-coded detectable underground marking tape. Tape shall be 3-inch-wide plastic-encased aluminum foil tape capable of being located by a metal detector. Message and coding shall be per APWA Standards and shall be as follows:

MESSAGE	COLOR CODING
CAUTION: ELECTRIC LINE BURIED BELOW	Red
CAUTION: WATER LINE BURIED BELOW	Blue
CAUTION: SEWER LINE BURIED BELOW	Green
CAUTION: RECLAIMED WATER LINE BURIED BELOW	Purple
CAUTION: TELEPHONE LINE BURIED BELOW	Orange
CAUTION: CATV LINE BURIED BELOW	Orange

B. Provide new continuous warning tape for each type of utility installed. Also provide new replacement warning tape for utilities encountered and replace any/all damaged sections of existing warning tape for those utilities. Should no warning tape exist on encountered utilities, provide a section of new tape at the crossing.

PART 3 – EXECUTION

3.01 EXAMINATION

A. Verify that all work preliminary to this section has been performed in accordance with the plans and these specifications prior to beginning trench excavation and backfill operations.

B. Sawcut, remove and dispose of existing pavements per Section 02742 – Asphaltic Concrete Paving.

3.02 WORK SEQUENCE

A. Notify Engineer of any discrepancies between contractual requirements and site conditions prior to start of Work.

B. Plan and coordinate all construction to reduce sediment and subsequent pollution. The Contractor shall employ all means as may be required to ensure that silts and construction debris do not migrate from the construction site limits. Failure to halt the migration of construction debris, mud, silts, and related pollutants to outside of the construction limits, shall be cause for suspension of work until pollution control devices are remade, repaired, lengthened or strengthened as required to properly manage the site discharge.

C. Maintain backfill subgrade zones or lifts open until approval of testing is secured from Engineer. Any work covered up prior to approval shall be excavated and reconstructed at Contractor's expense.

3.03 EROSION CONTROL

A. Maintain the erosion control measures and facilities in proper condition such that they will individually and collectively perform the functions for which they were designed. In order to insure the effectiveness and proper maintenance of the measures and facilities, the Contractor shall make periodic inspections at sufficiently frequent intervals to detect any impairment of the structural stability, adequate capacity, or requisites of the herein approved measures and facilities that might impair their effectiveness. The Owner will inspect all erosion control measures on each site inspection visit to verify that all facilities are being properly maintained and are functioning as intended. The Contractor shall take immediate steps to correct any deficiencies found to exist.

3.04 SPOIL AREA

A. Dispose of any surplus excavated material outside of the designated spoils area at no additional cost to the Owner. Disposal of surplus materials in the selected area shall meet all local codes and ordinances and comply with all permits. No spoils shall be left overnight in the project area. Clean up is required daily.

3.05 STOCKPILING NATIVE MATERIALS FOR REUSE

A. Material suitable for reuse on site shall be deposited in approved, protected, maintained piles separate from other materials and readily available. Upon completion, all material storage areas shall be restored to substantially their original condition.

3.06 TRENCH IN FILL AREAS

A. Place fill and grade all areas to within one (1) foot of finish grade prior to trenching and placement of pipeline.

3.07 EXCAVATION

A. Perform all excavations of every description and of whatever substances encountered to the depths indicated on the Plans, including excavation required by the Engineer of compacted fill for the purpose of performing tests. Use open cut excavation methods unless otherwise shown on the Plans or approved by the Engineer.

B. Maintain trench walls as vertical as possible except as required by safety standards and for that required for sheeting and shoring.

C. Unauthorized Over-excavation. Fill and compact excavation beyond the specified trench dimensions, at the contractor's expense, with adjacent trench bedding and or backfill materials.

D. Unsuitable Material. Over-excavate unsuitable material to a depth determined by the Engineer to provide required uniform and stable support. In no case shall the over excavation be less than 18 inches. Backfill the over excavation with foundation material and compact.

E. Grading and Stockpiling.

1. Grade in the vicinity of the trench to prevent surface water from flowing into the trench. Remove any water accumulated in the trench by pumping or by other approved methods. Stockpile excavated material in an orderly manner a sufficient distance back from the edges of the trench to avoid overloading and to prevent slides or cave-ins.

2. Excavate topsoil and stockpile separately. Replace topsoil upon completion of backfill to the elevation and grade indicated on the Plans. Failure to stockpile topsoil separately will result in the addition of soil amendments as required for revegetation at no additional expense to the Owner.

F. Shoring and Bracing shall be per OSHA requirements.

G. Open Trench

1. Maximum Length: The maximum length of the open trench in the aggregate at any one location is not to exceed 200 feet. The trench is considered open until fill is completed to adjacent finish grade elevation.

2. Trenches within local roadways: Complete backfill of trench in street right of way at the end of each workday. Apply temporary asphalt cold patch or steel plates at the end of each work day and maintain cold patch in accordance with 3.07.B.2 until final paving is complete. No trench shall be left open in any street right of way overnight.

3. Temporary Provisions: Furnish and install trench bracing and steel plating required to provide safe and convenient vehicular and pedestrian passage across trenches where required. Maintain access to emergency facilities at all times.

3.08 TRENCH BACKFILL MATERIALS

A. Paved Areas – compact Class A Trench Backfill to a minimum of 95 percent relative compaction. Final trench backfill in paved areas shall be placed from top of slurry encasement to bottom of aggregate base layer for pavement.

B. Unpaved Areas – compact Class E Trench Backfill to a miniumum of 90 percent relative compaction. Final trench backfill in unpaved areas shall be placed from top of slurry encasement to finished grade at the top of the trench.

3.09 BURIED WARNING AND IDENTIFICATION TAPE

A. Place tape to depth indicated on the plan, centered over pipe.

3.10 BACKFILL FOR VALVES, MINOR STRUCTURES AND OTHER APPURTENANCES

A. Backfill appurtenances and structures as shown on the Plans. Where not clearly indicated, the backfill, including bedding, lift thickness and compaction, shall be identical to the adjacent trench detail.

3.11 SURFACE RESTORATION

A. Grading: Perform all grading adjacent to backfilled trenches and structures as necessary to leave the area in a neat and satisfactory condition. Grade area to reestablish drainage flow lines and channels as existed prior to trench excavation and backfill.

B. Surface Restoration: Restore all streets, alleys, driveways, sidewalks, curbs and other surfaces which were broken or damaged by the installation of the new work to a condition as good as or better than was originally encountered in accordance with these specifications and the SSPWC, and as acceptable to the Owner.

1. Landscaping: Replace landscape rock, mulch, sod, shrubs, trees, turf grass, irrigation and sprinkler systems damaged or otherwise removed during construction to a condition as good as or better than originally encountered in accordance with these specifications, SSPWC, and as acceptable to the property owner.

2. Temporary Pavement: Place cold mix, cold laid bituminous paving mixture in accordance with ASTM D4215 immediately following backfilling and compaction of trenches through

existing pavements. Maintain pavement in a safe and smooth condition until final pavement can be placed.

3. Pavement Replacement: Replace permanent asphalt concrete pavement per Section 02742 – Asphaltic Concrete Paving.

4. Revegetation: Application of mulch may enhance vegetative establishment. All unstable slopes created through the installation of lateral systems outside of paved areas shall stabilized.

5. Miscellaneous: Areas not receiving improved surfaces or revegetation shall be free from surface rocks and debris and shall be left in a smooth, travelable condition for pedestrians, bicyclists, and motor vehicles.

6. Clean up: Remove all excess soil, concrete, etc. from the site. Leave job site in a neat and clean condition, as good as or better than that originally encountered.

3.12 DEWATERING

A. Groundwater table is estimated to be below the existing grade surface and it is not anticipated that groundwater will be encountered; however perched groundwater and water from local drainage facilities shall be dewatered and dealt with by the Contractor at no additional cost to the Owner.

B. Contractor shall dewater in such a manner that will not damage public or private property or create a nuisance or health menace. The Contractor shall furnish, install, and operate pumps, pipes, appliances, and equipment of sufficient capacity to keep the site and/or trenches free from water. The Contractor shall provide all means or facilities necessary to conduct water to the pumps. Water, if odorless and stable, may be discharged into an existing storm drain, channel, or street gutter in a manner approved by the Engineer. When required by the Engineer, a means shall be provided for desilting the water before discharging it.

C. Dewatering Disposal. If required all dewatering discharges must conform to the requirements of the NDEP Temporary Discharge Permit. Contractor shall obtain permit at no additional cost to the Owner.

1. Groundwater or pond water removed from excavations shall be kept on the property, unless approved otherwise.

2. Use gravel pack, filter fabric or similar technology to minimize sediment loading of receiving waters.

3. Upon completion of dewatering operations, leave area in condition as good as or better than existed prior to dewatering operations.

D. Provide standby equipment on-site, installed and available for immediate operation, to maintain dewatering on a continuous basis if any part of system becomes inadequate or fails. If dewatering requirements are not satisfied due to inadequacy or failure of dewatering system, restore damaged structures and foundation soils at no additional expense to the Owner.

E. Remove dewatering system from site upon completion of dewatering.

F. Promptly repair damages to adjacent facilities caused by dewatering operations.

3.13 FIELD QUALITY CONTROL

A. Testing Agency: Owner shall engage a qualified independent testing and inspecting agency to perform field tests and inspections and to prepare test reports.

B. Allow testing agency to test and inspect subgrades and each fill or backfill layer. Proceed with subsequent earthwork only after test results for previously completed work comply with requirements.

C. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil to depth required; recompact and retest until specified compaction is obtained.

3.14 PROTECTION AND DISPOSAL

A. Stabilize all slopes, channels, ditches or any disturbed area as soon as possible after the final grade or final earthmoving has been completed. Upon completion of the project, stabilize all areas that were disturbed by the project to prevent accelerated erosion. Maintain any erosion and sedimentation control facility required or necessary to protect areas from erosion during the stabilization period. Provide Visqueen sheeting and/or erosion control matting, properly anchored, to control erosion of cut or fill slopes and related construction.

B. Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.

C. Repair and reestablish grades to the specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction.

D. Where settling occurs before project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.

E. Disposal of Excess Suitable Material: Shall be hauled and deposited in areas as shown on the Plans.

F. Disposal of Excess Unsuitable Material and Debris: Remove all unsuitable material, debris, trash and waste, and dispose of it at a Contractor provided disposal site in strict accordance with all local codes, ordinances and regulations.

END OF SECTION

SECTION 02446

MOTORIZED LIFT GATE

PART 1 – GENERAL

1.01 SUMMARY

A. Section Includes:

1. Vertically pivoting low voltage electrically operated vehicle access gate.

a. Gate shall incorporate fully welded gate frame, gate operator of a vertical lift type, for opening and closing the gate, security fence panels of chain link fabric matching the contiguous fence line, receiving yoke, and card lock gate controls.

2. Mechanical external secondary entrapment protection devices.

1.02 RELATED SECTIONS

A. Section 02820 – Fences and Gates.

B. Section 03300 - Cast-In-Place Concrete.

1.03 PERFORMANCE REQUIREMENTS

A. Gate Dimensions:

1. Width - 22 feet.

2. Height - Operator Pad surface to top of gate 6 feet.

B. Structural Performance: Engineer, fabricate, and install gate systems to withstand gate dead loads and wind live loads of 100 mph.

C. Card Entry. The Owner will provide the card lock reader after the project is complete. The fence installer shall provide a pedestal with gooseneck and dry contact for installation of the card reader by the Owner. The fence installer shall also provide two bollards adjacent to the card reader pedestal to protect the unit from traffic damage.

1.04 SUBMITTALS

A. Submittals shall be submitted to the Engineer for review and acceptance prior to construction in accordance with Special Provisions Section 21- Submittals.

B. Product Data: Submit sufficient manufacturer's data to indicate compliance with these specifications. Mark data to indicate:

1. Details of material and construction.

2. Recommended installation requirements to properly accommodate the proposed Gate and accessories.

C. Shop Drawings: Submit shop drawings for fabrication and installation of metal work. Include plans, elevations and detail sections. Indicate materials, methods, finishes and types of joinery, fasteners, anchorages and accessory items. Provide setting diagrams and templates for anchorages, sleeves, and bolts installed by others.

1.05 QUALITY ASSURANCE

A. Standards: Comply with requirements of building authorities having jurisdiction in Project location.

1. Operation Control Systems:

a. UL 325 - Standard for Safety for Door, Drapery, Gate, Louver, and Window Operators and Systems.

b. ASTM F2200 - Standard Specification for Automated Vehicular Gate Construction.

2. Electrical Components, Devices, and Accessories: NFPA 70, Article 100.

B. Chain Link Fencing Standards: See Section 02820 – Fences and Gates.

C. Manufacturer Qualifications: Minimum three (3) years documented experience producing systems specified in this section.

D. Installer Qualifications: An experienced installer who has completed fences and gates similar in material, design, and extent to those indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

1.06 DELIVERY, STORAGE AND HANDLING

A. Store components to avoid damage from moisture, abrasion, and other construction activities. Carefully store materials off the ground to provide proper protection against oxidation caused by ground contact.

1.07 PROJECT CONDITIONS

A. Field Measurements: Take measurements and generate dimensions where Gate and Operator are to be located. Indicate specific location of gate with regard to existing roadways, proposed roadways, curb locations grade changes and elevations. Indicate specific location of Gate Operator and its respective concrete foundation, include surrounding landscaping and buildings.

1.08 COORDINATION AND SEQUENCING

A. Coordinate gate installation with line fencing and paving. Gate and Operator can be installed independent of paving providing the Operator concrete foundation is in place, including electrical control conduits. Upon completion of installation place the Gate in an open position and maintain vertically clear of traffic and surrounding fence line installation.

B. Operators are designed for 120 volt 15 amp primary service and 24 Volt DC battery back-up (batteries are contractor supplied and installed). Installer is to coordinate electrical service with electrical design and electrical trades. Service connection is supplied via underground conduit and preferably with a GFCI circuit breaker. Connection is made into a 4" x 4" handy box inside the Operator. Within the box wire GFCI Duplex Receptacle "HOT" off of the main breaker. Receptacle may be used for loads under 15 Amps such as hand tools and the like.

1.09 WARRANTY

A. Standard Warranty: Provide manufacturer's standard three (3) year warranty against defective materials and workmanship after Date of Substantial Completion.

PART 2 – PRODUCTS

2.01 ACCEPTABLE MANUFACTURER

A. AutoGate, Inc. Berlin Heights, Ohio VPL Vertical Pivot Lift Gate, Style 300 - Chainlink mesh and diagonal bracing.

B. Or Equal.

2.02 GATE CONSTRUCTION

A. Materials:

1. Steel Assembly Framing:

   a. High strength steel pipe triple coated in accordance with ASTM F1043 Group IC; SS40 as manufactured by Allied Tube & Conduit.

      1) External coatings per ASTM F1043 Type B; internal coatings per ASTM F1043 Type D.

      2) Post welding treatments: All welded joints to be coated ZRC or equivalent zinc rich coating.

   b. Steel Tubes: ASTM A500 Cold-Formed Welded Pipe and Structural Tubing Hot-Dipped, Zinc-Coated.

      1) External coating weldable Epoxy powder coat primer (Epoxy Z Kote by Atlas Tubing).

   c. Steel Shapes plates and bars: ASTM A36.

2. Threaded Fasteners:

   a. All exterior screws, bolts, nut and washers shall be 300 Series non-magnetic stainless steel.

b. Provide lock washers or other locking devices such as deformed thread lock or nylon locking nuts at all bolted connections.

3. Infill panels: Refer to Section 02820 – Fences and Gates.

B. Fabrication:

1. Fabricate perimeter frames of gates from steel tubing. Assemble gate frames by welding at corners. Infill gate frames with panels to match adjacent fence panels.

2. Configuration: Size and space members in compliance with applicable codes. All gate framing members shall be un-spliced single pipe or tube length.

3. Bracing:

a. Provide diagonal welded pipe gate trusses to prevent sag.

b. Wind Bracing: Provide masted or other equivalent wind bracing suitable for operation in up to 100 mph wind conditions.

4. Fully assemble gate leaves in the manufacturer‘s shop with no joints splices or bolted sections. Open tube ends or sections are not acceptable.

5. Welding: Make exposed joints butt tight, flush, and hairline. Continuously seal joined members by continuous welds.

C. Fabricated frame and infill fabrics: Epoxy coating or plain to match fence line color.

D. Barbed wire assemblies: Extend gate post and vertical frame members 12 inches above top of chain-link fabric.

E. Provide components required for receiving yoke anchorage of gate ends. Fabricate anchors and related components of material and finish matching gate frame.

2.03 GATE OPERATORS

A. Provide gate operator system, including gate operator, field supplied manufacturer specified batteries, and external non-contact sensing equipment.

1. Gate Speed: Fully open to fully closed and fully closed to open not less than 12 seconds.

2. Frequency of Use: Continuous duty.

3. Battery Powered Back Up DC Drive System: Operator to run on 24 Volt DC current stand-by battery system with built-in battery maintainer "over-charge" protection.

a. Field supplied: Provide two (2) 12v batteries, complying with gate operator manufacturer’s requirements.

b. Power supply to battery charger: 120 VAC (15 amp) .

4. Gate Operator Enclosure: Fabricate operator enclosure from steel tubing and sheet metal. Continuous seal weld all frames seams with welds ground smooth.

5. Mechanical Gate Operator Drive: 24 VDC 1/3 HP minimum high torque gear motor.

6. Control Circuitry: Solid state coated control board in NEMA 4x weatherproof electrical enclosure. Sealed proximity switches ensure weather and moisture-proof integrity. (Boards tested to –40º F).

    a. Control Wiring: 16 & 18 Ga. single conductor. Copper w/electrolytic copper compression terminals tin-plated for maximum corrosion prevention.

B. Gate Operator System shall conform to UL 325 Class III as determined in accordance with ASTM F2200.

1. Type A Entrapment Sensing Device - Operator shall have inherent motor current sensors as part of the gate operator system. Type A shall be constructed such that it may not be removed or bypassed.

2. Operator shall have provision for connection of Control System and supplied with Secondary Entrapment Sensing Device specified hereinafter.

C. Secondary Entrapment Sensing Device: Provide the following external secondary entrapment protection devices as appropriate for the specific site conditions to protect against all potential entrapment zones.

1. Photo Beams Type B1 - Non-contact sensor (photoelectric sensor or the equivalent); Acceptable Products:

    a. EMX Industries Model#: IRB-325 Transmitter / receiver type

    b. Allen Bradley Model#: 60-2728 Retro-reflective type

    c. Omron / MMTC Model#: E3K-R10K4-NR Retro-reflective type

2. Safety Edges (Contact Edges) Type B2 - Contact sensor (edge device or the equivalent) Acceptable Product:

    a. Miller Edge Model -MU-22, MG-020, ME-123, MC-22, ME-113, ME-120, ME-020

    b. Tape Switch Model IL, 107-RS, 107-LS, 121-BP, 101-B1, 102-A&B, 102-BHP, 101-BMT,101-B

3. Provide adjustable timer (adjustable from 0 – 60 seconds) for gate closure.

4. Provide maximum run timer.

D. Operator Options:

1. Provide surge and spike protection.

2.04 CONTROL SYSTEMS

A. Operation control system: Remote-control stations, safety devices, and weatherproof enclosures; coordinate electrical requirements with building electrical system.

1. Control Station (located adjacent to gate):

a. Card Reader: Gate functions only when authorized card is presented. Card reader shall be compatible with existing TMWRF card reader system as well as with new Entrance Gate unit card reader.

b. Secondary Digital Keypad Entry Unit: Multiple-programmable, code

2.05 ACCESSORIES

A. Provide warning signs on each side of gate.

B. Gate Assembly shall include the following options:

1. Gearmotor Heater: Provide thermostatically controlled electric heat tape to maintain critical components operational.

2. Operator Cabinet Heater: Provide an insulated Operator Cabinet and include a thermostatically controlled electric space heater with integral circulating fan.

3. Ventilation: Provide adjustable humidistat and fan to provide supplemental ventilation of operator enclosure.

2.06 SETTING MATERIAL

A. Concrete shall be in accordance with Section 03300 – Cast-in-Place Concrete.

B. Service and control conduit: Rigid Schedule 40 PVC embedded in concrete. All other conduit and wiring as specified in Division 16.

C. Expansion Bolts: Threaded or wedge type; galvanize ferrous castings, ASTM A47 malleable iron or ASTM A27 cast steel

PART 3 – EXECUTION

3.01 EXAMINATION

A. Installer's Examination: Examine conditions under which construction activities of this section are to be performed and insure all specified criteria is adhered to.

B. Submit written notification to Architect and system manufacturer if such conditions are unacceptable.

C. Beginning installation constitutes installer's acceptance of conditions.

3.02 ELECTRICAL SERVICE & CONTROLS

A. Provide all power and control wiring required for the work in accordance with the applicable provisions of Division 16 and NEC 70.

B. Perform all trenching and backfilling associated with this Section. Conduit shall be direct buried except under areas of vehicular traffic where it shall be reinforced concrete encased.

C. Grounding system: All equipment and branch circuits shall be grounded. Provide driven ground rod at service. Provide separate ground wire in all branch circuits.

3.03 PADS & RECEIVING YOKES

A. Foundations: Construct pads and yoke bases as indicated on the drawings with top of concrete flat and level. Operator and yoke pad shall be at the same elevation.

B. Excavation:

1. Locate concrete foundations for operator base on firm, undisturbed soil.

2. Yoke Excavation: Drill or hand-excavate holes.

C. Vibrate or tamp concrete for consolidation. Finish top of foundations, smooth and even. Cure concrete 72 hours before place operator.

D. Fasteners: Install operators and receiving yoke plates with expansion bolts provided by the Gate system manufacturer.

3.04 OPERATOR INSTALLATION

A. Install units in accordance with the manufacturer's instructions.

1. Operator Expansion Bolt Mounting: Anchor through base plates to concrete substrate.

2. Install all loose shipped operator lower panels and guarding per manufacturer instructions.

B. Secondary Entrapment Sensing Device: Installing contractor shall be responsible for providing external secondary entrapment protection devices as appropriate for the specific site conditions to protect against all potential entrapment zones. Proper operation of these safety devices shall be verified and training as to the operation and maintenance of these devices for the users and owners shall be documented.

3.05 GATE INSTALLATION

A. Connect frame and operator in accordance with gate manufacturer’s instruction.

B. Install gate so that it is plumb and level when fully closed within the following tolerances:

1. Maximum misalignment from true position: 1/4 inch (6.0 mm).

2. Maximum misalignment between adjacent separated members: 1/8 inch (3.0 mm).

3.06 ADJUSTING

A. Adjust and lubricate operating components for smooth, accurate operation free of binding and racking.

3.07 START-UP AND DEMONSTRATION

A. Manufacturer's Service Representative: Provide at least 2 hours of factory authorized manufacturer's representative's time for start-up and initial operation. Make a final check of each gate operation and control scenario (including emergency access), with Owner's personnel present, immediately before date of substantial completion.

B. Instruct Owner's personnel in proper use, operations, and daily maintenance of gate. Review emergency provisions, including procedures to be followed if gate does not close or open.

C. Train Owner's personnel in normal procedures to be followed in checking for sources of damage to wind bracing, operational failures or malfunctions.

D. Full Wind Rating and Derating: Full wind load rating is subject to the wind bracing remaining in excellent condition and not compromised. Periodic inspection is a must in order to maintain full wind load rating. Any dents, bends, nicks and loose bolts will affect the performance of the bracing must be corrected or repaired

E. Determine that control systems and operating devices are functioning properly.

3.08 CLEANING AND PROTECTION

A. Remove dust or other foreign matter from component surfaces; clean finishes in accordance with manufacturer's instructions. Clean units in accordance with the manufacturer's instructions.

B. Protection: After installation, protect installed work until project completion.

1. Ensure that finishes and structure of installed systems are not damaged by subsequent construction activities.

2. If minor damage to finishes occurs, repair damage in accordance with manufacturer's recommendations; provide replacement components if repaired finishes are unacceptable to Architect.

END OF SECTION

SECTION 02742

ASPHALTIC CONCRETE PAVING

PART 1 – GENERAL

1.01 SUMMARY

A. Work includes all labor, materials, equipment, and services necessary for supply and placement of asphalt concrete pavement.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Section 02318 – Trenching

1.03 SUBMITTALS

A. Submittals shall be submitted to the Engineer for review and acceptance prior to construction in accordance with Special Provisions Section 21- Submittals.

B. Submit copies of a report from a testing laboratory verifying that aggregate material and asphalt binder conform to the specified gradations or characteristics.

1.04 STANDARDS

A. Standard Specifications for Public Works Construction, current edition, hereinafter referred to as the "SSPWC".

PART 2 – PRODUCTS

2.01 AGGREGATES FOR BASE COURSES

A. Aggregate for base courses for road construction and for shoulder gravel shall meet the requirements of SSPWC Section 200.01.03 (Crushed Aggregate Base, Type 2, Class B).

2.02 PLANTMIX AGGREGATE

A. Aggregate for asphalt cement shall be Type 3 in accordance with SSPWC Section 200.02.03.

2.03 ASPHALT CEMENT PAVEMENT

A. Asphalt cement for paving shall be PG 64-28NV in accordance with SSPWC Section 201.02.

2.04 BINDER/TACK COAT

A. All saw cut edges and other vertical edges at the limits of paving shall receive a tack coat. Binder or tack coat shall conform to the requirements of Section 316 of the SSPWC.

2.05 HERBICIDE OR WEED KILLER

A. Oxy-monobar chlorate, Occidental; Pramitol 3OWP, CIBA-Geigy; or approved equivalent.

2.06 PAINT FOR TRAFFIC AND PARKING LOT STRIPING AND MARKING

A. Provide markings to replace any removed in the course of the project. Marking shall match existing type and shall conform to SSPWC (Orange Book) standards.

2.07 GEOTEXTILE FABRIC

A. Mirafi 180N or approved equivalent.

PART 3 – EXECUTION

3.01 PAVEMENT REMOVAL

A. Initially cut asphalt concrete pavement with pneumatic pavement cutter or other equipment at the limits of the excavation and remove the pavement. After backfilling the excavation, saw cut asphalt concrete pavement to the full depth of pavement at a point not less than 6 inches outside the limits of the excavation or the previous pavement cut, whichever is greater, and remove the additional pavement.

B. Saw cut concrete pavement, including cross gutters, curbs and gutters, sidewalks, and driveways, to the full depth of pavement at a point 1 foot beyond the edge of the excavation and remove the pavement.

C. The concrete pavement may initially be cut at the limits of the excavation by other methods prior to removal and the saw cut made after backfilling the excavation. If the saw cut falls within 3 feet of a concrete joint or pavement edge, remove the concrete to the joint or edge.

D. Make arrangements for and dispose of the removed pavement.

E. Final pavement saw cuts shall be straight along both sides of trenches, parallel to the pipeline alignment, and provide clean, solid, vertical faces free from loose material. Saw cut and remove damaged or disturbed adjoining pavement. Saw cuts shall be parallel or perpendicular to the pipeline alignment or the roadway centerline, unless otherwise shown on Contract Documents.

3.02 SUBGRADE PREPARATION

A. Place and compact specified aggregate base under all areas to receive asphalt cement to the depths, lines, and grades specified on the Drawings and as required to match existing roadway construction.

B. Prepare subgrade in accordance with Section 302.02 of the SSPWC.

3.03 PROOF ROLLING

A. Proof roll the prepared base material surface to check for unstable areas. Proof rolling shall be accomplished using a water truck or similar equipment with a rear axle load of at least 18,000

pounds with tires inflated to at least 65 psi. Paving work shall begin only after areas have been corrected and are ready to receive paving. The Engineer must be present during proof rolling.

3.04 PLACING AGGREGATE BASE COURSE

A. Place aggregate base course to a minimum thickness as specified for the roadway. Compact to 95% relative compaction. Install in accordance with SSPWC.

3.05 COMPACTION OF AGGREGATE BASE AND LEVELING COURSES

A. Compaction and rolling shall begin at the outer edges of the surfacing and continue toward the center. Apply water uniformly throughout the material to provide moisture for obtaining the specified compaction. Compact each layer to the specified relative compaction before placing the next layer.

3.06 PLACING TACK COAT

A. Apply tack coat on surfaces to receive finish pavement at the rate of 0.08 to 0.13 gallons per square yard per SSPWC. Apply tack coat to metal or concrete surfaces that will be in contact with the asphalt concrete paving.

3.07 PLACING ASPHALT CEMENT

A. Place asphalt within 24 hours of applying primer and tack coat in accordance with Section 320 of the SSPWC.

B. Compact pavement by rolling. Do not displace or extrude pavement from position. Hand compact in areas inaccessible to rolling equipment.

C. Develop rolling with consecutive passes to achieve an even and smooth finish, without roller marks. Finish grade of asphalt patches shall match existing adjacent pavement exactly, without bumps, depressions, or other irregularities.

D. After pavement is in place, seal all joints.

3.08 SURFACE TOLERANCE

A. Finished grades shall not deviate more than 0.01 foot in 12 feet in elevation parallel with the road centerline and 0.02 foot in 12 feet in elevation transverse to the centerline from the grades indicated in the drawings.

B. Finished grade shall not deviate more than 0.02 foot in elevation from the grade indicated in the Contract Drawings. Slopes shall not vary more than 1/4 inch in 10 feet from the slopes shown in the Contract Drawings.

C. After paving has been installed and compacted, spray water over the entire paved area. Correct any areas where water collects and does not drain away.

3.09 TRAFFIC STRIPING AND MARKING

A. Apply markings to match any removed in the course of the project and in accordance with SSPWC (Orange Book).

3.10 INSPECTION AND ACCEPTANCE

A. The Engineer will inspect all hot mix asphalt patching work. Asphalt paving that exhibits incorrect grades, excessive unevenness, depressions, humps, or joint misalignments will be rejected by the Engineer and shall be completely replaced with new pavement at no additional cost to the Owner.

3.11 PROTECTION

A. Immediately after placement, protect pavement from mechanical injury for a minimum of 2 days.

END OF SECTION

SECTION 02820

FENCES AND GATES

PART 1 – GENERAL

1.01 SECTION INCLUDES

A. Furnishing and erecting of chain link fencing and gates.

1.02 REFERENCES

A. ASTM A36/A36M, "Standard Specification for Carbon Structural Steel," 2001.

B. ASTM A123/A123M, "Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products," 2001a.

C. ASTM A153/A153M, "Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware," 2001a.

D. ASTM A269-01, "Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service."

E. ASTM A276-00ae1, "Standard Specification for Stainless Steel Bars and Shapes."

F. ASTM A283/A283M, "Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates," 2000.

G. ASTM A307, "Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength," 2000.

H. ASTM A632-01, "Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing (Small Diameter) for General Service."

I. ASTM A666-00, "Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar."

J. AWS A2.4, "Standard Symbols for Welding, Brazing, and Nondestructive Examination," American Welding Society, 1998.

K. AWS D1.1, "Structural Welding Code – Steel," American Welding Society, 2002.

L. SSPC-Paint 15, "Steel Joist Shop Primer," Society for Protective Coatings, 1999 (ed. 2000).

M. SSPC-Paint 20, "Zinc-Rich Primers (Type I, "Inorganic," and Type II, "Organic")," Society for Protective Coatings, 2002.

N. SSPC-SP 2, "Hand Tool Cleaning," Society for Protective Coatings, 1982 (ed. 2000).

1.03 SUBMITTALS

A. Submittals shall be submitted to the Engineer for review and acceptance prior to construction in accordance with Special Provisions Section 21- Submittals.

B. Shop Drawings: Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include erection drawings, elevations, and details where applicable.

C. Indicate welded connections using standard AWS A2.4 welding symbols. Indicate net weld lengths.

D. Welders' Certificates: Submit certification for welders employed on the project, verifying AWS qualification within the previous 12 months.

E. Complete detail drawings and material specifications to be used for the fence, gates, and accessories shall be submitted prior to the start of construction.

1.04 QUALITY ASSURANCE

A. Chain link fences and gates including necessary erection accessories, fittings, and fastenings shall be supplied by a single manufacturer.

PART 2 – PRODUCTS

2.01 MATERIALS – STEEL

A. Steel Sections: ASTM A36/A36M.

B. Steel Tubing (TS or HSS Sections): Square or rectangular sections, ASTM A500, Grade B (Fy = 46 ksi); round sections, ASTM A500, Grade C (Fy = 46ksi); structural tubing.

C. Plates: ASTM A283.

D. Pipe: ASTM A53, Type E or S (welded or seamless), Grade B (Fy = 35 ksi) or ASTM A501 (Fy = 35 ksi), black and hot-dip galvanized finish, as indicated.

E. Bolts, Nuts, and Washers: ASTM A307, galvanized to ASTM A153/A153M where connecting galvanized components.

F. Welding Materials: AWS D1.1; type required for materials being welded.

G. Shop and Touch-Up Primer: SSPC-Paint 15, complying with VOC limitations of authorities having jurisdiction.

H. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20, Type I; inorganic, complying with VOC limitations of authorities having jurisdiction.

I. Fencing: Galvanized-coated fabric, with a top rail, bottom tension wire, and three strands of barbed wire mounted on vertical extension arms. The fabric height shall be 6 feet. The upper strand of barbed wire shall be approximately 12 inches above the top of fabric. Posts shall be set in concrete.

J. All steel or malleable iron parts and accessories shall be hot-dipped galvanized or aluminum coated after fabrication. Provide materials per Table 02710-1.

Table 02710-1. Steel Fence Materials

Fabric:	Fence fabric shall meet the requirements of AASHTO M181 using a uniform 2-inch mesh made from 9-gauge wire. Galvanizing shall conform to AASHTO M181, Type 1, Class C (zinc coating), or Type II (aluminum coating).
Posts:	Posts, gate frames, and braces shall be galvanized steel pipe conforming to the requirements of AASHTO M181, Type 1, Grade 1.
Line Posts:	2-3/8-inch OD pipe, 3.65 pounds per foot.
Terminal Posts:	End corner and pull posts. 2-7/8-inch OD pipe, 5.79 pounds per foot.
Gate Posts:	4-inch OD pipe, 9.10 pounds per foot.
Top Rails:	1-5/8-inch OD steel pipe, 2.27 pounds per foot. Rail
Couplings:	Sleeve type, 6 inches long, meeting AASHTO M181.
Bracing:	Pipe braces same as top rail, 3/8-inch-diameter steel rod truss and tightener.
Post Tops:	Pressed steel, malleable iron with pressed steel extension arm meeting AASHTO M181, or one-piece aluminum casting.
Barbed Wire:	Two, 12-1/2-gauge steel wires with four-point barbs spaced at 5-inch intervals conforming to the requirements of ASTM A121, Class 2, or aluminum coated, ASTM A585, Type I.
Stretcher Bars:	Steel bars, 3/16 by 3/4 inch, or equivalent area with a full length of the fabric.
Fabric Ties:	Galvanized wires.
Gate Frames:	Steel tubing, 1-7/8-inch OD, 2.28 pounds per foot.
Tension Wire:	Galvanized or aluminum coated coil spring wire, 7 gauge, AASHTO M181.
Concrete:	Concrete shall be of a commercial grade with a minimum 28–day compressive strength of 2,500 psi or an approved, premixed, sacked concrete.

K. Gates: Shall be swing type, hinged to swing 180 degrees each way from closed to open, complete with frames, latches, stops, keepers, hinges, braces, three strands of barbed wire, and fabric. Gate leaves shall have intermediate members and diagonal truss rods as required for rigid construction and shall be free from sag or twist. When adjacent fence is topped with barbed wire, gates shall be fitted with vertical extension arms or shall have frame end members extended to carry barbed wire. Joints between frame members shall be made by welding or by means of heavy fittings, and shall be rigid and watertight. Gate fabric shall be same as fence fabric and shall be attached to frame ends by stretcher bars, bolt hooks, or other mechanical means.

L. Hinges: Shall be of heavy pattern, with large bearing surfaces, and shall not twist or turn under the action of the gate. Latches shall be plunger bar type, full gate height, and arranged to engage the gate stop and provided with a forked latch. Latches shall be arranged for padlocking, with the padlock accessible from both sides of the gate. Stops shall consist of a roadway plate with anchor set in concrete and arranged to engage the plunger. Keepers shall consist of mechanical devices for securing and supporting the free end of the gates when in the fully open position.

M. Locks: Provided by the Owner.

2.02 FABRICATION

A. Fit and shop assemble items in largest practical sections, for delivery to site.

B. Fabricate items with joints tightly fitted and secured.

C. Continuously seal joined members by intermittent welds and plastic filler or as shown, whichever is the most restrictive.

D. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.

E. Exposed Mechanical Fastenings: Flush countersunk screws or bolts; unobtrusively located; consistent with design of component, except where specifically noted otherwise.

F. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

2.03 FINISHES – STEEL

A. Galvanizing of Structural Steel Members: Galvanize after fabrication to ASTM A123/A123M requirements. Provide minimum 1.7 ounces per square foot galvanized coating.

B. Galvanizing of Nonstructural Items: Galvanize after fabrication to ASTM A123/A123M requirements.

2.04 FABRICATION TOLERANCES

A. Squareness: 1/8-inch maximum difference in diagonal measurements.

B. Maximum Offset Between Faces: 1/16 inch.

C. Maximum Misalignment of Adjacent Members: 1/16 inch.

D. Maximum Bow: 1/8 inch in 48 inches.

E. Maximum Deviation from Plane: 1/16 inch in 48 inches.

2.05 PLASTIC SLATS

A. Plastic slats shall be installed in all portions of the fence including gates unless noted on the Contract Drawings.

B. Plastic slats shall be 3/8-inch by 2-3/8-inch by the height designation of the fence. They shall be manufactured from tubular polyethylene color pigmented material consisting of high-density virgin polyethylene and color pigments, designed to retard ultraviolet penetration. The material shall have a minimum wall thickness of 0.0030-inch plus or minus 0.0003-inch and shall remain flexible without distortion and without becoming brittle through a temperature range of minus 70 degrees F to plus 250 degrees F. Tensile strength shall be at least 3,600 psi and the melt index shall not exceed 0.25.

C. Plastic slats shall be retained in place by means of U-shaped retainer members at the bottom and top of the fence. Retainer members shall be of the same material as the slats.

D. The color for plastic slats shall be brown in color or approved equivalent.

2.06 CONCRETE

A. Concrete for footings shall have a 28-day compressive strength of 3,000 psi.

PART 3 – EXECUTION

3.01 EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive work.

3.02 PREPARATION

A. Supply setting templates to the appropriate entities for steel items required to be cast into concrete or embedded in masonry.

3.03 INSTALLATION

A. Fit and shop assemble fencing components in largest practical sizes for delivery onto site.

B. Install items plumb and level, accurately fitted, free from distortion or defects.

C. Provide for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.

D. Obtain approval prior to site cutting or making adjustments not scheduled.

E. After erection, prime welds, abrasions, and surfaces not shop primed or galvanized, except surfaces to be in contact with concrete.

1. Do not leave exposed surfaces unprimed for more than 4 hours.

F. Fencing:

1. The installed fence shall conform to the alignment on the drawings. All posts shall be plumb. Unless otherwise indicated on the drawing, posts shall be spaced no more than 10 feet apart. Install corner or slope posts where changes in line or grade exceed a 30-degree deflection. Where necessary, the fence grade shall be adjusted to fit the ground contour by slipping the fence fabric links. Ground surface irregularities shall be graded as required to maintain no more than a 6-inch clearance below the bottom of the fence fabric.

2. Concrete foundation, 36 inches deep, shall be provided for the posts. Concrete foundations shall be circular in horizontal section, not less than 8 inches in diameter for line posts, and with a diameter not less than the post OD, plus 9 inches for terminal and gate posts, except that foundations in bedrock shall be at least 6 inches larger than the outside dimension of the post. Foundations shall extend above the ground surface and shall be crowned approximately

1 inch. Each foundation shall be cured for at least 72 hours before further work is done on the post.

3. Top rails and bottom tension wires shall be installed before the fabric. Top rails shall be furnished in at least 18-foot lengths and shall be securely connected to gate and terminal posts. Tension wires shall be installed approximately 6 inches above grade and shall be attached to each post and securely anchored at terminal and gate posts.

4. Fabric shall be attached to the top rail and bottom tension wire at 24-inch centers, and to the line posts at 15-inch centers. Barbed wire shall be fastened to each extension arm by internal clips or external fabric ties. Stretcher bars shall be provided at each gate post and terminal post. Each stretcher bar shall be threaded through the fabric and anchored to the post at 15-inch centers by positive mechanical means.

5. Each gate post and terminal post shall be braced by a horizontal pipe brace and an adjustable truss extending to an adjacent line post. Corner posts shall be braced in both directions.

6. Fabric shall be stretched taut and anchored so that pull of 150 pounds at the middle of a panel will not lift the bottom of the fabric more than 6 inches.

7. Gates shall be installed so that they cannot be removed without disassembly of the hardware. Hardware attachment bolts shall be peened so that removal will be difficult.

3.04 ERECTION TOLERANCES

A. Maximum Variation from Plumb: 1/4 inch per story, noncumulative.

B. Maximum Offset from True Alignment: 1/4 inch.

C. Maximum Out-of-Position: 1/4 inch.

END OF SECTION

SECTION 03102

CONCRETE FORMWORK

PART 1 - GENERAL

1.01 WORK INCLUDED

A. This Section of Work shall include all labor, materials, appliances, equipment, and accessories necessary to prepare forms to receive all concrete for the building structure as specified in Specification Section 03300 - Cast-In-Place Concrete, and as shown on the Structural Drawings.

B. All inserts, anchors, bolts, pipe sleeves, and other embedded items shown on the Drawings shall be installed under this Section of the Work.

C. All inserts, anchors, bolts, etc., specified in conjunction with other trades shall be furnished and installed by the trade concerned and under the supervision of the General Contractor.

1.02 RELATED WORK

A. The Work of this Section shall be closely coordinated with that of:

1. Section 03300 - Cast-In-Place Concrete

1.03 REFERENCED STANDARDS

A. ACI 318 - Building Code Requirements for Reinforced Concrete.

B. ACI 347 - Recommended Practice for Concrete Formwork.

1.04 SUBMITTALS

A. Submittals shall be submitted to the Engineer for review and acceptance prior to construction in accordance with Special Provisions Section 21- Submittals.

1.05 QUALITY ASSURANCE

A. Construct and erect concrete formwork in accordance with ACI 318, ACI 347, and applicable construction safety regulations for the place of work.

1.06 COOPERATION WITH OTHER TRADES

A. The Contractor shall coordinate his work with that of other trades to insure that the Work will be carried out in an orderly fashion. Embedded items such as anchor bolts, bearing plates, metal frames, inserts, sleeves, chases, boxes, rough bucks and nailing blocks provided by others, shall be set as part of the Work of this Section.

B. Make provisions for all mechanical and electrical work required to be built into formwork.

PART 2 - PRODUCTS

2.01 LUMBER

A. #2 and better Douglas Fir.

2.02 PLYWOOD

A. APA, PLYFORM, Class I or II, BB-Exterior, not less than 5/8 inches thick and graded in compliance with Product Standard PS 1.

B. For exposed finish concrete surfaces, use new plywood or material with a medium density overlay finish.

2.03 FORM TIES

A. Dayton Superior or approved equal. Wire ties will not be permitted. Contractor may propose other systems of tying forms, but they must be approved by the Engineer before use. Use 1 inch breakback cones where exposed.

2.04 FORM OIL

A. Non-staining mineral oil, mineral oil emulsions, microcrystalline wax emulsions and/or resin emulsions as approved for compatibility with paint.

2.05 TAPE

A. Arno #320 or 3M #471, white, two inch wide minimum.

2.06 CORNER FORMS, RECESS AND CHAMFER STRIPS

A. Burke, Greenstreak or Vulco. PVC plastic shapes to produce the profile shown.

PART 3 - EXECUTION

3.01 PREPARATORY PROVISIONS

A. Prior to placing forms, the Contractor shall be responsible for the examination and acceptance of all conditions affecting the proper installation of his Work, and shall not proceed until all unsatisfactory conditions have been corrected.

B. Prior to placing forms, insure that:

1. Soil Compaction Tests on subgrade have been approved.
2. The placement of aggregate base is complete.

3.02 DESIGN

A. The design and engineering of all formwork shall be the responsibility of the Contractor. The design shall be in conformance with ACI 347. Thickness, gauges, spacing, etc., shall be determined by the Contractor to adequately allow for the design pressures of the concrete and the specified dimensional tolerances.

B. The Contractor shall be responsible for the examination and acceptance of all conditions affecting the proper construction and/or installation of the Work of this Section, and shall not proceed until all unsatisfactory conditions have been corrected. Commencing work shall be construed as acceptance of all conditions by the Contractor as satisfactory for the construction and/or installation of the Work.

3.03 FORM MATERIAL

A. Forms shall be constructed of the materials best suited for obtaining desired finish of the concrete surfaces. Wood forms on exposed surfaces shall be free from cupping, warpage, or loose knots.

B. Form materials may be re-used, provided they produce finish surfaces equal to those of the original forms. Before re-use, thoroughly clean and recondition in every respect.

3.04 COATING

A. Forms shall be coated prior to placement of reinforcing with an approved form oil. In no instance shall a coating be used that will interfere with the application and/or adhesion of paint or any other material to be applied to the surface of the concrete.

B. Joints between form panels on exposed faces shall be sealed with tape at the time of erection of the forms, as required to prevent the leakage of mortar or loss of fines.

3.05 CONSTRUCTION

A. Erect to lines, shapes, and dimensions, and in precise position to form the lines and designs indicated; suitable for removal without prying against the concrete. Make forms tight, without cracks or holes, and prevent the leakage of mortar or loss of fine particles from the concrete. Knots that have loosened leaving holes, holes that are not used, and cracks that have opened up, shall be covered with sheet metal for unexposed concrete. Construct formwork as follows:

1. Wales and studding shall be of adequate size and strength, braced and spaced to prevent bulging or sagging of forms. Stud spacing shall be compatible with the thickness and grade of form plywood used. Deflections of form materials shall not exceed 1/360.
2. Use rods and cones or other suitable devices to form the concrete to proper thickness. No wood other than built-in bucks or nailing blocks shall be allowed to remain permanently in the forms.
3. Forms, screeds, and templates are required as necessary to hold lines and elevations, and to securely hold reinforcing and embedded items in place.
4. Chamfer all corners with PVC chamfer strips.

3.06 NEAT FORMS - FOUNDATIONS

A. All footings shall be formed unless neat excavations can be provided as follows:

1. Sides of excavations shall be cut vertical, and bottom corners shall be essentially square. Rounded loose corners are not acceptable.
2. Excavation width shall be 4 inches wider than shown on the Drawings (i.e. 2 inches each side of footing).
3. Adequate devices are provided to support reinforcing, and to accurately maintain location of embedded items during concrete placement.
4. Loose soils, which accumulate during placement of reinforcing, must be able to be readily removed prior to concrete placement.

3.07 EMBEDDED ITEMS

A. Bolts, inserts, and other items embedded in the concrete shall be accurately secured so that they shall not be displaced during the placing and compacting of the concrete. Set embedded bolts with templates in accordance with layouts or Shop Drawings of the Manufacturer. Stabbing of bolts is not allowed.

B. Do not embed piping, other than electrical conduit, in concrete. Locate conduit to maintain strength of the structure at a maximum. If necessary, increase the thickness of the concrete so that the outside diameter of the conduit does not exceed 30 percent of the concrete thickness.

C. Do not place conduit in slabs-on-grade or suspended slabs. Typically all conduit shall be embedded in base materials. When conduit must be placed on top of the aggregate base and embedded in the concrete slab on grade, the conduit shall not encroach into slab more than 1 inch at any location. Where more than three (3) conduits run parallel, conduits shall be spaced to provide 3 inches clear between, or conduits shall be embedded in base material.

D. Form openings and chases as indicated or necessary to receive, pass, and clear other work; verify sizes with the Mechanical and other trades before forming. Give close attention to the location of boxes, cans, and sleeves for others.

E. Form reglets, rebates, seats, and pockets as indicated or necessary to receive or engage the work of others. Verify dimensions and details prior to forming.

F. Chamfer or tool all exposed edges.

3.08 CLEANING

A. Just prior to the placement of concrete, all dirt, chips, sawdust, rubbish, and water or ice shall be removed from the forms.

3.09 REMOVAL OF FORMS

A. Do not remove forms or supports until concrete has hardened sufficiently to resist damage from removal operations. Do not pry against concrete during form removal.

1. Formwork for exposed surfaces shall remain in place until the concrete has cured at a temperature above 50 degrees F for a total of 5 days.

2. Do not remove forms from the sides of walls until the concrete has reached a minimum age of 24 hours. Curing of concrete shall not be interrupted after forms have been removed.

3. Do not place backfill material against structure walls until the concrete has reached an age of 14 days and not before concrete develops a minimum strength of 3,000 psi. Contractor shall exercise care during placement and compaction of backfill material to prevent over compacting to the point of displacing the wall line.

4. Contractor shall exercise care to protect the concrete structures from superimposed loading created by construction equipment.

5. Do not remove forms for suspended concrete for a minimum of 21 days, and not before concrete has attained its full design strength.

3.10 TOLERANCES

A. The following maximum tolerances shall be allowed for form construction:

1. Footing thickness - ± 1/2 inch.
2. Wall and Footing Centerline Location - ± 1/4 inch.
3. Conspicuous Lines and Levels - 1/4 inch variation in 20 feet, except visible lines shall appear straight, true, and free from sudden transitions.
4. Deflection of Form Materials - 1/360 times span.
5. Slab Thickness - + 1/2 inch, - 1/4 inch.
6. Embedded Anchor Bolts - ± 1/16 inch.
7. Flight of Stairs - Rise ± 1/8 inch, Thread ± 1/4 inch.
8. Consecutive Steps - Rise ± 1/16 inch, Thread ± 1/8 inch.
9. All Other - ± 1/4 inch in 10 feet and 1/2 inch overall.

3.11 CLEANING UP

A. During the progress of the Work, the premises shall be kept free from debris and waste material resulting from the Work in this Section. Upon completion, all surplus material and debris shall be removed from the site.

END OF SECTION

SECTION 03300

CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.01 WORK INCLUDED

A. Furnish all materials and labor necessary to complete Cast-In-Place Concrete as indicated, specified herein, or both. The Work of this Section includes but is not necessarily limited to the following:

1. Curb and gutter.
2. Miscellaneous pits, trenches, etc.
3. Slabs-on-grade.
4. Inserts.
5. Quality control.

B. All flatwork and associated concrete improvements shown on Drawings.

1.02 RELATED WORK

A. The Work of this Section shall be closely coordinated with that of:

1. Section 03102 - Concrete Formwork

1.03 REFERENCED STANDARDS

A. ASTM C 31 - Practice for Making and Curing Concrete Test Specimens in the Field.

B. ASTM C 33 - Concrete Aggregate.

C. ASTM C 39 - Test Method for Compressive Strength of Cylindrical Concrete Specimens.

D. ASTM C 40 - Test Method for Organic Impurities in Fine Aggregates for Concrete.

E. ASTM C 42 - Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.

F. ASTM C 88 - Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate.

G. ASTM C 94 - Specification for Ready-Mixed Concrete.

H. ASTM C 131 - Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.

I. ASTM C 136 - Method for Sieve Analysis of Fine and coarse Aggregates.

J. ASTM C 143 -Test Method for Slump of Hydraulic Cement Concrete.

K. ASTM C 150 - Specification for Portland Cement.

L. ASTM C 157 - Test Method for Length Change of Hardened Hydraulic-Cement Mortar and Concrete.

M. ASTM C 172 - Method of Sampling Freshly Mixed Concrete.

N. ASTM C 173 - Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method.

O. ASTM C 231 - Test Method for Air Content

P. ASTM C 260 - Air Entraining Admixtures for Concrete.

Q. ASTM C 289 - Test Method for Potential Reactivity of Aggregates (Chemical Method).

R. ASTM C 330 - Lightweight Aggregate for Structural Concrete.

S. ASTM C 494 - Chemical Admixtures for Concrete.

T. ASTM C 595 - Specification for Blended Hydraulic Cements.

U. ASTM C 618 - Specification for Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Portland Cement Concrete.

V. ASTM D 75 - Practice for Sampling Aggregates.

W. ACI 211.1 - Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete.

X. ACI 211.2 - Standard Practice for Selecting Proportions for Structural Lightweight Concrete.

Y. ACI 301 - Specifications for Structural Concrete for Buildings.

Z. ACI 304 - Recommended Practice for Measuring, Mixing, Transporting, and Placing Concrete.

AA. ACI 305 - Recommended Practice for Hot Weather Concreting.

BB. ACI 306 - Recommended Practice for Cold Weather Concreting.

CC. ACI 318 - Building Code Requirements for Reinforced Concrete.

1.04 SUBMITTALS

A. Submittals shall be submitted to the Engineer for review and acceptance prior to construction in accordance with Special Provisions Section 21- Submittals.

1.05 QUALITY ASSURANCE

A. Perform cast-in-place concrete work in accordance with ACI Standards listed in Paragraph 1.05, unless specified otherwise in this Section.

B. Mix designs shall be prepared by a licensed professional engineer in the State of Nevada representing a qualified testing laboratory.

C. Concrete shall be batched only in a plant currently certified by the National Ready Mix Concrete Association.

1.06 WEATHER PROTECTION

A. Concrete shall not be placed when the temperature is above 85 degrees F or below 40 degrees F, or if it is likely to go above 85 degrees F or below 40 degrees F, before the concrete has its initial set without special precautions.

B. Cold Weather Concreting: The provisions of "Recommended Practice for Cold Weather Concreting" (ACI 306) shall be closely followed except as otherwise specified herein.

1. After the first frost (or) and until the mean daily temperature at the site falls below 40 degrees F for more than one day in a row, concrete shall be protected from freezing for not less than the first 72 hours after it is placed.

2. When the mean daily temperature falls below 40 degrees F for more than one (1) day in a row, concrete shall thereafter be placed at a temperature not lower than 55 degrees F and not higher than 70 degrees F, and shall be maintained not lower than 55 degrees F for at least the first five (5) days. During the next 3 days, it shall be protected from freezing.

3. When the mean daily temperature rises above 40 degrees F for more than three (3) successive days, placement and maintenance of concrete for five (5) days at or above the regular minimum temperature may be discontinued.

4. Equipment shall be provided for adequate heating of the concrete materials and protecting the concrete during freezing and near freezing weather.

5. No frozen materials or materials containing ice shall be used.

6. The housing, covering, or other protection in connection with curing shall remain in place at least 24 hours after the artificial heating is discontinued.

7. No salt or other chemicals shall be used under any circumstances.

C. Hot Weather Concreting: The provisions of "Recommended Practice for Hot Weather Concreting" (ACI 305) shall be closely followed, except as otherwise specified herein.

1. Concrete deposited in hot weather shall have a placing temperature not greater than 85 degrees F so that it will not cause difficulty from loss of slump, flash set, or cold joints.
2. The ingredients shall be cooled before mixing if necessary to maintain the temperature below the maximum placing temperature of 85 degrees F.

1.07 QUALITY CONTROL

A. The Contractor shall retain and pay a qualified testing laboratory to sample, test, and submit test reports and design mixes as required by the following:

1. Mix Design: Test the proposed cement and aggregates and design concrete mixes for each class of concrete required. The testing laboratory shall obtain samples of each type of aggregate and Portland Cement for analysis and preparation of the mix design. The cement and aggregates shall be sampled and tested in accordance with procedures herein specified. The proportions of the material and the water content shall be established by tests made in accordance with ACI 211.1 for hardrock concrete (ACI 211.2 for lightweight concrete) and the applicable requirements of this Specification. The maximum allowable water content and the quantity of aggregate per sack of cement shall be predetermined by the laboratory. Submit a complete package including the mix design, aggregate reports, and strength for approval by the Engineer at least 14 days prior to the placing of any concrete. No concrete shall be allowed to be placed until the mix designs have been approved. No substitutions

shall be allowed in the materials used on the job without additional designs and test reports as specified herein, showing that the quality of the concrete is satisfactory.

a. Shrinkage test reports in accordance with ASTM C 157 as modified by SEAOCC shall be included with mix designs submitted when shrinkage requirements are listed for a class of concrete. Additional tests will be required during construction to verify continued conformance.

2. Cement: Make a test for every 500 barrels or fraction thereof of cement used, in accordance with the requirements of ASTM C 150. Make the tensile strength test for seven (7) days. Tag Portland Cement for identification at the location of sampling. In the event samples are stored at the mill before delivery, maintain a testing laboratory representative at the mill who is competent and reliable to do or supervise the sampling and tagging of cement and to oversee the storing and loading for delivery, in order to establish the identity of the delivered material with respect to the several lots tested. The representative at the mill shall be employed by the testing laboratory, and shall not be in the employ of, or engaged by, the manufacturer or delivering agency. Where vendor submits certified mill certificate indicating compliance, no further testing will be required.

3. Aggregate: Test all aggregate when the concrete mix is established and whenever the character of the pit source for the material changes. A complete set of aggregate tests shall be made at intervals not exceeding 90 days during the duration of this Work. Tests shall include a sieve sampling and testing in accordance with the requirements of ASTM Standard Methods as follows:

a. Sampling: Sample coarse and fine aggregates in accordance with ASTM D 75. Take samples of aggregates at the source of supply or, in the event the source of supply has been approved, from storage bunkers at the ready mixed concrete plant.

b. Sieve Analysis: ASTM C 136 for coarse and fine aggregate.

c. Organic Impurities: ASTM C 40. Fine aggregate shall develop a color not darker than the reference standard color.

d. Soundness: ASTM C 88. The loss resulting therefrom, after 5 cycles using magnesium sulfate, shall not exceed 18 percent for coarse aggregate or 15 percent for fine aggregate.

e. Abrasion of Coarse Concrete Aggregate: ASTM C 131. The loss shall not exceed 10 percent after 100 revolutions, or 50 percent after 500 revolutions.

f. Reactive Materials: ASTM C 289.

B. Mix designs, tests, etc. for Concrete required by this Specification, need not be made specifically for this job, provided that all data submitted is prepared by an independent testing laboratory, is current within the last six (6) months, is clearly identified and correlated, and that in the judgment of the Engineer, the test data correctly describes the materials proposed for use.

C. Transit Mixed Concrete: Transit mixed concrete shall be used and shall conform to ASTM C 94. Additional water is not to be added at the job, unless specifically approved by the on-site testing laboratory's representative.

1. Concrete shall be placed within 90 minutes after the water is first added.

2. A Weighmaster's certificate shall accompany each load stating the quantity of cement, water, fine aggregate, coarse aggregate, and admixture contained in the load, and the batch time.

D. Records: Make available for inspection at the site, a record showing the date and time of placing concrete in each portion of the structure. Placement shall be recorded daily in ink on the project's record set of drawings.

E. Inspection of Reinforcing Steel and Concrete Placing: Before any concrete may be placed in any member or portion of the building, the reinforcing steel shall be checked and approved by an ICC Certified Inspector.

F. The representative of the Owner's testing laboratory shall be present during the placing of all concrete, and shall maintain close control over the quality and slump of the concrete.

1.08 OWNERS QUALITY CONTROL

A. Testing laboratory, retained by Owner, shall sample and test as follows:

1. Sample concrete in accordance with ASTM C 172, except when taking initial slump tests.

2. Compression Tests: Make three (3) standard test cylinders from each day's placing of each class of concrete, and for each 50 cubic yards placed, or fraction thereof. Date cylinders, number, and note the point from which the sample was taken. Indicate the slump.

3. Test Cylinders: Make test cylinders at the job, in accordance with ASTM C 31. At the end of 24 hours after making, store the cylinders under moist curing conditions at approximately 70 degrees F until tested. Test specimens in accordance with ASTM C 39 at the age of 7 and 28 days.

4. Slump: Whenever plasticizer is to be added, initial slump tests are to be taken at the truck prior to the addition of plasticizer. Initial slumps are to be reported along with the quantity of plasticizer added. A second slump after the addition of plasticizer is to be reported and shall be taken in accordance with ASTM C 143. Tests in accordance with ASTM C 143 shall also be performed at the same time as the strength test cylinders are made. Slump tests shall also be made at any time the appearance of concrete indicates a change in consistency. Maximum allowable slump prior to addition of plasticizer, shall be 3 inches.

5. Entrained Air Tests: Freshly mixed concrete shall be tested for air content in accordance with ASTM C 231 and reported with compression test reports. Air, when required, is to be 5% to 7% by volume. Test air content for each exterior flatwork pour and any time the concrete mix has air entraining.

B. Test results will be reported in writing to the Civil Engineer, Structural Engineer, Ready-Mix Producer, and Contractor within 24 hours after tests. Reports of compressive strength tests shall contain the project identification name and number, date of concrete placement, name of concrete testing service, concrete type and class, location of concrete batch in structure, design compressive strength at 28 days, concrete mix proportions and materials, compressive breaking strength, and type of break for both 7-day tests and 28-day tests.

C. Below Strength Concrete: Should the strength of concrete, as indicated by the tests, fall below the required minimum, then additional tests of the concrete which the unsatisfactory samples represent may be required. Make such tests in accordance with ASTM C 42. Fill the holes made by cutting the cores with "dry pack" concrete. Should core tests show that concrete has

developed the required strength, the costs of tests shall be paid by the Owner. Should these tests indicate that concrete is below the required strength, the cost shall be an obligation under this Section and defective concrete shall be removed and replaced with concrete of the required strength.

D. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted but shall not be used as the sole basis for acceptance or rejection.

PART 2 - PRODUCTS

2.01 PORTLAND CEMENT

A. ASTM C 150, Type II, low alkali.

B. The brand of cement shall not be changed during the progress of the job unless approved in writing by the Engineer. Cement shall have been used for at least two (2) years with the proposed aggregate without detrimental reaction.

2.02 POZZOLAN

A. ASTM C 618, Class N.

2.03 AGGREGATES

A. Fine and course aggregate ASTM C 33.

B. Course aggregate shall:

1. Be furnished from one source,
2. Be crushed stone or gravel,
3. Be washed unless independent testing laboratory can certify that aggregate meets all required tests, and
4. Shall have a maximum of 1% passing the #200 sieve.

C. Fine Aggregate shall:

1. Be furnished from one source,
2. Be clean, sharp, natural sand,
3. Be washed unless independent testing laboratory can certify that aggregate meets all required tests, and
4. Shall have a maximum of 5% passing the #200 sieve.

2.04 WATER

A. Clean and free of deleterious amounts of acids, alkalis, salts, oils, or organic substances.

2.05 ADMIXTURES

A. A water reducing admixture conforming to ASTM C 494 Type A or F, shall be used in all concrete.

1. For Class"A" and "C" Concrete, use Master Builders, Inc. "Polyheed" Non-chloride Admixture, or equal.

2. For Class "B" Concrete, use Master Builders, Inc. "Polyheed" Non-chloride Admixture For Use With Fly Ash, or equal.

B. The use of super-plasticizer agents conforming to ASTM C 494 - Master Builders Inc. "Polyheed" or equal, is allowed with the Engineer's approval.

C. The Contractor shall obtain the Engineer's approval of all the admixtures he proposed to use before the testing agency proceeds with the design mixes.

D. Calcium chloride shall not be used under any circumstances.

2.06 CURING MATERIALS

A. Polyethylene sheet 10-mill minimum thickness.

B. Insulated blankets.

C. WR Meadows Vocomp 20.

D. Alternates: Approval of "or equal" or "better" curing compounds will be considered. The Engineer will be the sole judge of what qualifies as an "or equal" product.

2.07 EPOXY

A. Epoxy for anchoring reinforcement for repair/replacement of mislocated dowels, shall be Simpson Set XP or equal, placed with approval of the Engineer in accordance with the manufacturer's recommendations.

2.08 PATCHING MATERIALS

A. Thorite as manufactured by Thoro Systems Products, Inc., or equal.

2.09 SEALER

A. All interior concrete surfaces where so indicated, shall be sealed with WR Meadows Vocomp 25 in strict accordance with the written directions of the manufacturer.

2.010 CONCRETE MIX DESIGNS

A. Design: Select and proportion ingredients using trial batches; sample, cure, and test concrete mix through an approved independent testing laboratory in accordance with ACI 309 per ACI 211.1.

B. Concrete Types: The various concrete mix designs to be used are as follows:

1. Class "C" - For use in all exterior slabs-on-grade.

   a. ¾-inch maximum aggregate.

   b. Pozzolan – 15-20% of total cementitious materials (at Contractor's option).

   c. 28-Day compressive strength - 4,500 psi minimum.

   d. Maximum slump - 3 inches.

e. Water/cement ratio - 0.45 maximum.

f. Air entrainment – 5 to 7%.

g. Water reducing admixture required.

2.011 CONCRETE MIXING

A. Measuring, mixing, and transporting concrete shall be in accordance with ACI 304.

B. Truck mixers:

1. Limit volume of concrete in truck to 63% of total capacity per ASTM C 94.

2. Mix a minimum of 70 revolutions at the rate of rotation designated by the manufacturer.

3. Truck shall be equipped with revolution counter that is a re-settable recording type. Do not start counter until all ingredients are in drum.

4. Super plasticizers are to be added at the site. Mix not less than the minimum revolutions recommended by the admixture manufacturer.

C. Do not add water at the site, unless specifically approved by the testing laboratory's representative. If water is added, amount shall be recorded on the batch ticket.

D. Do not use concrete that has stood over 20 minutes after leaving the mixer, or concrete that is not placed in less than 90 minutes after water is first introduced into the mix.

E. The mixers and handling devices shall be thoroughly cleaned after every pour.

PART 3 - EXECUTION

3.01 PREPARATORY PROVISIONS

A. Prior to placement of concrete, the Contractor shall be responsible for the examination and acceptance of all conditions affecting the proper placement of the concrete, and shall not proceed until all unsatisfactory conditions have been corrected.

B. Prior to placing concrete, insure that:

1. Soil compaction tests on the subgrade have been approved.

2. The placement of aggregate base is complete.

3. Formwork as required in Section 03102 - Concrete Formwork, is approved by the Engineer.

4. All embedded items are installed and securely held in place.

5. Mix designs are approved by the Engineer.

3.02 CLEANING AND WETTING FORMS

A. Remove foreign matter accumulated in forms, and rigidly close ports and openings left in the formwork immediately prior to starting concrete placement.

B. Wet wood forms sufficiently to tighten up cracks. Wet other materials including soils, sufficiently to reduce suction and maintain the workability of the concrete mix. Standing water

in the forms or on the subgrade is not allowed. See Paragraph 3.05.D.2 for wetting of subgrade for slabs-on-grade. Do not wet forms and soil during freezing weather.

C. Thoroughly clean tools used in transporting, placing, and consolidating the concrete immediately after each use.

3.03 EMBEDDED ITEMS

A. Place foundation bolts and other items to be built in prior to placing concrete. Accurately position and rigidly support using templates. Stabbing of bolts will not be acceptable.

B. Place PVC chamfer strips as required in Section 03102 - Concrete Formwork.

3.04 JOINTS

A. Form joints in the concrete work according to details and where indicated on the Drawings. Place concrete in a monolithic pour between joints.

B. Construction Joints: Construction joints for slabs-on-grade shall be located as shown on the Drawings. Construction joints for all other structural concrete work shall be located and constructed to least impair the strength of the structure. Joints shall be perpendicular to the main reinforcing. Locations and details shall be approved by the Engineer. Reinforcing steel shall be continuous across construction joints unless otherwise indicated. Provide keys in form as directed by Engineer. Roughen and thoroughly clean the surface of the concrete; remove all laitance; and wet the surface before placing new concrete against the joint.

C. Joints for Slabs-on-Grade:

1. Provide dowelled joints spaced as shown on the Drawings.
2. Sawed joints cut with a "soft saw" the same day the slab is placed, are preferable. In lieu of sawed joints, use 1/8 inch radius tooled joints.
3. Depth of joint shall be not less than 1-1/2 inches. No exceptions.
4. Slabs shall be placed in the largest practical size with a minimum length and/or number of construction joints.
5. Construction joints shall occur at a typical dowelled joint.

3.05 PLACING CONCRETE

A. General: Place concrete in conformance with the requirements of ACI 304 & ACI 318.

B. Conveying:

1. Direct discharge from the truck into the forms, or pumping, is the preferred method of placement.
2. Handle concrete from the mixer to the location of placing as rapidly as practicable, avoiding separation or loss of ingredients, and re-handling.
3. Equipment for chuting, pumping, or other conveying method shall be of such size and design as to ensure a practically continuous flow of concrete at the delivery end without separation of materials.

C. Placing:

1. Place concrete in lifts not over 4'-0" deep. Place and consolidate successive layer prior to initial set to prevent cold joints.

2. Keep surface of concrete level throughout with a minimum of concrete allowed to flow from one position to another.

3. Carry on placing of concrete as a continuous operation until the placing of each section or panel is completed.

4. Thoroughly consolidate concrete and work it around reinforcement and embedded fixtures, and into corners and angles of forms by internal vibrators, consolidate to exclude rock pockets, air bubbles, and honeycombs, and to obtain the required density and strength.

5. Exercise care to avoid over-vibration and separation of ingredients. Use vibrators to consolidate each layer and extend vibrator into previously placed layer. Use vibrator to bring fine material to the faces and top surfaces to produce the proper finish. Assign at least one workman at each location where concrete is being placed to vibrate and consolidate the concrete in forms. Vibrators shall not be left in any one spot longer than 30 seconds and shall be kept constantly in motion. Keep extra standby vibrators at the site.

6. Do not place concrete under water.

D. Slabs On Grade:

1. Prior to placing concrete, accurately locate center of dowelled joints for sawing or tooling.

2. Moisten aggregate base slightly to prevent suction. Base shall be just damp, not wet, and standing water is prohibited.

3. Place concrete with pumps or other suitable method. Concrete trucks are not allowed within the formed area to be placed.

4. Place concrete to the specified thickness and consolidate with internal vibrators. Vibrating screeds may be used if it can be demonstrated that the concrete can be fully consolidated.

5. Screed level to exact elevation.

3.06 FINISHING

A. Top of Footings: Rough wood float finish. Elevation and grade at top of footing shall be maintained within a tolerance of $\pm$ 1/4 inch.

B. Interior Slabs-on-Grade:

1. All slabs-on-grade shall have a monolithic finish. Screed concrete to accurate level grades and float to a uniform level surface.

2. Steel trowel to a smooth, dense, hard finish. Do not burnish trowel or over-trowel surfaces with hardener. Surface shall be free from depressions, trowel marks, scale, and foreign deposits. Use self-propelled troweling machines for large interior areas.

3. Delay final troweling until after sheen has completely disappeared. Dusting will not be permitted under any circumstances.

4. Tooled joints and edges shall be cut immediately after initial floating is completed and shall be re-cut after concrete has taken its initial set. Minimum depth of joint is 1-1/2.

5. Saw cut joints shall be cut with a "soft saw" the same day the concrete is placed. Minimum depth of joint is 1-1/2 inches.

6. Finish floors shall contact a 10 foot straight edge placed in any location, except across flow lines, within a tolerance of plus or minus 1/8 inch.

7. Depress slabs where shown on Drawings.

C. Exterior Slabs-on-Grade:

1. All floors shall have a monolithic finish. Screed concrete to accurate level grades and float to a uniform level surface.

2. Provide medium broom finish.

3. Tooled joints and edges shall be cut immediately after initial floating is completed and shall be re-cut after concrete has taken its initial set.

4. Saw cut joints shall be cut with a "soft saw" the same day the concrete is placed. Minimum depth of joint is 1-1/2 inches.

5. Finish floors shall contact a 10 foot straight edge placed in any location, except across flow lines, within a tolerance of plus or minus 1/8 inch.

6. Depress slabs where shown on Drawings.

D. Exposed Poured-In-Place Concrete Surfaces:

1. Immediately after forms are removed, exposed surfaces shall be finished and "sacked".

2. Remove all snap-ties or other devices to 1 inch below surface and dry pack holes with patching material that matches concrete. Grind off any ridges, projections, or other deformities. Sack surface to a smooth uniform finish.

3. Moist-cure sacked surfaces for not less than three (3) days.

E. Un-exposed Poured-In-Place Concrete Surfaces:

1. Remove all snap-ties or other devices to 1 inch below surface of concrete.

2. Patch any large holes, small rock pockets or defects, and fill snap-tie cone holes flush.

3.07 SEALER

A. All interior slabs-on-grade shall receive a sealer. Sealer shall be WR Meadows Vocomp 25 or equal.

B. Sealer shall be applied just prior to substantial completion.

3.08 CURING

A. General:

1. Freshly deposited concrete shall be protected from premature drying and excessively hot or cold temperatures, and shall be maintained with minimal moisture loss at a relatively constant temperature above 50 degrees F for a total of five (5) days.

2. Protect concrete from excessive changes in temperature during the curing period and at the termination of the curing process. Changes in the temperature of the concrete shall be as

uniform as possible and shall not exceed 5 degrees F in any one hour or 50 degrees F in any 24 hour period.

3. Protect concrete from injury from the elements until full strength is developed. Protect from mechanical injury.

B. Formed Surfaces:

1. Formed surfaces shall be cured by leaving forms in place for a minimum of five (5) days.

2. At Contractor's option, forms may be removed in less than five (5) days, if formed surfaces are cured with one coat of WR Meadows Vocomp 20 or equal, applied at not less than the manufacturer's recommended coverage.

C. Slab-on-Grade:

1. Apply one coat of WR Meadows Vocomp 20 or equal, as soon as possible after finishing. Apply at a rate of 350 to 400 sf/gallon. Apply a second coat within 24 hours after finishing.

2. In lieu of the second coat requirements of Item 1 above, after the first coat has dried, lightly wet the surface with a fog spray to provide a thin film of standing water. Cover with polyethylene, or blanket, and seal all edges to prevent evaporation of moisture. Maintain free water on the surface of the concrete for not less than seven (7) days.

3.09 REPAIR OF SURFACE DEFECTS

A. Defective Work:

1. Any concrete work not formed as indicated or not true to the intended alignment; or not plumb or level where so intended; or not true to the intended grades and levels; or that has voids or rock pockets; or that may have sawdust, wood, or debris embedded in it; or does not fully conform to the Specifications; will be deemed to be defective.

2. Concrete finish which is not true to line and plane; or which is not thoroughly troweled and properly surfaced as specified; or which varies more than 1/4 inch from the required finish grade; or which has any roughened top surfaces; or which does not connect properly to the adjoining work; will be deemed to be defective.

B. Defective work shall be removed and replaced with materials complying with the Specifications.

3.010 CLEANING UP

A. Upon completion of the Work, remove excess materials, equipment, apparatus, tools, and the like and leave the premises clean, neat, and orderly.

END OF SECTION

SECTION 13120

PREASSEMBLED BUILDING

PART 1 – GENERAL

1.01 SUMMARY

A. This Section specifies all requirements necessary to furnish and install a prefabricated portable aluminum building(s) including, but not limited to the following:

1. Frameworks
2. Windows
3. Door
4. Roof
5. Hold down clips

1.02 RELATED SECTIONS

A. The specific reference standard for this work will be the current Standard Specifications for Public Works Construction (SSPWC).

B. Section 03300 – Cast-in-Place Concrete

C. Division 16 - Electrical

1.03 PERFORMANCE REQUIREMENTS

A. Building Dimensions: 5 feet wide by 8 feet long

B. Minimum ceiling height is 83 inches.

C. Jurisdictional Design Requirements

1. Roof collateral Dead Load: 5 pounds per square foot. (Note: Collateral load shall be added to the building structural Dead Load by the designer, and consist of mechanical and electrical systems and ceiling.)
2. Floor Dead Load: 100 pounds per square foot
3. Live Load: 20 pounds per square foot
4. Snow Load: Ground Snow Load = 30 pounds per square foot. (Note: all sources of drifting to be defined in contract documents, i.e., adjacent structures, height changes, etc.)
5. Snow Exposure Factor: 1.0 Snow Importance Factor: 1.0

a. Thermal Factor: 1.1

6. Wind Speed: Vult = 120 miles per hour

a. Wind Exposure Coefficient: C

7. Seismic Criteria Lat = 39.514311111ºN Long = 119.709088889ºW

a. Seismic Importance Factor: 1.0

D. HVAC system is not required for prefabricated building. However, provisions shall be in place to support a future HVAC system including necessary structural support and electrical wiring.

1.04 SUBMITTALS

A. Submittals shall be submitted to the Engineer for review and acceptance prior to construction in accordance with Special Provisions Section 21- Submittals.

B. Product Data: Submit sufficient manufacturer's data to indicate compliance with these specifications. Mark data to indicate:

1. Details of material and construction.

2. Recommended installation requirements to properly construct the proposed guard shack and accessories.

C. Design Calculations: Complete structural design calculations of the building prepared by a Nevada Registered Structural or Civil Engineer, suitable for review by the approving building authority.

D. Shop Drawings: Submit shop drawings for fabrication and installation of guard booth. Include floor plans, elevations and detail sections as necessary. Indicate materials, methods, finishes and types of joinery, fasteners, anchorages and accessory items. Provide setting diagrams and templates for anchorages, sleeves, and bolts installed by others. Floor plan shall be approved by Owner prior to purchase and manufacture of prefabricated building.

E. Color charts illustrating available colors and patterns for specified finishes shall be submitted to owner for prompt selections.

1.05 QUALITY ASSURANCE

A. Standards: Comply with requirements listed below:

1. IBC (International Building Code)

2. IFC (International Fire Code)

3. NFPA (National Fire Protection Association)

4. IPC (International Plumbing Code)

5. NEC (National Electrical Code)

    a. Electrical devices factory installed within the prefabricated building shall be UL listed. Factory installed wiring system shall bear UL Classification insignia certifying compliance with the National Electrical Code, 2000 edition.)

6. Jurisdictional Design Requirements in Section 1.03B of this Specification.

B. Manufacturer Qualifications

1. Structures shall be the product of a manufacturer with a minimum of 5 years-documented experience in the design and fabrication of portable aluminum buildings.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Prefabricated guard booth shall arrive from the manufacturer fully assembled .

B. The Contractor is responsible for unloading the prefabricated guard booth per the manufacturer's recommendations.

1. Unloading of guard booth may require a forklift or crane.

1.07 COORDINATION AND SEQUENCING

A. Concrete foundation pad for booth must be placed and cured prior to installation of prefabricated guard booth. Anchorage can be either cast into pad or installed after the pad has cured as long as manufacturer recommendations for anchorage are met.

B. Coordinate installation of all underground electrical and control conduits beneath and stubbed through pad prior to installation of prefabricated guard booth. See electrical drawings and specifications for requirements.

1.08 WARRANTY

A. Preassembled Buildings shall be warranted against defects and workmanship for a period of one (1) year from date of original shipment.

PART 2 – PRODUCTS

2.01 MANUFACTURER

A. Guard-Buildings, LLC

B. Equal

2.02 PRODUCT MATERIALS

A. Structural members (frame floor, walls, and roof) to be 3-inch 11 gauge structural aluminum tube.

B. All structural components to be certified welded at all intersections to create a unitized framework. No rivets, bolts or other fasteners shall be used in joining structural components.

C. Finished building shall contain no wooden components.

D. Finish – Framework:

1. Mill-finished aluminum

E. Wall and Ceiling Panels:

1. Wall and ceiling panels shall be minimum 3-inch thick, single piece construction, composite (aluminum/polystyrene/aluminum) sandwich panels. Panels shall be laminated together using a solvent free two-part polyurethane adhesive and pressure.

a. The polystyrene core shall have the following mechanical properties:

1) Shear strength (flatwise): 18-22 psi

2) Shear modulus (flatwise): 280-320 psi

2. Panel facing shall be 26 gauge stucco embossed aluminum painted per Owner selected color. Primer and paint shall be applied per manufacturer's recommendations.

3. Panels shall have formed edge connectors that area capable of being friction locked without mechanical fasteners using a full length joint without through metal connectors.

4. Wall and ceiling panels shall provide minimum R-15 insulation.

F. Flooring:

1. Floor shall be 1/4-inch polished aluminum diamond plate. Flooring shall be painted with non-slip finish to Owner's color preference.

2. Provide minimum R-15 floor insulation.

G. Door(s):

1. Prefabricated guard booth to have swing door centered on roadway side of the booth.

2. Door shall be constructed of 3068 20-gauge steel, 1 ¾" thick with threshold and half glass window with minimum ¼" insulated clear tempered safety glass.

3. Hardware to include: 1 ½ pair of 4 ½" x 4 ½"butt hinges; commercial quality, lever lockset; dead bolt, spring closer and continuous vinyl gasket on door frame.

H. Windows and Glazing:

1. Windows shall have aluminum frames and inserts and to be industrial quality with active window panel to slide horizontally. Windows to include inside positive locking device and be installed to inside sill height 42" from finished floor.

2. Windows to be ½" clear insulated tempered safety glass.

3. Windows shall be included on all 4 walls and allow for a 360 degree view.

I. Shelf:

1. Furnish minimum 16" deep, full-width shelf, 42" above finished floor and finished with a HPL (high pressure laminate).

J. Electrical:

1. Electrical service to include a three-phase, 4 wire 100-amp, 120/208, capacity load center, with circuit breakers; and 20 amp switches as shown on drawings. Coordinate with Electrical drawings for load center breakers and sizes. Note that electrical service to the gate operator, site lighting and HVAC will orginate from this buiding. All conduit and wiring shall be surface mounted and installed in compliance with the National Electrical Code. Conduit is ½" emt cable and wire is #14.

2. All electrical components shall bear the UL label.

3. Furnish (3) three 115v duplex outlet, and (1) one 208v single outlet

4. Lights to be LED type fixture with acrylic lens.

K. Exterior Roof

1. Factory installed integral structural roof to provide minimum of 6-inch overhang beyond edge of building.

2. Roofs to include aluminum gutters around the entire perimeter.

PART 3 – EXECUTION

3.01 INSTALLATION

A. General: All preparatory work and installation work shall be performed by site-contractor and shall be performed in accordance with local and/or state codes.

B. Building shall be delivered completely constructed with utilities complete and ready to use following final connection by Contractor.

C. Pour concrete foundation pad minimum 6" deep. The foundation pad should be a minimum of 12" wider than the roofline dimensions to allow a 6" concrete border on each side of the building roofline. Level the pad and install a bollard at each corner of the building to further protect the building from damage caused by traffic.

D. Provide 4-wire 208v/110v three-phase service to the concrete foundation pad. Coordinate stub-up location with prefabricated building layout plans.

E. Follow manufacturer's recommendations for safely unloading of prefabricated structure following delivery. Square the building on the pad and anchor.

F. Recommended concrete anchor is ½" x 4" galvanized or stainless steel, or comply with local codes – whichever is most stringent. Anchors are provided by site-contractor.

G. Make final electrical connections and clean the work area.

END OF SECTION

SECTION 16060

GROUNDING AND BONDING

PART 1 – GENERAL

1.01 SUMMARY

A. This Section includes methods and materials for grounding systems and equipment.

1.02 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Field quality-control test reports.

1.03 QUALITY ASSURANCE

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

B. Comply with UL 467 for grounding and bonding materials and equipment.

PART 2 – PRODUCTS

2.01 CONDUCTORS

A. Insulated Conductors: Copper wire or cable insulated for 600 V unless otherwise required by applicable Code or authorities having jurisdiction.

B. Bare Copper Conductors:

1. Solid Conductors: ASTM B 3.

2. Stranded Conductors: ASTM B 8.

3. Tinned Conductors: ASTM B 33.

4. Bonding Cable: 28 kcmil, 14 strands of No. 17 AWG conductor, 1/4 inch in diameter.

5. Bonding Conductor: No. 4 or No. 6 AWG, stranded conductor.

6. Bonding Jumper: Copper tape, braided conductors, terminated with copper ferrules; 1-5/8 inches wide and 1/16 inch thick.

7. Tinned Bonding Jumper: Tinned-copper tape, braided conductors, terminated with copper ferrules; 1-5/8 inches wide and 1/16 inch thick.

2.02 CONNECTORS

A. Listed and labeled by a nationally recognized testing laboratory acceptable to authorities having jurisdiction for applications in which used, and for specific types, sizes, and combinations of conductors and other items connected.

B. Bolted Connectors for Conductors and Pipes: Copper or copper alloy, bolted pressure-type, with at least two bolts.

1. Pipe Connectors: Clamp type, sized for pipe.

C. Welded Connectors: Exothermic-welding kits of types recommended by kit manufacturer for materials being joined and installation conditions.

2.03 GROUNDING ELECTRODES

A. Ground Rods: Copper-clad; 3/4 inch by 10 feet in diameter.

PART 3 – EXECUTION

3.01 APPLICATIONS

A. Conductors: Install solid conductor for No. 8 AWG and smaller, and stranded conductors for No. 6 AWG and larger, unless otherwise indicated.

B. Underground Grounding Conductors: Install bare copper conductor, No. 2/0 AWG minimum. Bury at least 24 inches below grade.

C. Isolated Grounding Conductors: Green-colored insulation with continuous yellow stripe. On feeders with isolated ground, identify grounding conductor where visible to normal inspection, with alternating bands of green and yellow tape, with at least three bands of green and two bands of yellow.

D. Conductor Terminations and Connections:

1. Pipe and Equipment Grounding Conductor Terminations: Bolted connectors.

2. Underground Connections: Welded connectors, except at test wells and as otherwise indicated.

3. Connections to Ground Rods at Test Wells: Bolted connectors.

4. Connections to Structural Steel: Welded connectors.

3.02 EQUIPMENT GROUNDING

A. Install insulated equipment grounding conductors with the following items, in addition to those required by NFPA 70:

1. Feeders and branch circuits.

2. Three-phase motor and appliance branch circuits.

3. Flexible raceway runs.

4. Armored and metal-clad cable runs.

5. Busway Supply Circuits: Install insulated equipment grounding conductor from grounding bus in the switchgear, switchboard, or distribution panel to equipment grounding bar terminal on busway.

3.03 INSTALLATION

A. Grounding Conductors: Route along shortest and straightest paths possible, unless otherwise indicated or required by Code. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.

B. Ground Rods: Drive rods until tops are 2 inches below finished floor or final grade, unless otherwise indicated.

1. Interconnect ground rods with grounding electrode conductor below grade and as otherwise indicated. Make connections without exposing steel or damaging coating, if any.

2. For grounding electrode system, install at least three rods spaced at least one-rod length from each other and located at least the same distance from other grounding electrodes, and connect to the service grounding electrode conductor.

C. Test Wells: Ground rod driven through drilled hole in bottom of handhole. Handholes are specified in Division 2 Section "Underground Ducts and Utility Structures," and shall be at least 12 inches deep, with cover.

1. Test Wells: Install at least one test well for each service, unless otherwise indicated. Install at the ground rod electrically closest to service entrance. Set top of test well flush with finished grade or floor.

D. Bonding Straps and Jumpers: Install in locations accessible for inspection and maintenance, except where routed through short lengths of conduit.

1. Bonding to Structure: Bond straps directly to basic structure, taking care not to penetrate any adjacent parts.

2. Bonding to Equipment Mounted on Vibration Isolation Hangers and Supports: Install so vibration is not transmitted to rigidly mounted equipment.

3. Use exothermic-welded connectors for outdoor locations, but if a disconnect-type connection is required, use a bolted clamp.

E. Grounding and Bonding for Piping:

1. Metal Water Service Pipe: Install insulated copper grounding conductors, in conduit, from building's main service equipment, or grounding bus, to main metal water service entrances to building. Connect grounding conductors to main metal water service pipes, using a

bolted clamp connector or by bolting a lug-type connector to a pipe flange, using one of the lug bolts of the flange. Where a dielectric main water fitting is installed, connect grounding conductor on street side of fitting. Bond metal grounding conductor conduit or sleeve to conductor at each end.

2. Water Meter Piping: Use braided-type bonding jumpers to electrically bypass water meters. Connect to pipe with a bolted connector.

3. Bond each aboveground portion of gas piping system downstream from equipment shutoff valve.

F. Bonding Interior Metal Ducts: Bond metal air ducts to equipment grounding conductors of associated fans, blowers, electric heaters, and air cleaners. Install tinned bonding jumper to bond across flexible duct connections to achieve continuity.

3.04 FIELD QUALITY CONTROL

A. Perform the following tests and inspections and prepare test reports:

1. After installing grounding system but before permanent electrical circuits have been energized, test for compliance with requirements.

2. Test completed grounding system at each location where a maximum ground-resistance level is specified, at service disconnect enclosure grounding terminal, and at ground test wells.

a. Measure ground resistance not less than two full days after last trace of precipitation and without soil being moistened by any means other than natural drainage or seepage and without chemical treatment or other artificial means of reducing natural ground resistance.

b. Perform tests by fall-of-potential method according to IEEE 81.

B. Report measured ground resistances that exceed the following values:

1. Power and Lighting Equipment or System with Capacity 500 kVA and Less: 10 ohms.

2. Power and Lighting Equipment or System with Capacity 500 to 1000 kVA: 5 ohms.

3. Power and Lighting Equipment or System with Capacity More Than 1000 kVA: 3 ohms.

C. Excessive Ground Resistance: If resistance to ground exceeds specified values, notify Architect promptly and include recommendations to reduce ground resistance.

END OF SECTION 16060

SECTION 16073

HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

PART 1 – GENERAL

1.01 SUMMARY

A. Section includes:

1. Hangers and supports for electrical equipment and systems.

2. Construction requirements for concrete bases.

1.02 PERFORMANCE REQUIREMENTS

A. Delegated Design: Design supports for multiple raceways, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.

B. Design supports for multiple raceways capable of supporting combined weight of supported systems and its contents.

C. Design equipment supports capable of supporting combined operating weight of supported equipment and connected systems and components.

D. Rated Strength: Adequate in tension, shear, and pullout force to resist maximum loads calculated or imposed for this Project, with a minimum structural safety factor of five times the applied force.

1.03 SUBMITTALS

A. Product Data: For steel slotted support systems.

B. Shop Drawings: Show fabrication and installation details and include calculations for the following:

1. Trapeze hangers. Include Product Data for components.

2. Steel slotted channel systems. Include Product Data for components.

3. Equipment supports.

C. Welding certificates.

1.04 QUALITY ASSURANCE

A. Welding: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."

B. Comply with NFPA 70.

PART 2 – PRODUCTS

2.01 SUPPORT, ANCHORAGE, AND ATTACHMENT COMPONENTS

A. Steel Slotted Support Systems: Comply with MFMA-4, factory-fabricated components for field assembly.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Allied Tube & Conduit.

b. Cooper B-Line, Inc.; a division of Cooper Industries.

c. ERICO International Corporation.

d. GS Metals Corp.

e. Thomas & Betts Corporation.

f. Unistrut; Tyco International, Ltd.

g. Wesanco, Inc.

2. Metallic Coatings: Hot-dip galvanized after fabrication and applied according to MFMA-4.

3. Nonmetallic Coatings: Manufacturer's standard PVC, polyurethane, or polyester coating applied according to MFMA-4.

4. Painted Coatings: Manufacturer's standard painted coating applied according to MFMA-4.

5. Channel Dimensions: Selected for applicable load criteria.

B. Raceway and Cable Supports: As described in NECA 1 and NECA 101.

C. Conduit and Cable Support Devices: [Steel] [Steel and malleable-iron] hangers, clamps, and associated fittings, designed for types and sizes of raceway or cable to be supported.

D. Support for Conductors in Vertical Conduit: Factory-fabricated assembly consisting of threaded body and insulating wedging plug or plugs for non-armored electrical conductors or cables in riser conduits. Plugs shall have number, size, and shape of conductor gripping pieces as required to suit individual conductors or cables supported. Body shall be malleable iron.

E. Structural Steel for Fabricated Supports and Restraints: ASTM A 36/A 36M, steel plates, shapes, and bars; black and galvanized.

F. Mounting, Anchoring, and Attachment Components: Items for fastening electrical items or their supports to building surfaces include the following:

1. Powder-Actuated Fasteners: Threaded-steel stud, for use in hardened portland cement concrete, steel, or wood, with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.

    a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

        1) Hilti Inc.

        2) ITW Ramset/Red Head; a division of Illinois Tool Works, Inc.

        3) MKT Fastening, LLC.

        4) Simpson Strong-Tie Co., Inc.; Masterset Fastening Systems Unit.

2. Mechanical-Expansion Anchors: Insert-wedge-type, zinc-coated steel, for use in hardened portland cement concrete with tension, shear, and pullout capacities appropriate for supported loads and building materials in which used.

    a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

        1) Cooper B-Line, Inc.; a division of Cooper Industries.

        2) Empire Tool and Manufacturing Co., Inc.

        3) Hilti Inc.

        4) ITW Ramset/Red Head; a division of Illinois Tool Works, Inc.

        5) MKT Fastening, LLC.

3. Concrete Inserts: Steel or malleable-iron, slotted support system units similar to MSS Type 18; complying with MFMA-4 or MSS SP-58.

4. Clamps for Attachment to Steel Structural Elements: MSS SP-58, type suitable for attached structural element.

5. Through Bolts: Structural type, hex head, and high strength. Comply with ASTM A 325.

6. Toggle Bolts: All-steel springhead type.

7. Hanger Rods: Threaded steel.

2.02 FABRICATED METAL EQUIPMENT SUPPORT ASSEMBLIES

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

B. Materials: Comply with requirements in Division 5 Section "Metal Fabrications" for steel shapes and plates.

PART 3 – EXECUTION

3.01 APPLICATION

A. Comply with NECA 1 and NECA 101 for application of hangers and supports for electrical equipment and systems except if requirements in this Section are stricter.

B. Maximum Support Spacing and Minimum Hanger Rod Size for Raceway: Space supports for EMT, IMC, and RMC as scheduled in NECA 1, where its Table 1 lists maximum spacings less than stated in NFPA 70. Minimum rod size shall be 1/4 inch in diameter.

C. Multiple Raceways or Cables: Install trapeze-type supports fabricated with steel slotted support system, sized so capacity can be increased by at least 25 percent in future without exceeding specified design load limits.

1. Secure raceways and cables to these supports with two-bolt conduit clamps.

3.02 SUPPORT INSTALLATION

A. Comply with NECA 1 and NECA 101 for installation requirements except as specified in this Article.

B. Strength of Support Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design load used for strength determination shall be weight of supported components plus 200 lb.

C. Mounting and Anchorage of Surface-Mounted Equipment and Components: Anchor and fasten electrical items and their supports to building structural elements by the following methods unless otherwise indicated by code:

1. To Wood: Fasten with lag screws or through bolts.

2. To New Concrete: Bolt to concrete inserts.

3. To Masonry: Approved toggle-type bolts on hollow masonry units and expansion anchor fasteners on solid masonry units.

4. To Existing Concrete: Expansion anchor fasteners.

D. Drill holes for expansion anchors in concrete at locations and to depths that avoid reinforcing bars.

3.03 INSTALLATION OF FABRICATED METAL SUPPORTS

A. Comply with installation requirements in Division 5 Section "Metal Fabrications" for site-fabricated metal supports.

B. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor electrical materials and equipment.

C. Field Welding: Comply with AWS D1.1/D1.1M.

3.04 CONCRETE BASES

A. Construct concrete bases of dimensions indicated but not less than 4 inches larger in both directions than supported unit, and so anchors will be a minimum of 10 bolt diameters from edge of the base.

B. Use 3000-psi 28-day compressive-strength concrete. Concrete materials, reinforcement, and placement requirements are specified in Division 3 Section "Cast-in-Place Concrete."

C. Anchor equipment to concrete base.

1. Place and secure anchorage devices. Use supported equipment manufacturer's setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

2. Install anchor bolts to elevations required for proper attachment to supported equipment.

3. Install anchor bolts according to anchor-bolt manufacturer's written instructions.

3.05 PAINTING

A. Touchup: Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting. Comply with SSPC-PA 1 requirements for touching up field-painted surfaces.

1. Apply paint by brush or spray to provide minimum dry film thickness of 2.0 mils.

B. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A 780.

END OF SECTION 16073

SECTION 16075

ELECTRICAL IDENTIFICATION

PART 1 – GENERAL

1.01 SUMMARY

A. Section Includes:

1. Identification for raceways.
2. Identification of power and control cables.
3. Identification for conductors.
4. Underground-line warning tape.
5. Instruction signs.
6. Equipment identification labels.

1.02 SUBMITTALS

A. Product Data: For each electrical identification product indicated.

1.03 QUALITY ASSURANCE

A. Comply with ANSI A13.1.

B. Comply with NFPA 70.

C. Comply with 29 CFR 1910.144 and 29 CFR 1910.145.

D. Comply with ANSI Z535.4 for safety signs and labels.

E. Adhesive-attached labeling materials, including label stocks, laminating adhesives, and inks used by label printers, shall comply with UL 969.

PART 2 – PRODUCTS

2.01 POWER RACEWAY IDENTIFICATION MATERIALS

A. Comply with ANSI A13.1 for minimum size of letters for legend and for minimum length of color field for each raceway size.

B. Colors for Raceways Carrying Circuits at 600 V or Less:

1. Black letters on an orange field.
2. Legend: Indicate voltage and system or service type.

C. Self-Adhesive Vinyl Labels for Raceways Carrying Circuits at 600 V or Less: Preprinted, flexible label laminated with a clear, weather- and chemical-resistant coating and matching wraparound adhesive tape for securing ends of legend label.

2.02 POWER AND CONTROL CABLE IDENTIFICATION MATERIALS

A. Comply with ANSI A13.1 for minimum size of letters for legend and for minimum length of color field for each raceway and cable size.

B. Self-Adhesive Vinyl Labels: Preprinted, flexible label laminated with a clear, weather- and chemical-resistant coating and matching wraparound adhesive tape for securing ends of legend label.

2.03 CONDUCTOR IDENTIFICATION MATERIALS

A. Color-Coding Conductor Tape: Colored, self-adhesive vinyl tape not less than 3 mils thick by 1 to 2 inches wide.

B. Self-Adhesive Vinyl Labels: Preprinted, flexible label laminated with a clear, weather- and chemical-resistant coating and matching wraparound adhesive tape for securing ends of legend label.

2.04 UNDERGROUND-LINE WARNING TAPE

A. Tape:

1. Recommended by manufacturer for the method of installation and suitable to identify and locate underground electrical [and communications]utility lines.

2. Printing on tape shall be permanent and shall not be damaged by burial operations.

3. Tape material and ink shall be chemically inert, and not subject to degrading when exposed to acids, alkalis, and other destructive substances commonly found in soils.

B. Color and Printing:

1. Comply with ANSI Z535.1 through ANSI Z535.5.

2. Inscriptions for Red-Colored Tapes: ELECTRIC LINE, HIGH VOLTAGE.

3. Inscriptions for Orange-Colored Tapes: TELEPHONE CABLE, CATV CABLE, COMMUNICATIONS CABLE, OPTICAL FIBER CABLE.

PART 3 – EXECUTION

3.01 INSTALLATION

A. Location: Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment.

B. Apply identification devices to surfaces that require finish after completing finish work.

C. Self-Adhesive Identification Products: Clean surfaces before application, using materials and methods recommended by manufacturer of identification device.

D. Attach signs and plastic labels that are not self-adhesive type with mechanical fasteners appropriate to the location and substrate.

E. System Identification Color-Coding Bands for Raceways and Cables: Each color-coding band shall completely encircle cable or conduit. Place adjacent bands of two-color markings in contact, side by side. Locate bands at changes in direction, at penetrations of walls and floors, at 50-foot maximum intervals in straight runs, and at 25-foot maximum intervals in congested areas.

F. Underground-Line Warning Tape: During backfilling of trenches install continuous underground-line warning tape directly above line at 6 to 8 inches below finished grade. Use multiple tapes where width of multiple lines installed in a common trench exceeds 16 inches overall.

1. Color-Coding for Phase and Voltage Level Identification, 600 V or Less: Use colors listed below for ungrounded feeder and branch-circuit conductors.

a. Color shall be factory applied or field applied for sizes larger than No. 8 AWG, if authorities having jurisdiction permit.

b. Colors for 208/120-V Circuits:

1) Phase A: Black.

2) Phase B: Red.

3) Phase C: Blue.

c. Colors for 480/277-V Circuits:

1) Phase A: Brown.

2) Phase B: Orange.

3) Phase C: Yellow.

G. Painted Identification: Comply with requirements in Division 9 painting Sections for surface preparation and paint application.

END OF SECTION 16075

SECTION 16100

ELECTRICAL PROVISIONS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.

1.02 ELECTRICAL GENERAL PROVISIONS

A. Electrical Contractor shall coordinate work with all other trades and equipment suppliers.

B. All work shall be done in accordance with the latest editions of National Electrical Code (NEC), State of Nevada codes, Washoe County and ordinances.

C. All electrical equipment shall be new and UL listed.

D. Contractor must visit the site to ascertain existing conditions prior to submitting bid.

E. Contractor shall assure that all electrical devices scheduled to remain, in or adjacent to areas of work, remain energized and shall reconnect any devices isolated by demolition work.

1.03 WORK NOT INCLUDED IN THIS SECTION

A. Telephone cabling and apparatus.

B. Data cabling and terminations.

C. Painting.

1.04 SHOP DRAWINGS

A. Contractor shall submit 5 copies of data on the following items for approval prior to start of work:

1. Circuit breakers.
2. Light Fixtures.
3. Raceway.
4. Disconnect switches.
5. Vaults and pullboxes.
6. 6. Security cameras and accessories devices.
7. Conductors & Cables

8. Any equipment as requested by Engineer or Owner.

PART 2 – PRODUCTS

2.01 MATERIALS AND EQUIPMENT

A. Branch Circuit Wire: Use copper; 600 volt; Type TW, THHN or THWN; solid to size #8 AWG.

B. Wire Connectors: Use "Scotch-Lok" or equal, insulated spring connectors for wire sizes up to #8 AWG.

C. Raceways:

1. Use rigid galvanized steel (RGS) in all areas.

2. Use electrical metallic tubing (EMT) indoors, concealed or exposed where protected.

3. Use flexible metallic steel only where approved by Engineer.

4. Use flexible weathertight conduit for connection to motors.

5. Use PVC Schedule 40 under slabs or below ground with RGS elbows and ground wire. RGS elbows shall be PVC coated or wrapped with 30 mil tape below grade in contact with soil.

D. Junction and Outlet Boxes: Use 16-gauge stamped, galvanized steel with screw covers, sized per NEC, in concealed locations only. Use cast metallic with screw hubs and gasketed screw covers, sized per NEC in exposed locations.

E. Pull Boxes: Shall be code gauge steel with screw covers and gray enamel finish. Size per NEC and use NEMA 1 or NEMA 3R as required.

F. Conduit Fittings: RGS fittings shall be galvanized N.P.T. type. Use insulated bushings where terminating in boxes. EMT fittings shall be insulated compression type. PVC fittings shall be one-piece, slip type with approved solvent.

G. Duplex Receptacles: NEMA 5-15R, specification grade, Hubbell #5262-I or equal with matching coverplate. See plans for special types.

H. Switches: 15 amp, 125/277 volt, SPST, specification grade, Hubbell #1221-I or equal with matching coverplate.

I. Molded Case Breakers: Use thermal magnetic molded case breakers of ratings indicated. Breakers shall match interrupting rating, style and manufacturer of existing units.

J. Concrete Vaults and Manholes: Provide watertight, precast concrete vaults and manholes in the types and sizes indicated with access knockouts for conduit or cable, cast iron manhole access cover and frame with machined bearing surfaces suitable for street loading, with pulling/lift irons, sump/drainage box and bolting inserts. Vaults and manholes shall be equipped with all required extension rings and bottom as required by grade conditions.

1. Provide 3,000-pound reinforced concrete for vaults and manholes, with lids as indicated.

2. Provide vault, manhole and handhole accessories including mastics, sealants, cable support brackets, and manhole/vault ladders as recommended by the fabricator.

3. Provide products by one of the following:

    a. Jensen Precast.

    b. Christy.

    c. Brooks.

    d. Forni.

PART 3 – EXECUTION

3.01 INSTALLATION

A. All wiring shall be concealed unless specifically noted or approved by Engineer.

B. Provide all required supports and hangers for electrical equipment and raceways. Do not support conduits from ductwork.

C. All fixtures and outlets shall be installed straight and plumb, parallel or at right angles to walls as indicated on drawings.

D. Install pull wires in all unused raceways.

3.02 TESTING

A. Contractor shall test all circuiting to assure all circuits are free of shorts or grounds.

B. Contractor shall test all electrical equipment for the Architect to demonstrate systems work as intended.

3.03 GUARANTEE/WARRANTY

A. The Contractor shall warranty all electrical equipment and workmanship for a period of one year from the date of final acceptance.

END OF SECTION 16100

SECTION 16120

CONDUCTORS AND CABLES

PART 1 – GENERAL

1.01 SUMMARY

A. This Section includes the following:

1. Building wires and cables rated 600 V and less.

2. Connectors, splices, and terminations rated 600 V and less.

3. Sleeves and sleeve seals for cables.

1.02 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Field quality-control test reports.

1.03 QUALITY ASSURANCE

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

B. Comply with NFPA 70.

PART 2 – PRODUCTS

2.01 CONDUCTORS AND CABLES

A. Copper Conductors: Comply with NEMA WC 70.

B. Conductor Insulation: Comply with NEMA WC 70 for Types THHN-THWN and XHHW.

C. Multiconductor Cable: Comply with NEMA WC 70 with ground wire.

2.02 CONNECTORS AND SPLICES

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. AFC Cable Systems, Inc.

2. Hubbell Power Systems, Inc.

3. O-Z/Gedney; EGS Electrical Group LLC.

4. 3M; Electrical Products Division.

5. Tyco Electronics Corp.

B. Description: Factory-fabricated connectors and splices of size, ampacity rating, material, type, and class for application and service indicated.

2.03 SLEEVES FOR CABLES

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

B. Cast-Iron Pipe Sleeves: Cast or fabricated "wall pipe," equivalent to ductile-iron pressure pipe, with plain ends and integral waterstop, unless otherwise indicated.

C. Coordinate sleeve selection and application with selection and application of firestopping specified in Division 7 Section "Through-Penetration Firestop Systems."

2.04 SLEEVE SEALS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Advance Products & Systems, Inc.

2. Calpico, Inc.

3. Metraflex Co.

4. Pipeline Seal and Insulator, Inc.

B. Description: Modular sealing device, designed for field assembly, to fill annular space between sleeve and cable.

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

2. Pressure Plates: Plastic. Include two for each sealing element.

3. Connecting Bolts and Nuts: Carbon steel with corrosion-resistant coating of length required to secure pressure plates to sealing elements. Include one for each sealing element.

PART 3 – EXECUTION

3.01 CONDUCTOR MATERIAL APPLICATIONS

A. Feeders: Copper. Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.

B. Branch Circuits: Copper. Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.

3.02 CONDUCTOR INSULATION AND MULTICONDUCTOR CABLE APPLICATIONS AND WIRING METHODS

A. Service Entrance: Type XHHW, single conductors in raceway.

B. Exposed Feeders: Type THHN-THWN, single conductors in raceway.

C. Feeders Concealed in Ceilings, Walls, Partitions, and Crawlspaces: Type THHN-THWN, single conductors in raceway.

D. Feeders Concealed in Concrete, below Slabs-on-Grade, and Underground: Type THHN-THWN, single conductors in raceway.

E. Exposed Branch Circuits, Including in Crawlspaces: Type THHN-THWN, single conductors in raceway.

F. Branch Circuits Concealed in Ceilings, Walls, and Partitions: Type THHN-THWN, single conductors in raceway.

G. Branch Circuits Concealed in Concrete, below Slabs-on-Grade, and Underground: Type THHN-THWN, single conductors in raceway.

H. Cord Drops and Portable Appliance Connections: Type SO, hard service cord with stainless-steel, wire-mesh, strain relief device at terminations to suit application.

I. Class 1 Control Circuits: Type THHN-THWN, in raceway.

J. Class 2 Control Circuits: Type THHN-THWN, in raceway.

3.03 INSTALLATION OF CONDUCTORS AND CABLES

A. Conceal cables in finished walls, ceilings, and floors, unless otherwise indicated.

B. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.

C. Use pulling means; including fish tape, cable, rope, and basket-weave wire/cable grips, that will not damage cables or raceway.

D. Install exposed cables parallel and perpendicular to surfaces of exposed structural members, and follow surface contours where possible.

E. Support cables according to Division 16 Section "Electrical Supports and Seismic Restraints."

F. Identify and color-code conductors and cables according to Division 16 Section "Electrical Identification."

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

H. Make splices and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than unspliced conductors.

I. Wiring at Outlets: Install conductor at each outlet, with at least 6 inches of slack.

3.04 SLEEVE INSTALLATION FOR ELECTRICAL PENETRATIONS

A. Coordinate sleeve selection and application with selection and application of firestopping.

B. Concrete Slabs and Walls: Install sleeves for penetrations unless core-drilled holes or formed openings are used. Install sleeves during erection of slabs and walls.

C. Fire-Rated Assemblies: Install sleeves for penetrations of fire-rated floor and wall assemblies unless openings compatible with firestop system used are fabricated during construction of floor or wall.

D. Cut sleeves to length for mounting flush with both wall surfaces.

E. Extend sleeves installed in floors 2 inches above finished floor level.

F. Size pipe sleeves to provide 1/4-inch annular clear space between sleeve and cable unless sleeve seal is to be installed or unless seismic criteria require different clearance.

G. Seal space outside of sleeves with grout for penetrations of concrete and masonry and with approved joint compound for gypsum board assemblies.

H. Interior Penetrations of Non-Fire-Rated Walls and Floors: Seal annular space between sleeve and cable, using joint sealant appropriate for size, depth, and location of joint according to Division 7 Section "Joint Sealants."

I. Fire-Rated-Assembly Penetrations: Maintain indicated fire rating of walls, partitions, ceilings, and floors at cable penetrations. Install sleeves and seal with firestop materials according to Division 7 Section "Through-Penetration Firestop Systems."

J. Roof-Penetration Sleeves: Seal penetration of individual cables with flexible boot-type flashing units applied in coordination with roofing work.

K. Aboveground Exterior-Wall Penetrations: Seal penetrations using sleeves and mechanical sleeve seals. Size sleeves to allow for 1-inch annular clear space between pipe and sleeve for installing mechanical sleeve seals.

L. Underground Exterior-Wall Penetrations: Install cast-iron "wall pipes" for sleeves. Size sleeves to allow for 1-inch annular clear space between cable and sleeve for installing mechanical sleeve seals.

3.05 SLEEVE-SEAL INSTALLATION

A. Install to seal underground exterior-wall penetrations.

B. Use type and number of sealing elements recommended by manufacturer for cable material and size. Position cable in center of sleeve. Assemble mechanical sleeve seals and install in annular space between cable and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make watertight seal.

3.06 FIRESTOPPING

A. Apply firestopping to electrical penetrations of fire-rated floor and wall assemblies to restore original fire-resistance rating of assembly according to Division 7 Section "Through-Penetration Firestop Systems."

3.07 FIELD QUALITY CONTROL

A. Perform tests and inspections and prepare test reports.

B. Tests and Inspections:

1. After installing conductors and cables and before electrical circuitry has been energized, test service entrance and feeder conductors, and conductors feeding the following critical equipment and services for compliance with requirements.

2. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.

C. Test Reports: Prepare a written report to record the following:

1. Test procedures used.

2. Test results that comply with requirements.

3. Test results that do not comply with requirements and corrective action taken to achieve compliance with requirements.

D. Remove and replace malfunctioning units and retest as specified above.

END OF SECTION 16120

SECTION 16130

RACEWAYS AND BOXES

PART 1 – GENERAL

1.01 SUMMARY

A. This Section includes raceways, fittings, boxes, enclosures, and cabinets for electrical wiring.

B. See Division 2 Section "Underground Ducts and Utility Structures" for exterior ductbanks and manholes, and underground handholes, boxes, and utility construction.

1.02 SUBMITTALS

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

B. Shop Drawings: For custom enclosures and cabinets. Include plans, elevations, sections, details, and attachments to other work.

1.03 QUALITY ASSURANCE

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

B. Comply with NFPA 70.

PART 2 – PRODUCTS

2.01 METAL CONDUIT AND TUBING

A. Rigid Steel Conduit: ANSI C80.1.

B. IMC: ANSI C80.6.

C. EMT: ANSI C80.3.

D. FMC: Zinc-coated steel.

E. LFMC: Flexible steel conduit with PVC jacket.

F. Fittings for Conduit (Including all Types and Flexible and Liquidtight), EMT, and Cable: NEMA FB 1; listed for type and size raceway with which used, and for application and environment in which installed.

2.02 NONMETALLIC CONDUIT AND TUBING

A. ENT: NEMA TC 13.

B. RNC: NEMA TC 2, Type EPC-40-PVC, unless otherwise indicated.

C. LFNC: UL 1660.

D. Fittings for ENT and RNC: NEMA TC 3; match to conduit or tubing type and material.

E. Fittings for LFNC: UL 514B.

2.03 METAL WIREWAYS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Cooper B-Line, Inc.

2. Hoffman.

3. Square D; Schneider Electric.

C. Description: Sheet metal sized and shaped as indicated, NEMA 250, Type 3R, unless otherwise indicated.

D. Fittings and Accessories: Include couplings, offsets, elbows, expansion joints, adapters, hold-down straps, end caps, and other fittings to match and mate with wireways as required for complete system.

E. Wireway Covers: Hinged type.

F. Finish: Manufacturer's standard enamel finish.

2.04 NONMETALLIC WIREWAYS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Hoffman.

2. Lamson & Sessions; Carlon Electrical Products.

B. Description: PVC plastic, extruded and fabricated to size and shape indicated, with snap-on cover and mechanically coupled connections with plastic fasteners.

C. Fittings and Accessories: Include couplings, offsets, elbows, expansion joints, adapters, hold-down straps, end caps, and other fittings to match and mate with wireways as required for complete system.

2.05 SURFACE RACEWAYS

A. Surface Metal Raceways: Galvanized steel with snap-on covers. [Manufacturer's standard enamel finish in color selected by owner.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Thomas & Betts Corporation.

b. Walker Systems, Inc.; Wiremold Company (The).

c. Wiremold Company (The); Electrical Sales Division.

B. Surface Nonmetallic Raceways: Two-piece construction, manufactured of rigid PVC with texture and color selected by owner from manufacturer's standard colors.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Butler Manufacturing Company; Walker Division.

b. Enduro Systems, Inc.; Composite Products Division.

c. Hubbell Incorporated; Wiring Device-Kellems Division.

d. Lamson & Sessions; Carlon Electrical Products.

e. Panduit Corp.

f. Walker Systems, Inc.; Wiremold Company (The).

g. Wiremold Company (The); Electrical Sales Division.

2.06 BOXES, ENCLOSURES, AND CABINETS

A. Sheet Metal Outlet and Device Boxes: NEMA OS 1.

B. Cast-Metal Outlet and Device Boxes: NEMA FB 1, ferrous alloy, Type FD, with gasketed cover.

C. Nonmetallic Outlet and Device Boxes: NEMA OS 2.

D. Small Sheet Metal Pull and Junction Boxes: NEMA OS 1.

E. Cast-Metal Access, Pull, and Junction Boxes: NEMA FB 1, galvanized, cast iron with gasketed cover.

F. Hinged-Cover Enclosures: NEMA 250, Type 3R, with continuous-hinge cover with flush latch, unless otherwise indicated.

1. Metal Enclosures: Steel, finished inside and out with manufacturer's standard enamel.

2. Nonmetallic Enclosures: Plastic.

G. Cabinets:

1. NEMA 250, Type 3R, galvanized-steel box with removable interior panel and removable front, finished inside and out with manufacturer's standard enamel.

2. Hinged door in front cover with flush latch and concealed hinge.

3. Key latch to match panelboards.

4. Metal barriers to separate wiring of different systems and voltage.

5. Accessory feet where required for freestanding equipment.

PART 3 – EXECUTION

3.01 RACEWAY APPLICATION

A. Outdoors: Apply raceway products as specified below, unless otherwise indicated:

1. Exposed Conduit: Rigid steel conduit.

2. Concealed Conduit, Aboveground: Rigid steel conduit.

3. Underground Conduit: RNC, Type EPC-40 PVC, direct buried.

4. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): LFMC.

5. Boxes and Enclosures, Aboveground: NEMA 250, Type 3R.

B. Comply with the following indoor applications, unless otherwise indicated:

1. Exposed, Not Subject to Physical Damage: EMT.

2. Exposed, Not Subject to Severe Physical Damage: EMT.

3. Exposed and Subject to Severe Physical Damage: Rigid steel conduit. Includes raceways in the following locations:

4. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): FMC, except use LFMC in damp or wet locations.

5. Damp or Wet Locations: Rigid steel conduit.

6. Boxes and Enclosures: NEMA 250, Type 1, except use NEMA 250, Type 4, stainless steel in damp or wet locations.

C. Minimum Raceway Size: 3/4-inch trade size.

D. Raceway Fittings: Compatible with raceways and suitable for use and location.

1. Rigid and Intermediate Steel Conduit: Use threaded rigid steel conduit fittings, unless otherwise indicated.

3.02 INSTALLATION

A. Comply with NECA 1 for installation requirements applicable to products specified in Part 2 except where requirements on Drawings or in this Article are stricter.

B. Keep raceways at least 6 inches away from parallel runs of flues and steam or hot-water pipes. Install horizontal raceway runs above water and steam piping.

C. Complete raceway installation before starting conductor installation.

D. Support raceways as specified in Division 16 Section "Electrical Supports and Seismic Restraints."

E. Arrange stub-ups so curved portions of bends are not visible above the finished slab.

F. Install no more than the equivalent of three 90-degree bends in any conduit run except for communications conduits, for which fewer bends are allowed.

G. Conceal conduit and EMT within finished walls, ceilings, and floors, unless otherwise indicated.

H. Raceways Embedded in Slabs:

1. Run conduit larger than 1-inch trade size, parallel or at right angles to main reinforcement. Where at right angles to reinforcement, place conduit close to slab support.

2. Arrange raceways to cross building expansion joints at right angles with expansion fittings.

3. Change from ENT to RNC, Type EPC-40-PVC, rigid steel conduit, or IMC before rising above the floor.

I. Raceway Terminations at Locations Subject to Moisture or Vibration: Use insulating bushings to protect conductors, including conductors smaller than No. 4 AWG.

J. Install pull wires in empty raceways. Use polypropylene or monofilament plastic line with not less than 200-lb tensile strength. Leave at least 12 inches of slack at each end of pull wire.

K. Raceways for Optical Fiber and Communications Cable: Install as follows:

1. 3/4-Inch Trade Size and Smaller: Install raceways in maximum lengths of 50 feet.

2. 1-Inch Trade Size and Larger: Install raceways in maximum lengths of 75 feet.

3. Install with a maximum of two 90-degree bends or equivalent for each length of raceway unless Drawings show stricter requirements. Separate lengths with pull or junction boxes or terminations at distribution frames or cabinets where necessary to comply with these requirements.

L. Install raceway sealing fittings at suitable, approved, and accessible locations and fill them with listed sealing compound. For concealed raceways, install each fitting in a flush steel box with a blank cover plate having a finish similar to that of adjacent plates or surfaces. Install raceway sealing fittings at the following points:

1. Where conduits pass from warm to cold locations, such as boundaries of refrigerated spaces.

2. Where otherwise required by NFPA 70.

M. Expansion-Joint Fittings for RNC: Install in each run of aboveground conduit that is located where environmental temperature change may exceed 30 deg F, and that has straight-run length that exceeds 25 feet.

1. Install expansion-joint fittings for each of the following locations, and provide type and quantity of fittings that accommodate temperature change listed for location:

a. Outdoor Locations Not Exposed to Direct Sunlight: 125 deg F temperature change.

b. Outdoor Locations Exposed to Direct Sunlight: 155 deg F temperature change.

1. Install fitting(s) that provide expansion and contraction for at least 0.00041 inch per foot of length of straight run per deg F of temperature change.
2. Install each expansion-joint fitting with position, mounting, and piston setting selected according to manufacturer's written instructions for conditions at specific location at the time of installation.

N. Flexible Conduit Connections: Use maximum of 72 inches of flexible conduit for equipment subject to vibration, noise transmission, or movement; and for transformers and motors.

1. Use LFMC in damp or wet locations subject to severe physical damage.

2. Use LFMC or LFNC in damp or wet locations not subject to severe physical damage.

3.03 INSTALLATION OF UNDERGROUND CONDUIT

A. Direct-Buried Conduit:

1. Excavate trench bottom to provide firm and uniform support for conduit. Prepare trench bottom as specified in Division 2 Section "Earthwork" for pipe less than 6 inches in nominal diameter.

2. Install backfill as specified in Division 2 Section "Earthwork."

3. After installing conduit, backfill and compact. Start at tie-in point, and work toward end of conduit run, leaving conduit at end of run free to move with expansion and contraction as temperature changes during this process. Firmly hand tamp backfill around conduit to provide maximum supporting strength. After placing controlled backfill to within 12 inches of finished grade, make final conduit connection at end of run and complete backfilling with normal compaction as specified in Division 2 Section "Earthwork."

4. Install manufactured rigid steel conduit elbows for stub-ups at poles and equipment and at building entrances through the floor.

   a. encase coupling with 3 inches of concrete.

   b. For stub-ups at equipment mounted on outdoor concrete bases, extend steel conduit horizontally a minimum of 60 inches from edge of equipment pad or foundation. Install insulated grounding bushings on terminations at equipment.

5. Warning Planks: Bury warning planks approximately 12 inches above direct-buried conduits, placing them 24 inches o.c. Align planks along the width and along the centerline of conduit.

END OF SECTION 16130

Forms

(to be used following award of bid)

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

PROJECTTITLE
BID #
PWP#

THIS CONTRACT made and entered into on this ___ day of MONTH, 20____, 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 **CONTRACTOR,** 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 **COST** 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 Agreement, Contractor agrees not to discriminate against any employee or applicant because of race, creed, color, national origin, disability, sex, sexual orientation or age. Such agreement shall include, but not be limited to, the following: recruitment or recruitment advertising, rates or pay or other forms of compensation, and selection. 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 Two Hundred Fifty Thousand Dollars ($250,000) or more, or when required by the Supplementary Conditions. If a Change Order causes a Contract to exceed Two Hundred Fifty Thousand Dollars ($250,000), 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.

The Remainder of this Section (Section 8) ☐ IS ☐ IS NOT Applicable to this contract):

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. 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.

10. 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.

11. 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	CONTRACTOR:
CITY OF SPARKS	_____
431 PRATER WAY	_____
PO BOX 857	_____
SPARKS, NV 89432-0857	_____

12. 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.

13. 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.

14. 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.

15. 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."

16. 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.

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.

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, employment-related practices, 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.

Any failure by the Contractor to comply with reporting provisions of the policies shall not affect its obligations to the additional insureds.

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.

Separation of Insureds
Contractor's insurance shall apply separately to each insured against whom a claim is made or suit is brought, except with respect to the limits of the insurer's liability.

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
A policy form or endorsement is required confirming coverage for all required additional insureds. The endorsement for CGL shall be at least as broad as the unmodified ISO additional insured endorsement CG 20 10 11/85 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.

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.

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.

Workers' Compensation and Employer's Liability
Contractor shall carry and maintain workers' compensation and employer's liability insurance as required

by NRS 616B.627 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.

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 per occurrence 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 with a minimum of three (3) years reporting of claims 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.

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.

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 on the Insurance Commissioner's approved but not admitted list.

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.

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 of 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.
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.

17. 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) $_____ 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.

18. 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.

19. 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.

20. 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.

21. 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.

22. 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.

23. 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.

24. 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.

25. 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.

26. 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.

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.

_____	CITY OF SPARKS, NEVADA
(Vendor)	A Municipal Corporation
By: _____	By:_____
	Geno R. Martini, Mayor
_____	
(Title)	
APPROVED AS TO FORM	ATTEST:
_____	_____
City Attorney	Teresa Gardner, 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 (**CONTRACTOR NAME)** hereinafter designated as the "Principal" a contract for Bid # **BID NUMBER**, PWP # **PWP NUMBER**, for the **PROJECT 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 (**WRITTEN COST)** dollars ($_____), 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 (**WRITTEN COST)** dollars ($_____) 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 **CONTRACTOR**, hereinafter designated as the "Principal" a Contract for Bid # **BID NUMBER**, PWP # **PWP NUMBER**, for the **PROJECT 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 **WRITTEN AMOUNT** dollars ($_____), 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 OBLICATION 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 _____