

**NOTICE TO CONTRACTORS**  
**CARSON CITY PURCHASING AND CONTRACTS**  
**201 NORTH CARSON STREET, SUITE 3**  
**CARSON CITY, NEVADA 89701**  
**775-283-7137 / FAX 775-887-2107**  
<http://www.carson.org/Index.aspx?page=998>



**ADVERTISED BID #1011-242**  
**BID TITLE "Carson City Gateway Signage Project"**  
**Labor Commissioner PWP# CC-2011-299**  
**Public Works Project No. 3.0731**  
**Engineer's Estimate: \$390,000**  
**PREPARED DATE: July 21, 2011**  
**Federal Project No. SP-000M(146)      NDOT Project No. 73539**

**PLEASE NOTE:** Carson City has extensively revised these Contract Documents and all Bidders are advised to read these documents thoroughly before submitting a bid.

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## SUMMARY

Carson City is accepting sealed bids for all labor, materials, tools and equipment necessary for the above referenced Project. The Project consists of construction of three masonry gateway entry signs at three entry points to Carson City. Work includes but is not limited to site preparation; defining the limits of work; erosion and storm water control; traffic control (including traffic control plans if required); clearing and grubbing; minor demolition and removal; grading; subsoil preparation; placing and compacting engineered fill; miscellaneous drainage and erosion control improvements; forming and accessories for structural concrete; placing, curing, and finishing structural concrete; installing gateway sign face; installing stone veneer and precast concrete caps, talus slope treatments and landscape boulders; soil preparation, seeding, and restoration; rock retaining wall; and solar powered electrical systems and lighting improvements. Project includes all common phases of construction customarily associated with this type of project. Sealed bids must be submitted in accordance with the bid documents, drawings and specifications related hereto.

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**CONTRACTOR'S LICENSE:** Carson City has determined that the responsive bidder must possess a minimum of a Class A Contractor's license issued by the Nevada State Contractor's Board at the time of the bid.

**BID DOCUMENTS** may be obtained as follows and the cost is non-refundable.

You may download this Bid Document, excluding the drawings, and a pdf version of the Bid Bond and Bid Proposal to prepare your bid from the Carson City website <http://www.carson.org/Index.aspx?page=998>.

**Downloading this bid document from the website does not put you on the plan holders list. You must click the link at the bottom of the page and provide your information to add your company name to the plan holders list.**

You may purchase the drawings separately from the following businesses, please call ahead to place your order.

Nevada Blue, 3246 North Carson Street, Carson City, NV 89706 (775) 883-6011 [www.nvblue.com](http://www.nvblue.com)

OSI, Inc., 4750 Longley Lane, Ste 103, Reno, NV 89502 (775) 827-4343 [www.osireno.com](http://www.osireno.com)

Reno Builder's Exchange, 634 Ryland Street, Reno NV 89502 (775) 786-4468 [www.renobuildersx.com](http://www.renobuildersx.com)

Sierra Contractor's Source, 500 Ryland Street, Reno NV (775)329-7222 [www.scsplanroom.com](http://www.scsplanroom.com)

**INSPECTION OF BID DOCUMENTS:** All documents related hereto may be viewed at the following locations:

**CARSON CITY PURCHASING AND CONTRACTS DEPARTMENT**, 201 North Carson Street, Suite 3, Carson City, Nevada 89701.

**ADDENDA:** All addenda are posted on Carson City's website <http://www.carson.org/Index.aspx?page=998>. It is each bidder's responsibility to ensure that they have received all addenda prior to submission of their sealed bid.

**INFORMAL PRE-BID CONFERENCE** will be held on August 11, 2011 at the Conference Room located at 3505 Butti Way, Carson City, Nevada and will commence promptly at 10:00 a.m. Attendance is not required to bid on this project.

**SEALED BIDS** must be submitted in a sealed envelope which shall be clearly marked with title and number of this Bid Document to Carson City Purchasing and Contracts Department, 201 North Carson Street, Suite 3, Carson City, Nevada 89701, by not later than 10:00a.m. on August 24, 2011. Bids received after the date and time set for receipt will be **REJECTED** and returned to the bidder unopened.

**BID OPENING** will be held publicly at 10:10 a.m. on August 24, 2011 at 201 North Carson Street, Suite 3, Carson City, Nevada 89701. Bidders, their representatives, and all other interested persons may be present during the bid opening.

A tabulation of the **BID PROPOSAL** will be posted on Carson City's website within 48 hours.

**AWARD RECOMMENDATION** will be made by the Carson City Purchasing and Contracts Department. You are encouraged to visit the City's website for that recommendation or contact Kim Belt at [KBelt@carson.org](mailto:KBelt@carson.org) for the recommendation.

**NOTICE OF PROTEST OF AWARD OF CONTRACT** must be submitted in writing to Carson City Purchasing and Contract within five (5) working days of the **BID OPENING** and must be in compliance with Nevada Revised Statute (NRS) 338.

**BID AWARD** will be made by the Carson City Regional Transportation Commission and is scheduled for Wednesday September 14, 2011, and their decision is final. The Carson City Regional Transportation Commission meeting will be held in the Sierra Room of the Carson City Community Center, 851 East William Street, Carson City, Nevada 89701 beginning at 4:30 p.m. immediately following the CAMPO meeting.

**PRICES** must be quoted FOB Carson City, Nevada and are valid for sixty (60) calendar days after the **BID OPENING**.

Signature in Project File

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Kim Belt, Purchasing and Contracts Manager

Signature in Project File

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Andrew Burnham, Public Works Director

Signature in Project File

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Darren Schulz, Deputy Public Works Director



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# PROJECT COORDINATION

## CORRESPONDENCE AND/OR COMMUNICATIONS:

The provisions of this contract shall be approved by the governing body of the City, and the normal lines of communications shall be between the following persons and the authorized representative of the Contractor:

- A. Contract Administrator**  
Kim Belt, Purchasing and Contracts Manager  
Carson City Purchasing and Contracts  
201 North Carson Street, Suite 3  
Carson City, Nevada 89701  
775-283-7137  
FAX 775-887-2107  
[KBelt@carson.org](mailto:KBelt@carson.org)
  
- B. Owner's Representative**  
Jeff Sharp, City Engineer  
Carson City Public Works Department  
3505 Butti Way  
Carson City, Nevada 89701  
775-283-7084  
FAX No. 775-887-2112  
[JSharp@carson.org](mailto:JSharp@carson.org)
  
- C. Construction Manager**  
As designated by Public Works
  
- D. Design Consultants**  
Paul Kuhn, Senior Associate  
Winston Associates, Inc.  
4696 Broadway, Boulder, CO 80304  
(303) 440-9200  
[pmkuhn@winstonassociates.com](mailto:pmkuhn@winstonassociates.com)

**NOTE:** The City reserves the right to appoint a substitute designee for these positions at the City's discretion.

**END OF DOCUMENT**

# INSTRUCTIONS TO BIDDERS

## IB.1 BIDDING PROCEDURES

### A. Pre-bid Conference

If required, a Pre-bid Conference will be held at the time and place indicated on the Notice to Contractors. The purpose of this conference is to discuss the Project, prospective Bidders concerns, and key issues of the Project. Attendance is not mandatory unless otherwise indicated.

### B. Designated Contacts

The designated contact for questions pertaining to the Contract Documents, Specifications and/or Drawings is the designated Contract Administrator. All questions should be submitted in writing, and will receive a written response from the Contract Administrator.

### C. Contract Drawings

The Contract Drawings used for Bidding shall have the following title:

CONTRACT DRAWING TITLE: **CARSON CITY GATEWAY SIGNAGE PROJECT**

The Contract Drawings do not purport to show all the details of the Work. They are intended to illustrate the character and extent of the performance desired under the Contract; therefore, they may be supplemented or revised from time to time, as the Work progresses, by the Construction Manager. Drawing revisions and/or additional drawings or sketches will be made and furnished to the Contractor if they are deemed necessary to adequately illustrate the Work.

### D. Interpretations and Addenda

Bidder shall take no advantage of any apparent error or omission in this Bid Document. In the event the Bidder discovers such an error or omission, he/she shall immediately notify the City's Contract Administrator in writing or by email. Carson City will then make such corrections and interpretations as may be deemed necessary for fulfilling the intent of this Bid Document through the issuance of an Addendum. Any Addendum or clarification supplementing this Bid Document, the Drawings, and the Specifications, issued prior to the date and time set for the submittal of Bid Proposal shall be made part of the Contract.

If it becomes necessary to revise any part of this Bid Document, a written addendum will be provided to all plan holders. The City is not bound by any oral representations, clarifications, or changes made by Carson City employees, or representatives, unless such clarification or change is provided to all Bidders in written addendum form.

Addenda shall be sent by fax, e-mail or posted on the City's website to all who are known by the City to have received a complete set of Bid Documents (plan holders). No Addendum shall be issued by Carson City less than two (2) working days prior to the advertised date and time for Bid submittal.

Prior to submission of the Bid Proposal, each Bidder shall ascertain that he/she has received all Addenda issued. The Bidder shall acknowledge receipt of all Addenda by completing the acknowledgment space provided on the Bid Proposal.

### E. Bid Preparation and Submission

1. Bid proposals are to be submitted on the Bid Proposal provided and must be manually signed by pen by an officer or authorized agent (with attached power of attorney) of the Bidder. All figures must be written in ink or typewritten. Figures written in pencil or erasures are not acceptable. Any interlineation or alteration must be initialed in ink by a person authorized to bind the Bidder to a Contract. If the person making said interlineation or alteration is not the same person who signs the Bid Proposal, such person must write his/her signature and print his/her name and title on each page of the Bid Proposal where initials appear. Written delegation of signature authority to an agent acting on behalf of the Bidder must accompany the sealed Bid and cannot contain any language which states the Bidder retains final approval of acceptance of any of the terms, conditions, specifications and/or finalized Contract.
2. Each Bid shall be submitted in a sealed envelope and the envelope must be prominently marked on the lower left corner as follows:

# INSTRUCTIONS TO BIDDERS

SEALED BID

<b><u>BID TITLE:</u></b>	<b>CARSON CITY GATEWAY SIGNAGE PROJECT</b>
<b><u>BID NO.:</u></b>	<b>1011-242</b>
<b><u>SUBMISSION DEADLINE:</u></b>	<b>August 24, 2011, 10:00 a.m.</b>
<b><u>OPENING:</u></b>	<b>August 24, 2011, 10:10 a.m.</b>
<b><u>COMPANY NAME:</u></b>	_____

Carson City will not consider a Bid that fails to comply with the above stated requirements. Carson City will not be responsible for the premature opening of a Bid not properly addressed or identified. All Bids must be received prior to the date and time specified in the Notice to Contractors at the following address:

**Carson City Purchasing and Contracts Department  
201 North Carson Street, Suite 3  
Carson City, Nevada 89701**

3. If forwarded by mail, the sealed envelope containing the Bid must be enclosed in another envelope addressed as specified. Mailed Bids must be received by the Purchasing and Contracts Department prior to the closing date and time for receipt of Bids in order to receive consideration. Bids submitted by facsimile or email will not be accepted or considered.

## **F. Documents Necessary for Submittal**

The Bid Bond, Bid Proposal Summary, Bidder's Preference Certificate of Eligibility (if applicable) and any other documents required as defined in the Special Conditions all shall be included in the sealed envelope. **Do not return the entire spec book with the Bid.** Carson City will not consider a Bid received if there is an omission of or failure to complete any portion of the required documents at the time of the Bid Opening.

## **G. Bid Security**

1. Each Bid Proposal must be accompanied by a Cashier's check, Certified Check, or Bid Bond acceptable to Carson City in an amount equal to at least five percent (5%) of the Bidder's "Base Bid" Proposal. Said Bid Security shall be payable without condition to Carson City as a guarantee that the Bidder, if awarded the Contract, will promptly execute such Contract in accordance with the Bid Proposal and, in the manner and form required by the Bid Document, and will furnish the required PERFORMANCE and PAYMENT bonds. (Refer to Documents # 2151 and 2152). Should the Bidder refuse to enter into such Contract or fail to furnish such bonds, the amount of the Bid Security may be forfeited to the City as liquidated damages, not as penalty. All checks must indicate the Payee as "Carson City, Nevada" and reflect the Bid Title and Number. Failure to enclose a Bid guarantee with the sealed Bid will cause the Bid to be rejected and not considered.
2. Surety companies issuing bonds must be licensed to issue surety by the State of Nevada Insurance Division pursuant to NRS 683A.090 and issued by an appointed agent pursuant to NRS 683A.280. Bonds issued by an individual surety are not acceptable to the City.
3. The City will have the right to hold the Bid Security of Bidders to whom an award is being considered until either: (a) the Contract has been executed and bonds have been furnished, (b) the specified time has elapsed so that Bids may be withdrawn, or (c) all Bids have been rejected.

## **H. Quantities**

The quantities given in the Bid Document or indicated by the unit Bid items are approximate quantities and are intended to illustrate the Scope of Work. The Bidder shall be responsible for verifying the exact quantities involved each month through the measurement and payment provisions of the Bid Document.

## **I. Compensation**

The Total Bid Price shall cover all Work required by the Bid Document. All costs in connection with the proper and successful completion of the Work, including furnishing all materials, equipment, supplies, and appurtenances; providing all construction equipment, tools and temporary utilities; and performing all necessary labor and supervision to fully complete the Work, shall be included in the unit and lump sum prices Bid. All work not specifically set forth as a pay item in the Bid Proposal shall be considered a subsidiary obligation of the Bidder, and all costs in connection therewith shall be included in the prices Bid.

# INSTRUCTIONS TO BIDDERS

## J. Schedule of Values

The purpose of the Schedule of Values shall serve the City in two (2) distinct areas:

1. **PRIOR TO AWARD OF BID:** Carson City may request a Schedule of Values for any or all item(s) included in the Bid Proposal for the purpose of determining an unbalanced Bid. The analysis shall be conducted by the City.
2. **AFTER AWARD OF BID:** Carson City will request a Schedule of Values for any or all item(s) included in the Bid Proposal for the purpose of making partial payments to the Contractor.

Under no circumstances may any Bid item reflected as LUMP SUM or otherwise be increased or decreased as a result of the Lump Sum Bid breakdown analysis.

All prospective Bidders may be required to prepare a Schedule of Values, and it shall be the Bidder's responsibility to verify the quantities as shown on the Drawings before preparing his/her Bid. The schedule as shown on the Contract Drawings does not constitute a complete outline of the Work to be performed by the Contractor in accordance with the Contract Drawings and Specifications. This list is intended to include all major items, and the Bid computed therefrom will be the maximum compensation for all work and materials furnished by the Contractor in order to comply with the Contract Drawings and Specifications, whether or not indicated in the approximate quantities or pertaining to the items of Work listed therein.

## K. Validity of Bid

Carson City reserves the right to withhold award of the Contract for a period of sixty (60) days from the date of the Bid opening. The Bidder acknowledges in submitting his/her Bid that all prices listed in the Bid Proposal are valid for a period of not less than sixty (60) days from the date of the Bid Opening.

## L. Bidders Preference

Bidders submitting a proposal to a public body for a Public Work shall bear the responsibility to ascertain the relevancy of the "preference for certain contractors" referenced in NRS 338.147. Bidders claiming preference shall submit with their Bid Proposal the "Certificate of Eligibility" issued by the State of Nevada Contractor's Board as proof of Contractor's compliance with the provisions of NRS 338.147. Failure to submit the Certificate of Eligibility with your Bid shall result in a waiver of any Bidder preference.

**Note:** Pursuant to Subsection 8 of NRS 338.147, the provisions of Subsection 2 of NRS 338.147 do not apply to any Contract for a Public Work which is expected to cost less than \$250,000.

## M. Bidders Representation

Each Bidder by submitting its Bid represents that:

1. The Bidder, signing the Bid Response and submitting the bid represents that he/she has familiarized himself with the Notice to Contractors, Contract Drawings, Specifications, and Contract Documents and has found them fit and sufficient for the purpose of preparing his/her Bid. By submission of his/her Bid, he/she agrees to all the terms and conditions of the Bid Document and further agrees that no claim will be made against the City, the Construction Manager, or the Design Consultant for any damage that he/she or his/her subcontractors may have suffered due to the inadequacy of his/her Bid on account of any alleged errors, omissions, or other deficiencies in the Notice to Contractors, Drawings, Specifications, or Contract Documents supplied to him/her by the City.
2. The submission of a Bid shall constitute an acknowledgment upon which the City may rely that the Bidder has thoroughly examined and is familiar with the Bid Documents. The Bidder shall in no way be relieved from any obligation with respect to its proposal or to the Contract. No claim for additional compensation will be allowed which is based upon a lack of knowledge of the Contract Documents.
3. The Bidder has inspected the site(s) of the Work and is satisfied, by personal examination or by other means, of the locations of the proposed Work, of the actual conditions, including subsurface conditions, of and at the site(s) of the Work. If, during the course of its examinations, a Bidder finds facts or conditions which appear to be in conflict with the letter or spirit of the Bid Documents before submitting his/her bid, the Bidder shall request the City, in writing, to provide additional information and explanation.

# INSTRUCTIONS TO BIDDERS

4. Submission of a Bid by a Bidder shall constitute conclusive evidence that the Bidder has relied on his/her own examination of (1) the site of the Work, (2) access to the site, (3) all other data and matters requisite to the fulfillment of the Work and on its own knowledge of existing facilities on and in the vicinity of the site of the Work to be constructed under the Contract, (4) the conditions to be encountered, (5) the character, quality and scope of the proposed Work, (6) the quality and quantity of the materials to be furnished, and (7) the requirements of the Bid, the Drawings and Specifications. The Bidder is aware that soil classifications do not represent any particular stability or drainability characteristics, and are aware that water table levels can vary.
5. The information provided by the City is not intended to be a substitute for, or a supplement to, the independent verification by the Bidder to the extent such independent investigation of site conditions is deemed necessary or desirable by the Bidder.
6. The Bidder, by signing the Bid Proposal, agrees that all material and workmanship on this Project shall meet or exceed OSHA standards and NOSHA standards.

Bidder must be duly qualified and possess the classification(s) of contractor's license stipulated by the City for this particular Work and issued by the Nevada State Contractor's Board. Nevada Contractor's License type, number, expiration date and dollar limit must be indicated on the Bid Proposal. The Bidders and the successful Contractors and their subcontractors shall comply with all provisions of NRS Chapter 624 and Nevada Administrative Code, Chapter 624. Carson City will not consider any Bid that fails to comply with these requirements.

The successful Bidder must obtain a valid Carson City Business License within ten (10) days of the award of the Contract, or the Contractor will be declared in default of the contract.

## **N. Fair Employment Practices**

Pursuant to NRS 338.125, it is unlawful for any Contractor in connection with the performance of work under a contract with a public body, when payment of the contract price, or any part of such payment, is to be made from public money, to refuse to employ or to discharge from employment any person because of race, creed, color, national origin, sex, sexual preference, or age to discriminate against person with respect to hire, tenure, advancement, compensation or other terms, conditions, privileges of employment because of race, creed, color, national origin, sex, sexual preference or age.

## **O. Preferential Employment**

Pursuant to NRS 338.130, Preferential Employment in Construction of Public Works, "In all cases where persons are employed in the construction of public works, preference shall be given, the qualifications of the applicants being equal: First: To honorably discharged Army, Navy, Air Force, Marine Corps or Coast Guard soldiers of the United States who are citizens of the State of Nevada; Second: To citizens of the State of Nevada". If the provisions of NRS 338.130 are not complied with by the Contractor, this Contract shall be void, and any failure or refusal to comply with any of the provision of NRS 338.130 shall render this Contract void.

## **P. Subcontracting**

The Bidder agrees that he/she will perform work totaling at least Fifty per cent (50%) of the Bid amount and will not subcontract work totaling more than Fifty per cent (50%) of the Bid amount.

The Bidder shall be bound by and comply with NRS 338.141 to limit the practice of shopping for Bids and shall provide a Subcontractors Listing with the submission of their Bid. The form must have the spaces filled in for each subcontractor who will be paid an amount exceeding five percent (5%) of the Bid amount. Within two (2) hours after the opening of Bids, the bidders who submitted the three lowest Bids must submit a list of names of each subcontractor who will provide labor or a portion of the Work or improvement to the Contractor for which he/she will be paid an amount exceeding one percent (1%) of the Bid amount or Fifty Thousand Dollars (\$50,000), whichever is greater. Within twenty-four (24) hours of the Bid opening the Bidder who submitted the lowest Bid must submit a list of all subcontractors who will perform any work on the Contract, including their name, license number and classification, items of work to be performed and anticipated amount of the subcontract. If a bidder fails to submit such lists within the required time, his/her Bid shall be deemed non-responsive.

# INSTRUCTIONS TO BIDDERS

The bidder shall verify prior to submitting their Bid that all subcontractors specified are properly licensed. Substitutions of subcontractors specified in the Bid shall comply with the requirements of NRS 338.141.

Should no firms be indicated on the Subcontractor Lists, the Bidder represents that all personnel performing services under any phases, shall be carried on the Bidder's payroll.

Bidder agrees that if awarded the Contract, he/she will assume responsibility for acts or omissions of subcontractors and of persons either directly or indirectly employed by them, as they are responsible for the acts or omissions of persons directly employed by the Bidder. Nothing contained in the Bid Document shall create any contractual relationship between any subcontractor and the City.

Each Contractor engaged on a public works project shall report to the Labor Commissioner the name and address of each Subcontractor whom he/she engages for work on the project within ten (10) days after the Subcontractor commences work on the contract.

Substitutions for subcontractors listed in the Bid Proposal shall comply with the requirements of NRS 338.141.

## **Q. Site Information**

Where investigations of surface or subsurface conditions have been made by the City, in respect to foundations or other structural design for design purposes only, said information is available only for the convenience of bidders but are not a part of the Bid Documents. The City, Construction Manager, and Design Consultant assume no responsibility whatsoever as to the sufficiency of borings, or of the log of test borings or other investigations, or tests, or of the interpretations thereof; there is no guarantee, warranty, or representation, expressed or implied, that the conditions indicated thereby, in fact, exist or are representative of those existing throughout the work. Such information available to bidders is not to be construed in any way as a waiver of the other provisions of this paragraph and bidders must satisfy themselves through their own investigations as to the surface and subsurface conditions to be encountered at the Site.

## **IB.2. OPENING OF BIDS**

All Bids received at the designated time and place that comply with these requirements will be opened, publicly read aloud at the date, time and place set forth in the Notice to Contractors. Bidders, their representatives, and all other interested persons may be present at the opening and reading of Bids.

Any Bids received after the date and time set for receiving and opening Bids, as set forth in the Notice to Contractors and any Addendum, will not be considered. Any such Bids will be returned unopened to the Bidder.

## **A. Mistake in Bid**

A request for withdrawal of a Bid due to a purported error shall not be considered unless it is given in writing to the Contract Administrator by the Bidder within forty-eight (48) hours after opening of the bid. Any such request shall contain a full explanation of any purported error and shall be supported by the original calculations on which the Bid was computed, together with a certification and notarization thereon that such calculation is the original as prepared by the Bidder or his/her agent.

In the case of a difference between written words and figures, the amount stated in written words shall govern for a Lump Sum Bid.

In the case of a difference between Unit Price and the Extended Price, the Unit Price shall govern.

## **B. Withdrawal of Bid**

1. **Before Bid Opening** - A Bidder may request withdrawal of his/her, sealed Bid prior to the scheduled date and time of the scheduled Bid opening provided the request is submitted to the Contract Administrator's Office in writing or an authorized representative must present himself with proper identification to the Contract Administrator's Office and verbally request that the Bid be withdrawn.
2. **After Bid Opening** - No Bids may be withdrawn for a period of sixty (60) calendar days after the date and time of Bid opening, except as set forth in A above. All responsive and responsible Bids received are considered firm offers for the time period specified above and may be considered for award. The Bidder's offer will expire at the time specified above or upon acceptance by City, which occurs when the successful Bidder provides the bonds, insurance, and submits the signed Contract to the City for execution and the City executes the Contract.

# INSTRUCTIONS TO BIDDERS

## **IB.3 AWARD OF CONTRACT/REJECTION OF BIDS/DISQUALIFICATION OF BIDDERS**

### **A. Award of Contract**

Carson City will award the Contract pursuant to the provisions of Nevada State law including but not limited to:

- (a) Chapter 332 (Purchasing: Local Governments)
- (b) Chapter 338 (Public Works Projects)
- (c) Chapter 339 (Contractor's Bonds on Public Works)
- (d) Chapter 624 (Contractors).

### **B. Rejection of Bids**

The City reserves the right to waive any informality or irregularity in any Bid received, and to reject any or all Bids. In the case of rejection of all Bids, the City reserves the right to advertise for new Bids or to proceed to do the Work otherwise if, in the judgment of the Carson City Board of Supervisors or Carson City Regional Transportation Commission, it is in the best interest of the City.

### **C. Irregular Bid**

A Bid shall be considered irregular for the following reasons, any one or more of which may be cause for rejection:

1. If the Bid Proposal furnished by the City is not used or is altered.
2. If there are unauthorized additions, conditional or alternate Bids, or omissions or irregularities of any kind, which may tend to make the Bid incomplete, indefinite or ambiguous as to its meaning, or give the Bidder submitting the same a competitive advantage over other Bidders.
3. If the Bid submitted contains any erasures, interlineations, or other corrections unless each such correction is prepared and authenticated in acceptance with the provisions of Paragraph IB.1.E (1).

### **D. Unbalanced Bid**

If the Unit Bid Item prices and/or schedule of values of a prospective Bidder's Bid are obviously unbalanced, either in excess or below the reasonable cost analysis values, in the opinion of the Owner's Representative, the Bid may be rejected. All Bids with separately priced line items shall be analyzed to determine if the prices are unbalanced. A bid may be rejected if the City determines that the lack of balance poses an unacceptable risk to the City.

A Bid with unbalanced pricing may increase performance risk and could result in payment of unreasonably high prices. Unbalanced pricing exists when, despite an acceptable total evaluated price, the price of one or more bid items is significantly over or understated as indicated by the application of cost or price analysis techniques. The greatest risks associated with unbalanced pricing occur when:

1. Over pricing of startup work, mobilization, or early items of work (front end loading) would cause a bidder to receive substantial up-front payment;
2. Base quantities and option quantities are separate line items;
3. The quantities as bid are incorrect and the contract cost will be increased when quantities are corrected;
4. On items where the quantities may vary, if the anticipated variation in quantity would result in the lower Bidder not remaining as the low Bidder;

### **E. Disqualification of Bidders**

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:

1. The Bidder is not responsive or responsible;

# INSTRUCTIONS TO BIDDERS

2. The quality of the services, materials, equipment or labor offered does not conform to the approved Contract Drawings and specifications;
3. Evidence of collusion among prospective Bidders; (Participants in such collusion will receive no recognition as Bidders)
4. Lack of the contractor's license classification stipulated by Carson City for this Work;
5. More than one Bid for the same work from an individual, firm, or corporation under the same or different name;
6. Lack of competency, understanding of the scope of the Work, adequate machinery, plant and/or equipment as revealed by the requested experience or subcontractor information;
7. Unsatisfactory performance record as shown by past work for the City, judged from the standpoint of workmanship, progress, and quality of services/goods provided;
8. Uncompleted work which, in the judgment of the City, might hinder or prevent the prompt completion of additional work, if awarded;
9. Failure to pay or satisfactorily settle all bills due for labor and material on any contract(s);
10. Failure to comply with any requirements of the City;
11. Failure to list, as required, all subcontractors who will be employed by the Bidder;
12. Negative actions against the Contractor's license by the Nevada State Contractor's Board;
13. Any other reason determined, in good faith, to be in the best interest of the City.

## **IB.4 BID PROTESTS**

A Bidder may file a Notice of Protest regarding the awarding of the contract with the authorized representative designated by the public body within five (5) working days after the date the bids were opened by the public body or its authorized representative pursuant to the provisions of NRS 338.142.

## **IB.5 BID PREPARATION EXPENSES**

By accepting the Bid Proposal of the Bidder, the City assumes no obligation to reimburse the Bidder for Bid preparation expenses. No Bidder shall have any right or claim against the City for reimbursement of Bid preparation expenses.

## **IB.6 COLLUSION, DISCRIMINATION, AND/OR PRICE FIXING**

The Bidder certifies that any and all prices which he/she may charge under the terms of the Contract do not, and will not violate any existing federal, state or municipal laws or regulations concerning discrimination and/or price fixing. The Bidder agrees to indemnify, exonerate and hold Carson City harmless from liability for any such violation now and throughout the term of the Contract.

**END OF INSTRUCTIONS TO BIDDERS**

# BID PROPOSAL

## BID BOND

**KNOW ALL MEN BY THESE PRESENTS**, that I/We \_\_\_\_\_

as Principal, hereinafter called Contractor, and \_\_\_\_\_

a corporation duly organized under the laws of the State of Nevada, as Surety, hereinafter called the Surety, are held and firmly bound unto Carson City, Nevada a consolidated municipality of the State of Nevada, hereinafter called City, for the sum of \$ \_\_\_\_\_ Dollars

(state sum in words) \_\_\_\_\_

for the payment whereof Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

**WHEREAS**, the Principal has submitted a bid, identified as **BID # 1011-242** and titled "Carson City Gateway Signage Project".

**NOW, THEREFORE** if the City shall accept the bid of the Principal and the Principal shall enter into a contract with the City in Accordance with the terms of such bid, and give such bond or bonds as may be specified in the bidding or Bid 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 in the event of the failure of the Principal to enter such Contract and give such bond or bonds, if the Principal shall pay to the City the difference not to exceed the penalty hereof between the amount specified in said bid and such larger amount for which the City may in good faith contract with another party to perform work covered by said bid or an appropriate liquidated amount as specified in the Invitation for Bids then this obligation shall be null and void, otherwise to remain in full force and effect.

(Seal)	Executed on this ____ day of _____ 2011 Signature of Principal: _____ Title: _____ Firm: _____ Address: _____ City/State/Zip Code: _____ Written Name of Principal: _____ ATTEST NAME Signature of Notary: _____
--------	--

Subscribed and sworn before me this \_\_\_\_\_ day of \_\_\_\_\_ 2011  
 (printed name of notary) \_\_\_\_\_ Notary Public for the State of \_\_\_\_\_

Claims Under this Bond May be Addressed to:	
Name of Surety	
Address	
City	
State/Zip Code	
Name	
Title	
Phone	
Surety's Acknowledgement	

**NOTICE:** No substitution or revision to this bond form will be accepted. Sureties must be authorized to do business in and have an agent for services of process in the State of Nevada. Certified copy of Power of Attorney must be attached.

# BID PROPOSAL

**BID # 1011-242**

**BID TITLE: Carson City Gateway Signage Project**

**NOTICE:** No substitution or revision to this Bid Proposal form will be accepted. Carson City will reject any Bid that is received that has changes or alterations to this document. Although the Prevailing Wages are provided in this bid document, the bidder is responsible to verify with the Labor Commissioner if any addendums have been issued. The successful bidder will be required to provide the current Prevailing Wages used in preparation of their bid within 24 hours of bid submission.

**PRICES** will be valid for sixty (60) calendar days after the bid opening which is indicated in the Notice to Contractors.

**A COPY OF CONTRACTOR'S "CERTIFICATE"** of eligibility issued by the State of Nevada Contractors' Board as proof of Bidder's compliance with the provisions of N.R.S. 338.147 must be submitted with his/her bid for the preference to be considered. This Statute does not apply to projects expected to cost less than \$250,000.

**COMPLETION** of this project is expected **PURSUANT TO THE BID DOCUMENTS.**

**BIDDER** acknowledges receipt of \_\_\_\_\_ Addendums.

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**SUMMARY**

	Description	Scheduled Value	Unit	Unit Price	Total Price
<b>BP.1</b>	North Gateway Sign	LS	1		
<b>BP.2</b>	East Gateway Sign	LS	1		
<b>BP.3</b>	South Gateway Sign	LS	1		
	Subtotal BP.1 + BP.2 + BP.3				
<b>BP.4</b>	Deductive Bid Alternative for Manufactured Stone Veneer in Place of Natural Thin Stone Veneer	LS	1		
<b>BP.5</b>	Total Bid Price (BP.1 + BP.2 + BP.3 – BP.4)				

**BP.6** Total Bid Price Written in Words:

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# BID PROPOSAL

## BP.7 BIDDER INFORMATION:

<b>Company Name:</b>
Federal ID No.:
Mailing Address:
City, State, Zip Code:
Complete Telephone Number:
Complete Fax Number:
E-mail:
<b>Contact Person / Title:</b>
Mailing Address:
City, State, Zip Code:
Complete Telephone Number:
Complete Fax Number:
E-mail Address:

## BP.8 LICENSING INFORMATION:

<b>Nevada State Contractor's License Number:</b>
License Classification(s):
Limitation(s) of License:
Date Issued:
Date of Expiration:
Name of Licensee:
<b>Carson City Business License Number:</b>
Date Issued:
Date of Expiration:
Name of Licensee:

# BID PROPOSAL

## BP.9 DISCLOSURE OF PRINCIPALS:

### 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:

### Corporation:

State in which Company is Incorporated:
Date Incorporated:
Name of Corporation:
Mailing Address
City, State, Zip Code:
Telephone Number:
President's Name:
Vice-President's Name:
Other 1) Name:
Title:
Other 2) Name:
Title

# BID PROPOSAL

## BP.10 MANAGEMENT AND SUPERVISORY PERSONNEL:

Persons and Positions	Years With Firm
Name 1)	
Title 1)	
Name 2)	
Title 2)	
Name 3)	
Title 3)	
Name 4)	
Title 4)	
Name 5)	
Title 5)	
Name 6)	
Title 6)	

(If additional space is needed, attach a separate page)

# BID PROPOSAL

## BP.11 REFERENCES:

### **Instructions:**

List at least three (3) contracts of a similar nature performed by your firm in the last three (3) years. If **NONE**, use your Company's letterhead (and submit with your bid proposal) to list what your qualifications are for this contract. Carson City reserves the right to contact and verify, with any and all references listed, the quality of and the degree of satisfaction for such performance.

**Clients:** (if additional space is needed attach a separate page)

<b>Company Name 1):</b>
Contract Person:
Mailing Address:
City, State, Zip Code:
Complete Telephone Number:
E-Mail Address:
Project Title:
Amount of Contract:
Scope of Work:
<b>Company Name 2):</b>
Contract Person:
Mailing Address:
City, State, Zip Code:
Complete Telephone Number:
E-Mail Address:
Project Title:
Amount of Contract:
Scope of Work:
<b>Company Name 3):</b>
Contract Person:
Mailing Address:
City, State, Zip Code:
Complete Telephone Number:
E-Mail Address:

# BID PROPOSAL

Project Title:
Amount of Contract
Scope of Work:
<b>Company Name 4):</b>
Contract Person:
Mailing Address:
City, State, Zip Code:
Complete Telephone Number:
E-Mail Address:
Project Title:
Amount of Contract:
Scope of Work:

# BID PROPOSAL

## CERTIFICATION REGARDING DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS PRIMARY COVERED TRANSACTIONS

**BP. 12**

1. The prospective primary participant 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 by any Federal, State or Local department or agency.
  - b) Have not within a three-year period preceding this bid 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 (1)(b) of this certification; and
  - d) Have not within a three-year period preceding this bid had one or more public transactions (Federal, State or Local) terminated for cause or default.
2. Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this bid.

\_\_\_\_\_  
Signature of Authorized Certifying Official

\_\_\_\_\_  
Title

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

\_\_\_\_\_  
Date

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

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

**BIDDER'S SAFETY INFORMATION**

**Bidder's Safety Factors:**

Year	"E-Mod" Factor <sup>1</sup>	OSHA Incident Rate <sup>2</sup>
2008		
2007		

<sup>1</sup> E-Mod (Experience Modification) Factors are issued by the Employer's Insurance Company of Nevada.  
<sup>2</sup> OSHA Incident Rate is the number of OSHA Recordable Accidents per 100 employees and is calculated as the number of accidents divided by 208,000.

# BID PROPOSAL

## SUBCONTRACTORS

**BP. 13 INSTRUCTIONS:** for Subcontractors **exceeding five (5) percent of bid amount.** This information must be submitted with your bid proposal. The 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).

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		

# BID PROPOSAL

## SUBCONTRACTORS

**BP. 14 INSTRUCTIONS:** for Subcontractors exceeding one (1) percent of bid amount or \$50,000 whichever is greater. This information must be submitted by the three lowest bidders within two (2) hours after the completion of the opening of the bids. 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		
Name of Subcontractor	Address	
Phone	Nevada Contractor License #	Limit of License
Description of work		

# BID PROPOSAL

## SUBCONTRACTORS

**BP. 15 INSTRUCTIONS:** for all Subcontractors not previously listed on the 5% and 1% pages. This information must be submitted by the three lowest bidders within twenty four (24) hours after the completion of the opening of the bids. 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 twenty four 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		
Name of Subcontractor	Address	
Phone	Nevada Contractor License #	Limit of License
Description of work		



# CONTRACT AWARD

## Contract Award

### CA.1 METHOD OF AWARD

The Bid, if awarded, will be awarded to the lowest responsive and responsible Bidder based on the Total Base Bid amount, plus or minus any or all Additive or Deductive Alternates, in any combination that is most advantageous to the City. Bidder must bid all items to be responsive and considered for award.

### CA.2 TIME OF AWARD

The award, if made, will be within sixty (60) calendar days after the opening of Bids. The City reserves the right to accept or reject any or all Bids received.

### CA.3 BONDS

#### A. Bonds Required

The Contractor agrees that any bonding or guarantee required by this bid shall not be considered as the exclusive remedy of the City for any default in any respect by the Contractor, but such bonding or guarantee shall be considered to be in addition to any right or remedy hereunder or allowed by law, equity, or statute.

A Performance Bond and a Payment Bond, pursuant to the requirements of NRS 339.025, if not otherwise excluded under the threshold stated in NRS 339.025, in the amount of one hundred percent (100%) of the Contract Amount shall be required of the Contractor prior to execution of the Contract and not later than ten (10) calendar days after receipt of the Notice of Award. Said bonds shall remain in full force and effect for a period of not less than one (1) year from the date of Final Acceptance of this Project by the City (Carson City Board of Supervisors or Carson City Regional Transportation Commission). Each of the bonds required must be executed by one or more surety companies authorized to do business in the State of Nevada. Note that individual surety bonds are not acceptable to the City.

#### B. Bond Forms

The referenced bonds shall be written on the Performance Bond, and Labor and Material Payment Bond forms provided by the City, as shown in the following Construction Contract forms.

The Bidder shall require any resident agent who executes the required bonds on behalf of the surety to affix thereto a certified and current copy of his/her power of attorney.

Any Labor and Material Payment Bond or Performance Bond prepared by a licensed non-resident agent must be countersigned by a resident agent in accordance with the provisions of NRS 680A.300.

The referenced Bonds must be issued by a certified surety listed in the Department of the Treasury, Fiscal Service (Department Circular 570, Current Revision); companies holding certificates of authority as acceptable sureties on federal bonds and as acceptable reinsuring companies.

### CA.4 INSURANCE REQUIREMENTS

#### A. General

Contractor, as an independent contractor and not an employee of the City, must carry policies of insurance in amounts specified and pay all taxes and fees incidental hereto. City shall have no liability except as specified in this Contract.

Contractor shall not commence work before: (1) Contractor has provided the required evidence of insurance to Carson City Purchasing and Contracts, (2) City has approved the insurance policies provided by Contractor, and (3) City has issued the Notice to Proceed.

Contractor shall not allow any subcontractors to commence work on its subcontract until all similar insurance required of the subcontractor has been obtained and verified by Contractor.

Prior approval of the insurance policies by City shall be a condition precedent to any payment of consideration under this Contract and City's approval of any changes to insurance coverage during the course of performance shall constitute an ongoing condition subsequent to this Contract. Any failure of City to timely approve shall not constitute a waiver of the condition.

# CONTRACT AWARD

The insurance requirements specified herein do not relieve Contractor of his/her responsibility or limit the amount of his/her liability to the City or other person, and Contractor is encouraged to purchase such additional insurance as he/she deems necessary.

Contractor is responsible for and must 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. Contractor is responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work.

City reserves the right to occupy existing facilities under construction or to use or occupy parts of the Work. Insurance policies shall not restrict or limit such use.

**Certificate Holder:** Each liability insurance policy shall list Carson City c/o Carson City Purchasing and Contracts, 201 North Carson Street, Suite 3, Carson City, Nevada 89701 as a certificate holder.

## **B. Insurance Coverage**

Contractor shall, at Contractor's sole expense, procure, maintain and keep in force for the duration of this Contract the following insurance conforming to the minimum requirements specified below. Unless specifically specified herein or otherwise agreed to by the City, the required insurance shall be in effect prior to the commencement of work by the Contractor and shall continue in force as appropriate until the latter of:

1. Final acceptance by the City of the completion of this Contract; or
2. Such time as the insurance is no longer required by the City under the terms of this Contract
3. Any insurance or self-insured available to the City shall be in excess of and non-contributing with any insurance required from the Contractor. Contractor's insurance policies shall apply on a primary basis. Until such time as the insurance is no longer required by the City, Contractor shall provide the City with renewal or replacement evidence of insurance no less than thirty (30) calendar days before the expiration or replacement of the required insurance. If at any time during the period when insurance is required by this Contract, an insurer or surety fail to comply with the requirements of this Contract, as soon as **CONTRACTOR** has knowledge of any such failure, Contractor shall immediately notify the City and immediately replace such insurance or bond with an insurer meeting the requirements.

## **C. General Requirements**

**Certificate Holder:** Each liability insurance policy shall list Carson City c/o Carson City Purchasing and Contracts, 201 North Carson Street, Suite 3, Carson City, Nevada 89701, as a certificate holder.

**Additionally Insured:** By Endorsement to the general liability insurance policy evidence by Contractor, the City and County of Carson City, Nevada, its officers, employees and immune Contractors shall be named as additionally insured's for all liability arising from this contract.

**Waiver of Subrogation:** Each liability insurance policy shall provide for a waiver of subrogation as to additionally insured's.

**Cross Liability:** All required liability policies shall provide cross-liability coverage as would be achieved under the standard ISO separation of insured's clause.

**Deductibles and Self-Insured Retentions:** Insurance maintained by the Contractor shall apply on a first dollar basis without application of a deductible or self-insured retention unless otherwise specifically agreed to by the City. Such approval shall not relieve Contractor from the obligation to pay any deductible or self-insured retention. Any deductible or self-insured retention shall not exceed \$5,000.00 per occurrence, unless otherwise approved by the City.

**Policy Cancellation:** Except for ten (10) calendar days notice for non-payment of premium, each insurance policy shall be endorsed to state that: without thirty (30) calendar days prior written notice to Carson City

# CONTRACT AWARD

Purchasing and Contracts, the policy shall not be cancelled, non-renewed or coverage and/or limits reduced or materially altered, and shall provide that notices required by this paragraph shall be sent by certified mail to Carson City Purchasing and Contracts, 201 North Carson Street, Suite 3, Carson City, Nevada 89701.

**Approved Insurer:** Each insurance policy shall be issued by insurance companies authorized to do business in the State of Nevada or eligible surplus line insurers acceptable to the State and having agents in Nevada upon whom service of process may be made, and currently rated by A.M. Best as "A-VII" or better.

**Evidence of Insurance:** Prior to commencement of work, the Contractor must provide the following documents to Carson City Purchasing and Contracts, 201 North Carson Street, Suite 3, Carson City, Nevada 89701.

**Certificate of Insurance:** The Acord 25 Certificate of Insurance form or a form substantially similar must be submitted to Carson City Purchasing and Contracts to evidence the insurance policies and coverages required of Contractor.

**Additional Insured Endorsement:** An additional Insured Endorsement (CG20 10 or CG 20 26), signed by an authorized insurance company representative, must be submitted to Carson City Purchasing and Contracts to evidence the endorsement of **CITY** as an additional insured.

**Schedule of Underlying Insurance Policies:** If Umbrellas or Excess policy is evidenced to comply with the minimum limits, a copy of the Underlyer Schedule from the Umbrella or Excess insurance policy may be required.

**Review and Approval:** Documents specified above must be submitted for review and approval by Carson City Purchasing and Contracts prior to the commencement of work by Contractor. Neither approval by the City nor failure to disapprove the insurance furnished by the Contractor shall relieve Contractor or Contractor's full responsibility to provide the insurance required by this Contract. Compliance with the insurance requirements of this Contract shall not limit the liability of Contractor or its subcontractors, employees or agents to City or others, and shall be in addition to and not in lieu of any other remedy available to the City under this Contract or otherwise. Carson City reserves the right to request and review a copy of any required insurance policy or endorsement to assure compliance with these requirements.

## **D. Commercial General Liability Insurance**

Minimum Limits required:

Two Million Dollars (\$2,000,000.00) – General Aggregate

Two Million Dollars (\$2,000,000.00) – Products and Completed Operations Aggregate

One Million Dollars (\$1,000,000.00) – Each Occurrence

Coverage shall be on an occurrence basis and shall be at least as broad as ISO 1996 from CG 00 01 (or a substitute form providing equivalent coverage); and shall cover liability arising from premises, operations, independent Contractors, completed operations, person injury, products, civil lawsuits, Title VII actions and liability assumed under an insured contract (including the tort liability or another assumed in a business contact).

## **E. Business Automobile Liability**

Minimum Limit required:

On Million Dollars (\$1,000,000.00) per occurrence for bodily injury and property damage

Coverage shall be for "any auto" including owned, non-owned and hired vehicles. The policy shall be written on ISO form CA 00 01 or a substitute providing equivalent liability coverage. If necessary, the policy shall be endorsed to provide contractual liability coverage.

## **F. Worker's Compensation and Employer's Liability Insurance**

# CONTRACT AWARD

**CONTRACTOR** shall provide workers' compensation insurance as required by Nevada Revised Statutes Chapters 616A through 616D inclusive and Employer's Liability insurance with a minimum limit of \$500,000.00 each employee per accident for bodily injury by accident or disease.

## **G. Explosion, Collapse, and Underground Hazards**

**CONTRACTOR** shall provide insurance coverage for explosion, collapse, and underground hazards with limits of no less than One Million Dollars (\$1,000,000.00) combined single limit "per accident" for bodily injury and property damage.

## **CA.5 PENALTY FOR COLLUSION**

If at any time, it is found that the Contractor has, in presenting any bid or bids, colluded with any other party or parties, then the Contract shall be null and void, and the Contractor and its sureties shall be liable for loss or damage which the City may suffer thereby, and the City may advertise for new bids for said Work. The Contractor further certifies that any and all prices which he/she may charge under the terms of the Contract do not, and will not; violate any existing Federal, State or Municipal laws or regulations concerning discrimination and/or price fixing.

## **CA.6 SUCCESSORS AND ASSIGNS**

The performance of the Contract may not be assigned. Consent will not be given to any proposed assignment which would relieve the surety of the original Contractor of their responsibilities under the Contract, nor will the City consent to any assignment of a part of the Work under the Contract.

## **CA.7 RIGHTS AND REMEDIES**

The duties and obligations imposed by the Contract Documents and the rights and remedies available thereunder shall be in addition to, and not a limitation of, any duties, obligations, rights, and remedies otherwise imposed or available by law.

No action or failure to act by the City, the Design Consultant, or the Construction Manager shall constitute a waiver of any right or duty afforded any of them under the Contract, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach thereunder, except as may be specifically agreed in writing.

## **CA.8 COPELAND ANTI-KICKBACK LAW**

The Contractor shall comply with the Copeland Anti-Kickback Act (19 U.S.C. 874) as supplemented in the Department of Labor Regulations (29 CFR Part 3). This act provides that each Contractor or subcontractor shall be prohibited from inducing by any means, any person employed in the construction, completion or repair of public work, to give up any part of the compensation to which he/she is otherwise entitled.

## **CA.9 NOTICE TO PROCEED**

Within ten (10) calendar days of receipt of all required post-bid information, including bonds, insurances, and executed Contract, the City will issue the Notice to Proceed.

## **CA.10 TIME: COMPLETION OF PROJECT**

### **A. Time**

The successful Bidder, upon becoming the Contractor after having entered into a Contract with the City, shall commence the Work to be performed under the Contract on the date set by the City in the written Notice to Proceed, continuing the Work in accordance with the approved schedule and shall complete the entire Work within the number of calendar days stated in the Special Conditions after the date of the Notice to Proceed. Further, separable portions of the Work may be subject to milestone or specific dates as established in the Special Conditions.

The time specified above represents no overtime requirement. Any scheduling of overtime for this Project is solely that of the Contractor, unless specifically directed in writing by the City. The City will not be responsible for any costs related to overtime work performed unless it is specifically directed in writing by the City.

### **B. Liquidated Damages**

In case of failure on the part of the Contractor to complete the Work within the time(s) specified in the Contract, or within such additional time(s) as may be granted by formal action of the City, or the Contractor

# CONTRACT AWARD

fails to prosecute the Work, or any separable part thereof, with such diligence as will insure its completion within the time(s) specified in the Contract or any extensions thereof, the Contractor shall pay to the City, as liquidated damages, the sum specified in the Special Conditions for each calendar day for delay until such reasonable time as may be required for final completion of the Work, together with any increased costs incurred by the City in completing the Work.

Time stated for completion shall include the final cleanup and demobilization.

The signing of the Bid Proposal by the Bidder shall be prima facie evidence that the Contractor agrees that the amount of liquidated damages is fair and reasonable.

## **CA. 11 LIQUIDATED DAMAGES FOR LATE SUBMITTALS AND LAPSE OF INSURANCE**

The Contractor shall provide all submittals required by this Contract within fifteen (15) calendar days of the Notice to Proceed. If the Contractor does not provide the submittals on or before the fifteenth (15th) calendar day, he/she will pay to the City the amount of Two Hundred Fifty Dollars (\$250) per day as liquidated damages. If the Contractor does not keep the bonds or insurance policies in effect or allows them to lapse, the Contractor will pay to the City the amount of Two Hundred Fifty Dollars (\$250) per day as liquidated damages, and will be in breach of Contract.

**END OF CONTRACT AWARD**



# SAMPLE CONTRACT

THIS **CONTRACT** made and entered into this 14<sup>th</sup> day of September, 2011, by and between the City and County of Carson City, a political subdivision of the State of Nevada, hereinafter referred to as the "**OWNER**", and "???" hereinafter referred to as "**CONTRACTOR**".

## WITNESSETH:

**WHEREAS**, the Purchasing and Contracts Administrator for the City and County of Carson City is authorized pursuant to Nevada Revised Statutes 338 and Carson City Purchasing Resolution #1990-R71, to approve and accept this Contract as set forth in and by the following provisions; and

**WHEREAS**, it is deemed necessary that the services of **CONTRACTOR** for **CONTRACT No. 1011-242, titled "Carson City Gateway Signage Project"** are both necessary and in the best interest of **CITY**; and

**NOW, THEREFORE**, in consideration of the aforesaid premises, the parties mutually agree as follows:

## REQUIRED APPROVAL

This Contract shall not become effective until and unless approved by the Carson City Board of Supervisors or the Carson City Regional Transportation Commission.

## CONTRACT TERM AND LIQUIDATED DAMAGES

**CONTRACTOR** agrees to complete the Work on or before the date specified in the Notice to Proceed or any executed Change Orders to the entire satisfaction of the **OWNER** before final payment is made, unless sooner termination by either party as specified in the General Conditions, section GC 3.18.

Pursuant to the provisions under Time for Completion and Liquidated Damages in the Contract Documents of said Specifications; the **CONTRACTOR** will complete the work within the Contract time. Since **OWNER** and **CONTRACTOR** agree it is difficult to ascertain the actual amount of damages incurred due to delay of the Project, it is agreed that **OWNER** will be paid the liquidated damages as specified in the Contract Special Conditions for each and every calendar day of delay in the completion of the work, in addition to any direct charges incurred by the **OWNER** as a result of delay of the Project, including engineering fees and additional damages due to late construction. The **OWNER** also reserves the right to deduct any amounts due the **OWNER** from any moneys earned by the **CONTRACTOR** under this Contract.

That in the performance of this Contract, an employer shall pay 1 ½ times an employee's regular wage rate whenever an employee who received compensation for employment at a rate less than 1 ½ time the minimum wage who works more than forty (40) hours in any scheduled work week, more than eight (8) hours in a day, unless by mutual agreement the employee works a scheduled ten (10) hours per day for four (4) calendar days with an work week. Employers should refer to NRS 608.018 for further details on overtime requirements.

## NOTICE

Unless otherwise specified, termination shall not be effective until seven (7) calendar days after a party has served written notice of default, or without cause upon the other party. All notices or other communications required or permitted to be given under this Contract shall be in writing and shall be deemed to have been duly given if delivered personally in hand, by e-mail with simultaneous regular mail, by telephonic facsimile with simultaneous regular mail, or by certified mail, return receipt requested, postage prepaid on the date posted, and addressed to the other party at the address specified below.

For P&C Use Only
CCBL expires _____
NVCL expires _____
GL expires _____
AL expires _____
WC expires _____

# SAMPLE CONTRACT

Notice to CONTRACTOR shall be addressed to:

Notice to CITY shall be addressed to:

Carson City Purchasing and Contracts  
Kim Belt, Purchasing and Contracts Manager  
201 North Carson Street, Suite 3  
Carson City, NV 89701  
775-283-7362 / FAX 775-887-2107  
[KBelt@carson.org](mailto:KBelt@carson.org)

## COMPENSATION

The parties agree that **CONTRACTOR** will provide the Work specified in these Contract Documents for the Contract Amount of "amount in word" (amount in figures).

**OWNER** will pay **CONTRACTOR** progress payments and the final payment computed from the actual quantities of work performed and accepted and the materials furnished at the Unit and Lump Sum prices shown on the **CONTRACTOR'S** Bid Proposal and any executed Change Orders.

Contract Amount represents full and adequate compensation for the complete Work, and includes the furnishing of all materials; all labor, equipment, tools, transportation, services, appliances; and all expenses, direct or indirect connected with the proper execution of the work.

**OWNER** does not agree to reimburse **CONTRACTOR** for expenses unless otherwise specified.

## CONTRACT TERMINATION

### Termination Without Cause:

Any discretionary or vested right of renewal notwithstanding, this Contract may be terminated upon written notice by mutual consent of both parties or unilaterally by either party without cause.

**CITY** reserves the right to terminate this Contract for convenience whenever it considers termination, in its sole and unfettered discretion, to be in the public interest. In the event that the Contract is terminated in this manner, payment will be made for work actually completed. In no event if termination occurs under this provision shall **CONTRACTOR** be entitled to anticipated profits on items of work not performed as of the effective date of the termination or compensation for any other item, including but not limited to, unabsorbed overhead. **CONTRACTOR** shall assure that all subcontracts which he/she enters related to this Contract likewise contain a termination for convenience clause which precludes the ability of any subcontractor to make claims against **CONTRACTOR** for damages, due to breach of contract, of lost profit on items of work not performed or of unabsorbed overhead, in the event of a convenience termination.

### Termination for Nonappropriation:

The continuation of this Contract beyond June 30, 2012 is subject to and contingent upon sufficient funds being appropriated, budgeted, and otherwise made available by the Carson City Board of Supervisors. **CITY** may terminate this Contract, and **CONTRACTOR** waives any and all claim(s) for damages, effective immediately upon receipt of written notice (or any date specified therein) if for any reason the funding is not appropriated or is withdrawn, limited, or impaired.

### Cause Termination for Default or Breach:

A default or breach may be declared with or without termination.

This Contract may be terminated by either party upon written notice of default or breach to the other party as follows:

# SAMPLE CONTRACT

If **CONTRACTOR** fails to provide or satisfactorily perform any of the conditions, work, deliverables, goods, or services called for by this Contract within the time requirements specified in this Contract or within any granted extension of those time requirements; or

If any state, county, city or federal license, authorization, waiver, permit, qualification or certification required by statute, ordinance, law, or regulation to be held by **CONTRACTOR** to provide the goods or services required by this Contract is for any reason denied, revoked, debarred, excluded, terminated, suspended, lapsed, or not renewed; or

If **CONTRACTOR** becomes insolvent, subject to receivership, or becomes voluntarily or involuntarily subject to the jurisdiction of the bankruptcy court; or

If **CITY** materially breaches any material duty under this Contract and any such breach impairs **CONTRACTOR'S** ability to perform; or

If it is found by **CITY** that any quid pro quo or gratuities in the form of money, services, entertainment, gifts, or otherwise were offered or given by **CONTRACTOR**, or any agent or representative of **CONTRACTOR**, to any officer or employee of **CITY** with a view toward securing a contract or securing favorable treatment with respect to awarding, extending, amending, or making any determination with respect to the performing of such contract; or

If it is found by **CITY** that **CONTRACTOR** has failed to disclose any material conflict of interest relative to the performance of this Contract.

**CITY** may terminate this Contract if **CONTRACTOR**:

Fails to maintain bonding, Nevada State Contractors' Board License, State Industrial Insurance requirements or insurance policies for limits as defined in this Contract;

Persistently or materially refuses or fails to supply properly skilled workers or proper materials;

Fails to make payment to subcontractors for materials or labor in accordance with the respective agreements between **CONTRACTOR** and the subcontractors;

Disregards laws, ordinances, or rules, regulations or order of a public authority having jurisdiction;  
Otherwise makes a material breach of a provision of this Contract; or

**CONTRACTOR** fails to maintain safe working conditions.

When any of the above reasons exist, **CITY** may provide, without prejudice to any other rights or remedies of **CITY** and after giving **CONTRACTOR** and **CONTRACTOR'S** Surety, seven (7) calendar days written notice, terminate employment of **CONTRACTOR** and may, subject to any prior rights of the surety:

Take possession of the site and of all materials, equipment, tools and construction equipment and machinery thereon owned by **CONTRACTOR**;

Accept assignment of subcontractors pursuant to this Contract (Contingent Assignment of Subcontracts to Carson City if this Contract is terminated); and,

Finish the Work by whatever reasonable method **CITY** may deem expedient.

If **CITY** terminates this Contract for one of the reasons stated in above, **CONTRACTOR** shall not be entitled to receive further payment until the Work is finished.

If the unpaid balance of the Contract Amount exceeds the cost of finishing the Work including expenses made necessary thereby, such excess shall be paid to **CONTRACTOR**. If the costs of finishing the Work exceed the unpaid balance, **CONTRACTOR** shall pay the difference to **CITY**. The amount to be paid to **CONTRACTOR** or **CITY**, as the case may be, shall survive termination of this Contract.

In the event of such termination, all monies due **CONTRACTOR** or retained under the terms of this Contract shall be held by **CITY**; however, such holdings will not release **CONTRACTOR** or its sureties from liability for failure to fulfill this

# SAMPLE CONTRACT

Contract. Any excess cost over and above the Contract Amount incurred by **CITY** arising from the termination of the operations of this Contract and the completion of the Work by **CITY** as provided above shall be paid for by any available funds held by **CITY**. **CONTRACTOR** will be so credited with any surplus remaining after all just claims for such completion have been paid.

If at any time before completion of the Work under this Contract, the Work shall be stopped by an injunction of a court of competent jurisdiction or by order of any competent authority, **CITY** may give notice to **CONTRACTOR** to discontinue the Work and terminate this Contract. **CONTRACTOR** shall discontinue the Work in such manner, sequence, and at such times as **CITY** may direct. **CONTRACTOR** shall have no claim for damages for such discontinuance or termination, nor any claim for anticipated profits on the Work thus dispensed with, nor for any claim for penalty, nor for any other claim such as unabsorbed overhead, except for the work actually performed up to the time of discontinuance, including any extra work ordered by **CITY** to be done.

Time to Correct:

Termination upon a declared default or breach may be exercised only after service of formal written notice as specified above, and the subsequent failure of the defaulting party within five (5) calendar days of that notice to provide evidence, satisfactory to the aggrieved party, showing that the declared default or breach has been corrected.

## **Winding Up Affairs Upon Termination:**

In the event of termination of this Contract for any reason, the parties agree that the provisions of this paragraph survive termination:

The parties shall account for and properly present to each other all claims for fees and expenses and pay those which are undisputed and otherwise not subject to set off under this Contract. Neither party may withhold performance of winding up provisions solely based on nonpayment of fees or expenses accrued up to the time of termination; **CONTRACTOR** shall satisfactorily complete work in progress at the agreed rate (or a pro rata basis if necessary) if so requested by **CITY**;

**CONTRACTOR** shall execute any documents and take any actions necessary to effectuate an assignment of this Contract if so requested by **CITY**;

**CONTRACTOR** shall preserve, protect, and promptly deliver into **CITY** possession all proprietary information in accordance with City Ownership of Proprietary Information.

## **SCOPE OF WORK**

The parties agree that the scope of work will be specifically described and hereinafter referred to as the **WORK**. This Contract incorporates the following attachments. A **CONTRACTOR'S** attachment shall not contradict or supersede any **OWNER** specifications and/or terms or conditions without written evidence of mutual assent to such change appearing in this Contract.

**CONTRACTOR** agrees that the Contract Documents for Bid No. 1011-242 include, but not limited to, the Notice to Contractors, Table of Contents, Project Coordination, Instructions to Bidders, Contract Award Information, General Conditions, Special Conditions, Technical Specification, Prevailing Wages, Contract Drawings, and Addenda, if any, herein after referred to as Exhibit A, are intended to be complete and complementary and are intended to describe a complete work. These documents are incorporated herein by reference and made a part whereof.

**CONTRACTOR** additionally agrees **CONTRACTOR'S** Bid Bond, Proposal Summary, Executed Contract, Performance Bond, Labor and Material Bond, Certificate of Eligibility, Insurance Certificates, Permits, Notice of Award, Notice to Proceed and Executed Change Orders, referred to as Exhibit B, are incorporated herein and made a part whereof.

## **FAIR EMPLOYMENT PRACTICES**

Pursuant to NRS 338.125, Fair Employment Practices, the following provisions must be included in any contract between **CONTRACTORS** and Public Bodies;

***In connection with the performance of work under this Contract, the CONTRACTOR agrees not to discriminate against any employee or applicant for employment because of race, creed, color, national origin,***

# SAMPLE CONTRACT

*sex sexual orientation or age, including, without limitation, with regard to employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including without limitation, apprenticeship.*

**CONTRACTOR** further agrees to insert this provision in all subcontracts hereunder, except subcontracts for standard commercial supplies or raw materials.

## PREFERENTIAL EMPLOYMENT

Pursuant to Nevada Revised Statute 338.130, in all cases where persons are employed in the construction of public works, preference must be given, the qualifications of the applicants being equal: (1) First: To persons who have been honorably discharged from the Army, Navy, Air Force, Marine Corps or Coast Guard of the United States, a reserve component thereof or the National Guard; and are citizens of the State of Nevada. (2) Second: To other citizens of the State of Nevada.

In connection with the performance of work under this Contract, **CONTRACTOR** agrees to comply with the provisions of Nevada Revised Statute 338.130 requiring certain preferences to be given to which persons are employed in the construction of a public work. If **CONTRACTOR** fails to comply with the provisions of Nevada Revised Statute 338.130, pursuant to the terms of Nevada Revised Statute 338.130(3), this Contract is void, and any failure or refusal to comply with any of the provisions of this section renders this Contract void.

## ALTERNATIVE DISPUTE RESOLUTION

Pursuant to Nevada Revised Statute 338.150, public body charged with the drafting of specifications for a public work shall include in the specifications a clause requiring the use of a method of alternative dispute resolution before initiation of a judicial action if a dispute arising between the public body and the **CONTRACTOR** engaged on the public work if the dispute cannot otherwise be settled. Therefore, in the event that a dispute arising between **OWNER** and **CONTRACTOR** cannot otherwise be settled, **OWNER** and **CONTRACTOR** agree that, before judicial may be initiated, **OWNER** and **CONTRACTOR** will submit the dispute to non-binding mediation. **OWNER** shall present **CONTRACTOR** with a list of three potential mediators. **CONTRACTOR** shall select one person to serve as the mediator from the list of potential mediators presented by **OWNER**. The person selected as mediator shall determine the rules governing the mediation.

## LIMITED LIABILITY

**OWNER** will not waive and intends to assert available NRS Chapter 41 liability limitations in all cases. Contract liability of both parties shall not be subject to punitive damages. Liquidated damages shall not apply unless otherwise specified in the incorporated attachments. Damages for any **OWNER** breach shall never exceed the amount of funds appropriated for payment under this Contract, but not yet paid to **CONTRACTOR**, for the fiscal year budget in existence at the time of the breach. **CONTRACTOR'S** tort liability shall not be limited.

## FORCE MAJEURE

**NEITHER** party shall be deemed to be in violation of this Contract if it is prevented from performing any of its obligations hereunder due to strikes, failure of public transportation, civil or military authority, act of public enemy, accidents, fires, explosions, or acts of God, including, without limitation, earthquakes, floods, winds, or storms. In such an event, the intervening cause must not be through the fault of the party asserting such an excuse, and the excused party is obligated to promptly perform in accordance with the terms of this Contract after the intervening cause ceases.

## INDEMNIFICATION

To the extent permitted by law, including but not limited to, the provisions of NRS Chapter 41, each party shall indemnify, hold harmless and defend, not excluding the other's right to participate, the other party from and against all liability, claims, actions, damages, losses, and expenses, including but not limited to reasonable attorney's fees and costs arising out of any alleged negligent or willful acts or omissions of the indemnifying party, its officers, employees and agents. Such obligation shall not be construed to negate, abridge, or otherwise reduce any other right or obligation of the indemnity which would otherwise exist as to any party or person described in this paragraph.

# SAMPLE CONTRACT

Except as otherwise provided below, the indemnifying party shall not be obligated to provide a legal defense to the indemnifying party, nor reimburse the indemnified party for the same, for any period occurring before the indemnified party provides written notice of the pending claim(s) or cause(s) of action to the indemnifying party, along with:

- 1) a written request for a legal defense for such pending claim(s) or cause(s) of action; and
- 2) a detailed explanation of the basis upon which the indemnified party believed that the claim or cause of action asserted against the indemnified party implicated the culpable conduct of the indemnifying party, its officers, employees, and/or agents.

After the indemnifying party has begun to provide a legal defense for the indemnified party, the indemnifying party shall not be obligated to fund or reimburse any fees or costs provided by any additional counsel for the indemnified party, including counsel through which the indemnified party might voluntarily choose to participate in its defense of the same matter.

After the indemnifying party has begun to provide legal defense for the indemnified party, the indemnifying party shall not be obligated to reimburse the reasonable attorney's fees and costs incurred by the indemnified party during the initial thirty (30) day period of the claim or cause of action, if any, incurred by separate counsel.

## INDEPENDENT CONTRACTOR

An independent contractor is a natural person, firm or corporation who agrees to perform services for a fixed price according to his/her or its own methods and without subjection to the supervision or control of the other contracting party, except as to the results of the work, and not as to the means by which the services are accomplished.

It is mutually agreed that **CONTRACTOR** is associated with **CITY** only for the purposes and to the extent specified in this Contract, and in respect to performance of the contracted services pursuant to this Contract. **CONTRACTOR** is and shall be an independent contractor and, subject only to the terms of this Contract, shall have the sole right to supervise, manage, operate, control, and direct performance of the details incident to its duties under this Contract.

Nothing contained in this Contract shall be deemed or construed to create a partnership or joint venture, to create relationships of an employer-employee or principal-agent, or to otherwise create any liability for **CITY** whatsoever with respect to the indebtedness, liabilities, and obligations of **CONTRACTOR** or any other party.

**CONTRACTOR** shall indemnify and hold **CITY** harmless from, and defend **CITY** against, any and all losses, damages, claims, costs, penalties, liabilities, expenses arising out of or incurred in any way because of, but not limited to, **CONTRACTOR'S** obligations or legal duties regarding any taxes, fees, assessments, benefits, entitlements, notice of benefits, employee's eligibility to work, to any third party, subcontractor, employee, state, local or federal governmental entity.

Neither **CONTRACTOR** nor its employees, agents, or representatives shall be considered employees, agents, or representatives of **CITY**.

## COMPLIANCE WITH LEGAL OBLIGATIONS

Pursuant to NRS 338.153, a public body shall include in each contract for a public work a clause requiring each Contractor, subcontractor and other person who provide labor, equipment, materials, supplies and services for the public work to comply with the requirements of all applicable state and local laws, including without limitation, any applicable licensing requirements and requirements for the payment of sales and use taxes on equipment, materials and supplies provided for the public work.

**CONTRACTOR** shall procure and maintain for the duration of this Contract any state, county, city or federal license, authorization, waiver, permit, qualification or certification required by statute, ordinance, law, or regulation to be held by **CONTRACTOR** to provide the goods or services of this Contract. **CONTRACTOR** will be responsible to pay all government obligations, including, but not limited to, all taxes, assessments, fees, fines, judgments, premiums, permits, and license required or imposed by law or a court. Real property and personal property taxes are the

# SAMPLE CONTRACT

responsibility of **CONTRACTOR** in accordance with NRS 361.157 and NRS 361.159. **CONTRACTOR** agrees to be responsible for payment of any such government obligations not paid by its subcontractors during performance of this Contract. **OWNER** may set-off against consideration due any delinquent government obligations.

## WAIVER OF BREACH

Failure to declare a breach or the actual waiver of any particular breach of this Contract or its material or nonmaterial terms by either party shall not operate as a waiver by such party of any of its rights or remedies as to any other breach.

## SEVERABILITY

If any provision contained in this Contract is held to be unenforceable by a court of law or equity, this Contract shall be construed as if such provision does not exist and the nonenforceability of such provision shall not be held to render any other provision or provisions of this Contract unenforceable.

## ASSIGNMENT/DELEGATION

To the extent that any assignment of any right under this Contract changes the duty of either party, increases the burden or risk involved, impairs the chances of obtaining the performance of this Contract, attempts to operate as a novation, or includes a waiver or abrogation of any defense to payment by **OWNER**, such offending portion of the assignment shall be void, and shall be a breach of this Contract. **CONTRACTOR** shall neither assign, transfer nor delegate any rights, obligations or duties under this Contract without the prior written approval of **OWNER**.

## CITY OWNERSHIP OF PROPRIETARY INFORMATION

Any files, reports, histories, studies, test, manuals, instruction, photographs, negatives, blue prints, plans, maps, data, system designs, computer programs, computer codes, and computer records (which are intended to be consideration under this Contract), or any other documents or drawings, prepared or in the course of preparation by **CONTRACTOR** (or its subcontractors) in performance of its obligations under this Contract shall be exclusive property of the City of Carson City, Nevada, and such materials shall be delivered into **OWNER'S** possession by **CONTRACTOR** upon completion, termination, or cancellation of this Contract. **CONTRACTOR** shall not use, willingly allow, or cause to have such materials used for any purpose other than the performance of **CONTRACTOR'S** obligations under this Contract without the prior written consent of **OWNER**. Notwithstanding the foregoing, **OWNER** shall have no proprietary interest in any materials license for use by **OWNER** that are subject to patent, trademark or copyright protection.

**OWNER** shall be permitted to retain copies, including reproducible copies, of **CONTRACTOR'S** drawings, specifications, and other documents for information and reference in connection with this Contract.

**CONTRACTOR'S** drawings, specification and other documents shall not be used by **OWNER** or others without expressed permission of **CONTRACTOR**.

## PUBLIC RECORDS

Pursuant to NRS 239.010, information or documents received from **CONTRACTOR** may be opened to public inspection and copying. **OWER** will have duty to disclose unless a particular record is made confidential by law or a common law balancing of interests. **CONTRACTOR** may clearly label specific parts of an individual document as a "trade secret" or "confidential" in accordance with NRS 332,061, provided that **CONTRACTOR** thereby agrees to indemnify and defend **OWNER** for honoring such a designation. The failure to so label any document that is released by **OWNER** shall constitute a complete waiver of any and all claims for damages caused by any release of the records.

## CONFIDENTIALITY

**CONTRACTOR** shall keep confidential all information, in whatever form, produced, prepared, observed or received by **CONTRACTOR** to the extent that such information is confidential by law or otherwise required by this Contract.

# SAMPLE CONTRACT

## FEDERAL FUNDING

In the event federal funds are used for payment of all or part of this Contract:

**CONTRACTOR** certified, by signing this Contract, that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any federal department or agency. This certification is made pursuant to the regulations implementing Executive Order 12549, Debarment and Suspension, 28 C.F.R. pt. 67, § 67.510, as published as pt. VII of the May 26, 1988, Federal Register (pp.19160-19211), and any relevant program-specific regulations. This provision shall be required of every subcontractor receiving any payment in whole or in part from federal funds.

**CONTRACTOR** and its subcontractors shall comply with all terms, conditions, and requirements of the Americans with Disabilities Act of 1990 (P.L. 101-136), 42 U.S.C. 12101, as amended, and regulations adopted thereunder contained in 28 C.F.R. 26.101.36.999, inclusive, and any relevant program-specific regulations.

**CONTRACTOR** and its subcontractors shall comply with the requirements of the Civil Rights Act of 1964, as amended, the Rehabilitation Act of 1973, P.L. 93-112, as amended, and any relevant program-specific regulation, and shall not discriminate against any employee or offeror for employment because of race, national origin, creed, color, sex, religion, age, disability or handicap conditions (including AIDS and AIDS-related conditions).

## LOBBYING

The parties agree, whether expressly prohibited by federal law, or otherwise, that no funding associated with this Contract will be used for any purpose associated with or related to lobbying or influencing or attempting to lobby or influence for any purpose the following:

Any federal, state, county or local agency, legislature, commission, counsel or board;

Any federal, state, county or local legislator, commission member, counsel member, board member, or any other elected official; or

Any officer or employee of any federal, state, county or local agency, legislature, commission, counsel, or board.

## PROPER AUTHORITY

The parties hereto represent and warrant that the person executing this Contract on behalf of each party has full power and authority to enter into this Contract. **CONTRACTOR** acknowledges that this Contract is effective only after approval by the Carson City Regional Transportation Commission and only for the period of time specified in this Contract. Any services performed by **CONTRACTOR** before this Contract is effective or after it ceases to be effective are performed at the sole risk of **CONTRACTOR**.

## GOVERNING LAW: JURISDICTION

This Contract and the rights and obligations of the parties hereto shall be governed by, and construed according to, the laws of the State of Nevada, without giving effect to any principal of conflict-of-law that would require the application of the law any other jurisdiction. **CONTRACTOR** consents and agrees to the jurisdiction of the courts of the State of Nevada located in Carson City, Nevada for enforcement of this Contract.

## ENTIRE CONTRACT AND MODIFICATION

This Contract and its integrated attachment(s) constitute the entire contract of the parties and such are intended as a complete and exclusive statement of the promises, representations, negotiations, discussions, and other Contracts that may have been made in connection with the subject matter hereof. Unless an integrated attachment to this Contract specifically displays a mutual intent to amend a particular part of this Contract general conflicts in language between any such attachment and this Contract shall be construed consistent with the terms of this Contract. Unless otherwise expressly authorized by the terms of this Contract, no modification or amendment to this Contract shall be binding upon the parties unless the same is in writing and signed by the respective parties hereto and approved by the Carson City Board of Supervisors or the Regional Transportation Commission.

# SAMPLE CONTRACT

AND ALL SUPPLEMENTAL AGREEMENTS AMENDING OR EXTENDING THE WORK CONTEMPLATED.

## ACKNOWLEDGMENT AND EXECUTION:

In witness whereof, the parties hereto have caused this Contract to be signed and intend to be legally bound thereby.

### CARSON CITY

Finance Director  
Attn: Kim Belt, Purchasing and  
Contracts Manager  
201 North Carson Street, Suite 3  
Carson City, Nevada 89701  
Telephone: 775-283-7362  
Fax: 775-887-2107  
[KBelt@carson.org](mailto:KBelt@carson.org)

By: \_\_\_\_\_  
Kim Belt

Dated \_\_\_\_\_

### CITY'S LEGAL COUNSEL

Neil A. Rombardo, District Attorney

I have reviewed this Contract and approve  
as to its legal form.

By: \_\_\_\_\_  
Deputy District Attorney

Dated \_\_\_\_\_

### CITY'S ORIGINATING DEPARTMENT

BY: Andrew Burnham, Director  
Carson City Public Works Department  
3505 Butti Way  
Carson City, Nevada 89701  
Telephone: 775-283-7367  
Fax: 775-887-2164  
[ABurnham@carson.org](mailto:ABurnham@carson.org)

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

Dated \_\_\_\_\_

# SAMPLE CONTRACT

"name of signer" deposes and says: That he/she is Contractor or authorized agent of Contractor; the he/she has read the foregoing Contractor; and that he/she understands the terms, conditions and requirements thereof.

**CONTRACTOR**

**BY:**

**TITLE:**

**FIRM:**

**CARSON CITY BUSINESS LICENSE #:**

**NEVADA CONTRACTOR'S LICENSE #:**

**Address:**

**City: State: Zip Code:**

**Telephone: /Fax:**

**E-mail Address:**

\_\_\_\_\_  
(Signature of Contractor)

**DATED** \_\_\_\_\_

**STATE OF** \_\_\_\_\_ )

)ss

**County of** \_\_\_\_\_ )

Signed and sworn (or affirmed before me on this \_\_\_\_\_ day of \_\_\_\_\_, 2011, by "name of Contractor".

\_\_\_\_\_  
(Signature of Notary)

(Notary Stamp)

# SAMPLE CONTRACT

## CONTRACT ACCEPTANCE AND EXECUTION:

The Regional Transportation Commission for Carson City, Nevada at their publicly noticed meeting of September 14<sup>th</sup>, 2011, approved the acceptance of the attached contract hereinbefore identified as **CONTRACT No. 1011-242** and titled "Carson City Gateway Signage Project". Further, the Regional Transportation Commission authorizes the Chairperson of the Regional Transportation Commission for Carson City, Nevada to set her hand to this document and record her signature for the execution of this contract in accordance with the action taken.

**CARSON CITY, NEVADA**

\_\_\_\_\_  
SHELLY ALDEAN, CHAIRPERSON

DATED this 14<sup>th</sup> day of September, 2011.

**ATTEST:**

\_\_\_\_\_  
ALAN GLOVER, CLERK-RECORDER

DATED this 14<sup>th</sup> day of September, 2011.

# PERFORMANCE BOND

Doc. No. 2151  
(Rev. 11-17-99)

**KNOW ALL MEN BY THESE PRESENTS**, that I/we \_\_\_\_\_  
\_\_\_\_\_ as Principal, hereinafter called Contractor, and

\_\_\_\_\_ a corporation duly organized under the laws of the State of Nevada, as Surety, hereinafter called the Surety, are held and firmly bound unto Carson City, Nevada a consolidated municipality of the State of Nevada, hereinafter called City, for the sum of \$ \_\_\_\_\_ Dollars (state sum in Words) \_\_\_\_\_ for the payment whereof Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

**WHEREAS**, Contractor has by written agreement dated \_\_\_\_\_, 2011, entered into a contract with the City for **BID # 1011-242** and titled "Carson City Gateway Signage Project" in accordance with drawings and specifications prepared by Carson City and which contract is by reference made a part hereof, and is hereinafter referred to as the Contract.

**NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION** is such that, if Contractor shall promptly and faithfully perform said Contract then this obligation shall be null and void; otherwise it shall remain in full force and effect. The Surety hereby waives notice of any alteration or extension of time made by the City and its obligation is not affected by any such alteration or extension provided the same is within the scope of the contract. Whenever Contractor shall be, and is declared by City to be in default under the Contract, the City having performed City's obligations thereunder, the Surety may promptly remedy the default or shall promptly:

- 1) Complete the Contract in accordance with its terms and conditions; or
- 2) Obtain a bid or bids for completing the Contract in accordance with its terms and conditions, and upon determination by the City and the Surety jointly of the lowest responsive, responsible bidder, arrange for a contract between such bidder and the City, and make available as work progresses (even though there should be a default or a succession of defaults under the contract or contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the contract price, but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The term "balance of the contract price", as used in this paragraph, shall mean the total amount payable by City to Contractor under the Contract and any amendments thereto, less the amount properly paid by City to Contractor. No right of action shall accrue on this bond to or for the use of any person or corporation other than the City or successors of the City.



# LABOR AND MATERIAL PAYMENT BOND

Doc. No. 2152  
(Rev. 11-17-99)

**KNOW ALL MEN BY THESE PRESENTS**, that I/we \_\_\_\_\_  
\_\_\_\_\_ as Principal, hereinafter called Contractor, and  
\_\_\_\_\_ a  
corporation duly organized under the laws of the State of Nevada, as Surety, hereinafter called the Surety, are  
held and firmly bound unto Carson City, Nevada a consolidated municipality of the State of Nevada, hereinafter  
called City, for the \$ \_\_\_\_\_ Dollars (state sum in words) \_\_\_\_\_  
\_\_\_\_\_ f  
or the payment whereof Contractor and Surety bind themselves, their heirs, executors, administrators, successors  
and assigns, jointly and severally, firmly by these presents.

**WHEREAS**, Contractor has by written agreement dated \_\_\_\_\_, 2011 entered into a contract with  
the City for **BID # 1011-242** and titled "Carson City Gateway Signage Project" in accordance with drawings and  
specifications prepared by Carson City and which contract is by reference made a part hereof, and is hereinafter  
referred to as the Contract.

**NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION** is such that, if Contractor shall  
promptly make payment to all claimants as hereinafter defined, for all labor and material used or reasonably required  
for use in the performance of the Contract, then this obligation shall be void; otherwise it shall remain in full force and  
effect, subject, however, to the following conditions:

- 1) A claimant is defined as one having a direct contract with the Contractor or with a Subcontractor of the  
Principal for labor, material, or both, used or reasonably required for use in the performance of the  
Contract, labor and material being construed to include that part of water, gas, power, light, heat, oil,  
gasoline, telephone service, or rental of equipment directly applicable to the Contract.
- 2) The above-named Principal and Surety hereby jointly and severally agree with the City that every  
claimant as herein defined, who has not been paid in full before the expiration of a period of ninety  
(90) days after the date on which the last of such claimant's work or labor was done or performed, or  
materials were furnished by such claimant, may sue on this bond for the use of such claimant,  
prosecute the suit to final judgment for such sum or sums as may be justly due claimant, and have  
execution thereon. The City shall not be liable for the payment of any costs or expenses of any such  
suit.
- 3) No suit or action shall be commenced hereunder by any claimant:
  - a) Unless claimant, other than one having a direct contract with the Contractor, shall have given  
written notice to any two of the following: the Contractor, the City, or the Surety above  
named, within ninety (90) days after such claimant did or performed the last of the work or  
labor, or furnished the last of the materials for which said claim is made, stating with  
substantial accuracy the amount claimed and the name of the party to whom the materials  
were furnished, or for whom the work or labor was done or performed. Such notice shall be  
personally served or served by mailing the same by registered mail or certified mail, postage  
prepaid, in an envelope addressed to the Principal at any place the Principal maintains an  
office or conducts its business.
  - b) After the expiration of one (1) year following the date on which the last of the labor was  
performed or material was supplied by the party bringing suit.
  - c) Other than in a court of competent jurisdiction for the county or district in which the  
construction contract was to be performed.





# GENERAL CONDITIONS

## SECTION 1.0 INTENT, DEFINITIONS, ABBREVIATIONS

### GC 1.1 INTENT OF CONTRACT DOCUMENTS

The intent of the Contract Drawings and Specifications is to describe the details for the construction and completion of the Work which the Contractor undertakes to perform in accordance with the terms of the Contract. Contract Drawings and Specifications are divided into groups for the convenience of the City Engineer, and Construction Manager. These divisions are not for apportioning Work or responsibility for Work among subcontractors, suppliers, and manufacturers. The Contractor shall provide the City with a complete and operable Work or improvement, even though the Contract Drawing and Specifications may not specifically call out all items or items of work required of the Contractor to complete his/her tasks, incidental appurtenances, materials and the like and without additional compensation.

Where the Contract Drawings or Specifications describe portions of the Work in general terms but not in complete detail, it is understood that only the best general practice is to prevail and that only materials and workmanship of the best quality are to be used. The Contractor shall furnish tools, equipment, and incidentals, and do all the Work involved in executing the Contract in a satisfactory and complete manner.

The Instructions to Bidders, General Conditions, Special Conditions, Technical Specifications, Standard Specifications, Drawings and all supplementary documents are intended to be complete and complementary and to prescribe a complete work. If any omissions are made of information necessary to carry out the full intent and meaning of the Contract Documents, the Contractor shall immediately call the matter to the attention of the Engineer for furnishing of detail instructions. If specific lines, grades, and dimensions are not shown on the Drawings, those furnished by the Engineer shall govern.

Anything mentioned in these Specifications and not indicated on the Contract Drawing, or anything indicated on the Contract Drawing and not mentioned in these Specifications, shall be in the same force and effect as if indicated or mentioned in both.

In the event the materials and/or equipment are to be furnished by the City, as designated in the Special Conditions, this shall not relieve the Contractor of the above requirements to furnish all other labor, materials, and equipment to complete the Contract.

### GC 1.2 PARTIAL INVALIDITY

If any provision of this Contract is held by a court of competent jurisdiction to be invalid, void or unenforceable, the remaining provisions shall nevertheless continue in full force without being impaired or invalidated in any way.

### GC 1.3 GOVERNING ORDER OF BIDDING AND CONTRACT DOCUMENTS

The Bidding and Contract Documents include various divisions, sections, and conditions which are essential parts for the Work to be provided by the successful Bidder. A requirement occurring in one is as binding as though occurring in all. They are intended to be complementary and to describe and provide for a complete Work. In case of discrepancy, the following precedence will govern:

1. Permits from City Departments and other Agencies as may be required by law
2. Change Orders
3. Contract
4. Addenda
5. Special Conditions
6. Technical Specifications
7. General Conditions
8. Contract Drawing s
9. Standard Specifications for Public Works Construction (Orange Book specifications) sponsored and distributed by R.T.C. of Washoe County, Washoe County, City of Sparks, City of Reno, Carson City, and City of Yerington; 1996 Edition with Revision No. 1 dated 12-15-1998, Revision No. 2 dated 5-1-2000, Revision No. 3 dated 11-08-2001, Revision No. 4 dated 2-27-2004, and Revision No. 5 dated 2-14-2007.
10. Reference Specifications

With reference to Contract Drawing, the order of precedence is as follows:

- 1) Addenda/Change Order Drawings govern over any other Drawing
- 2) Figures govern over scaled dimensions
- 3) Contract Detail Drawings govern over Contract General Drawings

# GENERAL CONDITIONS

- 4) Contract Drawing govern over Standard Details

## GC 1.4 HEADINGS

Headings to parts, divisions, sections, articles, paragraphs, subparagraphs, and forms are inserted for convenience of reference only and shall not affect the interpretation of the Contract Documents.

## GC 1.5 DEFINITIONS

The words directed, required, permitted, ordered, instructed, designated, applicable, appropriate, sufficient, proper, desirable, necessary, prescribed, approved, acceptable, satisfactory or words of like import refer to actions, expressions, and prerogatives of the City, Design Consultant, or Construction Manager.

Each gender work includes the masculine, feminine and neuter genders. References to gender, such as "workman" and "flagman" and the pronouns "he" or "his" referring to such titles, are abstract in the specifications, are used for the sake of brevity, and are intended to refer to persons of either sex and, if applicable, to the neuter gender.

Singular words include the plural and "person" includes firms, companies, and corporations.

Where used in the Contract Documents, the following words and terms shall have the meanings indicated. The meanings shall be applicable to the singular, plural, masculine, and feminine of the words and terms.

**Acceptance** - The formal action by the Carson City Board of Supervisors or the Carson City Regional Transportation Commissions accepting the work as being complete. See Final Acceptance.

**Act of God** - An earthquake, flood, cyclone, or other cataclysmic phenomenon of nature. A rain, windstorm, high water, or other natural phenomenon which might reasonably have been anticipated from historical records of the general locality of the Work, shall not be construed as an Act of God.

**Addenda** - Written or graphic instruments issued prior to the Bid Opening which modify or interpret the Contract Documents, Drawings, and specifications by additions, deletions, clarifications, or corrections. All addenda become part of the Contract Documents.

**Additive Alternative Bid** - The amount stated in the Bid Schedule - Additive Schedule to be added to the amount of the Base Bid if the corresponding change in the Work, as described in the Bid Documents, is accepted by the City with the Award of the Project, subject to the availability of funds. Bidder must quote all items to be responsive and considered for Award.

**Agreement** - The written Contract covering the performance of the Work as more fully described in the Contract Documents.

**As Shown, As Indicated, As Detailed** - Where these words or words of similar import are used, it shall be understood that reference to the Drawings is made unless stated otherwise.

**As Directed, As Permitted, As Approved** - Where these words or words of similar import are used, it shall be understood that written direction, requirements, permission, approval or acceptance of the Construction Manager is intended unless otherwise stated.

**Bid** - The offer or proposal of the Bidder submitted on the prescribed forms setting forth the price for the Work to be performed.

**Bidder** - Any properly licensed and qualified individual, firm, partnership, corporation, joint venture, or combination thereof, submitting a proposal for the Work contemplated, acting directly or through a duly authorized representative.

**Bond(s)** - Bid, Performance, or Payment Bonds and Guarantee and other instruments of surety, furnished by the Contractor and Contractor's surety in accordance with the Contract Documents.

**Calendar Day** - Every day shown on the calendar.

**Cardinal Change** - A change required by the City which requires the Contractor to build a fundamentally different Project than originally planned.

# GENERAL CONDITIONS

**City** - Consolidated City/County of Carson City, Nevada. Under this Contract, the City is usually identified by name.

**Change Order** - A written order to the Contractor authorizing an addition, deletion, or revision of the work within the general scope of the Contract, or an adjustment in the contract price or time. Also referred to as a Contract Change Order.

**Construction Completion or Completion of Work** - Construction completion is when all work is complete, including punch list items, final cleanup, demobilization and submittal of final documentation, in accordance with the contract documents.

**Construction Conflicts** - Conflicts which may occur whenever corrections, alterations, or modifications of the Work under this Contract are ordered and approved by the City and change the character of the Work, the amount of the Work or the period of time in which to complete said Work.

**Construction Inspector** - The person designated by the City to act as its representative at the construction site, or remote locations, to perform construction inspection services.

**Construction Manager** - The person designated in writing by the City to act as its representative at the construction site and to perform construction inspection services and administrative functions relating to this Contract. Initial contact by the Contractor with the City shall be through the Construction Manager.

**Construction Schedule** - A graphic document that is computer generated which utilizes "critical path method" or "bar chart method" for scheduling projects. The construction schedule is supported by reports that can be generated to demonstrate relationships and logic.

**Contract** - The written agreement between Carson City and the Contractor setting forth the obligations of the parties thereunder, including, but not limited to the performance of the work, the furnishing of labor and materials, and the basis of payment.

**Contract Completion Date** - The date set forth in the Contract documents for the completion of all Contract work, including all punch list work, final cleanup and demobilization.

**Contract Documents** - The words "Contract Documents" shall mean any or all of, but not limited to, the following items, as applicable: Notice to Contractors, Instructions to Bidders, Bid Bond, Bid Proposal Summary, Contract Award Instructions, Contract, Performance Bond, Labor and Material Payment Bond, General Conditions, Prevailing Wage Rates, Permits, Special Conditions, Standard Specifications, Technical Specifications, Drawings, Addenda, if any, Executed Change Orders, if any, Notice of Award, and Notice to Proceed

Each of these items is to be considered by reference as part of the Contract Documents. Also referred to as the Contract.

**Contract Price** - The total amount payable to the Contractor under the terms and conditions of the Contract based on the price given on the Bid Proposal, with adjustments made in accordance with the Contract. Said total amount shall include all sales, use, and other consumer taxes related to the work. The base amount given in the Bid Proposal shall be either a lump sum Bid or the summation of the unit price Bids multiplied by the estimated quantities set forth in the Bid form. Also referred to as the Contract Amount.

**Contract Time** - Number of calendar days stated in the Contract Documents for the completion of the Work, including all authorized time adjustments.

**Contractor** - The person or persons, firms, partnership, corporation, joint venture, or combination thereof, who have entered into the Contract with the City. "Contractor" shall mean the principal Contractor as defined by NRS 624.020 or his/her authorized representative.

**Contractor's Plant and Equipment** - Equipment, material, supplies, tools and all other items, except labor, brought onto the site by the Contractor to carry out the Work, but not to be incorporated in the Work.

# GENERAL CONDITIONS

**Day(s)** - See Calendar Day(s). A twenty-four hour time period beginning at 12 midnight of day one and terminating at 12 midnight of the same day.

**Design Consultant** - The engineer, architect or other licensed professional designated by the City to have design control over the Work or a specified portion of the Work, acting either directly or through duly authorized representatives. Such representatives shall act within the scope of the particular duties delegated to them.

**Drawings** - Refers to the Contract Drawing, profiles, cross sections, elevations, details, and other working Drawings and supplementary Drawings, or reproductions thereof, signed by the Design Consultant and bearing the appropriate Professional seal, approved by the City, and are referred to in the Contract Documents. Drawings show the location, character, dimensions, and details of the Work to be performed. The term "plans" has the same meaning as the term Drawings.

**Engineer**- The City Engineer of Carson City, or other person or firm designated by the City Engineer as his/her duly authorized representative.

**Extra Work** - An item of work not provided for in the Contract as awarded but found essential by the Engineer to the satisfactory completion of the Contract within its intended scope.

**Field Directive** - Written documentation of the actions of the City or Construction Manager in directing the Contractor. Also referred to as a Work Directive.

**Field Order** - A written instruction given to the Contractor by the City or Construction Manager, authorizing Work that is a change to the scope of Work, to be carried out on a time and materials basis, or a negotiated lump sum. Also referred to as a Work Directive.

**Final Acceptance** - The formal acceptance by the City of the Work for an entire Contract, which has been completed in all respects (including submittal of the operation and maintenance manuals, equipment start-up and testing, warranty of title, and submittal of record drawings, lien and claims releases, and warranty), in accordance with the Contract Documents and any modifications thereof previously approved.

**Final Completion** - Final completion is when construction is complete, the City has accepted the work, and the Notice of Completion has been recorded in the Office of the County Recorder. This is based on acceptance by the Carson City Board of Supervisors or the Carson City Regional Transportation Commission of the completed work embraced by the Contract.

**Float** - Float or "total float" shall be defined as provided in the Associated General Contractors of America "CPM in Construction, A Manual for General Contractors".

**General Conditions** - Part of the Contract Documents representing the general clauses that establishes how the Contract is to be administered.

**Holidays** - Legal holidays observed by the City.

**Inspector**- The authorized representative of the Engineer assigned to observe the work or materials therefor.

**Intermediate Completion**- Intermediate Completion is the stage in the progress of the work when an element, section, or division of the Work is sufficiently complete in accordance with the contract documents so that the City can occupy or utilize the essential component(s) of the contractually defined element, section or division of the Work for its intended purpose.

**Laboratory** - The designated materials testing laboratory authorized by the City to test materials and Work involved in the Contract.

**Liquidated Damages** - Money to be paid to the City or to be deducted from any payments due to the Contractor for each day's delay in completing the whole, any specified portion of the Work beyond the time allowed in the Contract Documents, submitting award documentation, or technical submittals.

# GENERAL CONDITIONS

**Major Bid Item** - Any bid item whose unit bid item price extension is 5 percent or more of the total Contract Price.

**Notice of Award** - A written notice by the City to the Contractor informing it that the Contract has been awarded to the Contractor.

**Notice of Completion** - The City will cause to be recorded in the Office of the County Recorder, a notice of completion, which is based on acceptance by the Carson City Board of Supervisors or the Carson City Regional Transportation Commission of the completed work embraced in the Contract.

**Notice to Proceed** - A) The written notice by the City to the Contractor authorizing the Contractor to proceed with the Work and establishing the date of commencement of the Work. B) Material Only Notice to Proceed - Written notice by the City to the Contractor authorizing the Contractor to proceed with ordering materials, preparing shop Drawings, and acquiring permits only.

**Owner** - Carson City, which has contracted for the performance of the Work.

**Owner's Representative** - The person designated in writing by the City to act as its agent on specified matters relating to this Contract. The Owner's Representative may or may not be the Engineer, the Construction Manager, or the Design Consultant.

**Plans** - All drawings or reproductions thereof pertaining to details of the Work and which are made a part of the Contract Documents. The term "Plans" has the same meaning as "Drawings". See Drawings

**Project** - The undertaking to be performed under the provisions of the Contract.

**Provide** - Shall be understood to mean furnish and install, complete in place.

**Punch List** - List of incomplete items of work and of items of work which are not in conformance with the Contract.

**Reference Documents** - Bulletins, Standards, Rules, Methods of Analysis or Test, Codes and Specifications of public or private agencies, Engineering Societies, or Industrial Associations. Reference shall be to the latest edition thereof, including Amendments, which are in effect and published at the time the Invitation for Bids is issued, unless a specific edition is identified, in which case reference shall be to such specific edition.

**Right-of-Way** - The area provided by the City for use in constructing the work covered by the Contract, including appurtenances thereto. The right-of-way so designated may be either temporary or permanent.

**Schedule of Values** - A list of all major items, or those requested by the City, including their respective quantities and unit prices for all Work and materials furnished by the Contractor in order to comply with the contract drawings and specifications, whether or not indicated in the approximate quantities or pertaining to the items of work listed therein.

**Service Connection** - All or any portion of a pipeline including sewer laterals, conduit, wire, cable or duct, including meters between a utility main distribution line and an individual customer or customers when served by a single connection.

**Service Provider** - A service provider is an organization, company, or business that provides a service for the Work, but does not perform the Work at the Project site.

**Shall** - Refers to actions by either the Contractor or the City and means the Contractor or City has entered into a covenant with the other party to do or perform the action.

**Shop Drawings** - All diagrams, drawings, illustrations, brochures, schedules, and all other data or submittals required by the Contract to be furnished by the Contractor illustrating fabrication, installation, dimensions, and other aspects of the Work.

**Site** - The property as described in the Special Conditions or as shown on the Drawings where the Project is to be constructed. See Work Area.

# GENERAL CONDITIONS

**Special Conditions** - Part of the Contract Documents that establishes special requirements peculiar to the Work and supplementary to the General Conditions.

**Specifications** - That part of the Contract Documents consisting of the General Conditions, Special Conditions, applicable Standard Specifications, Technical Specifications, other named standard specifications.

**Standard Plans** - The Standard Details for Public Works Construction, (Orange Book Details) sponsored and distributed by RTC of Washoe County, Washoe County, City of Reno, City of Sparks, Carson City and City of Yerington.

**Standard Specifications** - The Standard Specifications for Public Works Construction, (Orange Book Specifications) sponsored and distributed by RTC of Washoe County, Washoe County, City of Reno, City of Sparks, Carson City and City of Yerington; 1996 Edition with Revision No. 1 dated 12-15-1998, Revision No. 2 dated 5-1-2000, Revision No. 3 dated 11-08-2001, Revision No. 4 dated 2-27-2004, and Revision No. 5 dated 2-14-2007.

**Subcontractor** - A subcontractor is a person or entity who has a direct Contract with the Contractor to perform Work at the Site. The term subcontractor means a subcontractor or subcontractor's authorized representative.

**Submittals** - The information which is specified for submission to the Construction Manager in accordance with the specifications.

**Substantial Completion** - Substantial Completion is the stage in the progress of the Work when all Work is sufficiently complete in accordance with the Contract Documents so the City can occupy or utilize the essential components of the Project for its intended use.

**Sub-subcontractor** - A sub-subcontractor is a person or entity who has a Contract with a subcontractor to perform any of the Work at the Site. The term sub-subcontractor means a sub-subcontractor or an authorized representative thereof.

**Superintendent** - the Contractor's authorized representative in responsible charge of the Work.

**Supplier** - Any person, firm, corporation, or organization who supplies materials or equipment for the Work, including that fabricated to a special design, and may also be a subcontractor or a sub-subcontractor, also referred to as Vendor.

**Surety** - The person, firm, corporation, or organization that joins with the Contractor in assuming the liability for the faithful performance of the Work and for the payment of all obligations pertaining to the Work in accordance with the Contract Documents by issuing the Bonds required by the Contract Documents or by law.

**Technical Specifications**- The specialized directions, provisions, and requirements of the Contract Documents for materials, equipment, construction systems, standards, and workmanship.

**Title and Headings** - The titles or headings of the section and subsections in the Contract Documents are intended for convenience of reference and shall not be considered as having bearing on their interpretation.

**Total Base Bid** - The base amount given in the Bid Schedule as either a lump sum bid, or the summation of the unit price bids multiplied by the estimated quantities as set forth in the bid form.

**Utility** - Public or private fixed improvement for the transportation of fluids, gases, power, signals, or communications and shall be understood to include tracks, overhead and underground wires, cables, pipelines, conduits, ducts, sewers or storm drains.

**Work** - The labor, materials, equipment, supplies, and other items necessary for the execution, completion, and fulfillment of the Contract.

**Work Area** - That area which is defined on the Contract Drawings as the City's Right-of-Way and/or temporary easement available to the Contractor for construction purposes. See Site.

# GENERAL CONDITIONS

**Work Directive** - A written directive to the Contractor issued after the effective date of the Contract and signed by the City's Construction Manager ordering an addition, deletion or revision in the Work, or responding to differing or unforeseen conditions under which the Work is to be performed, or to emergencies. A Work Directive may not change the Contract Price or Contract Time, but is the basis and evidence that the parties expect that the change directed or documented by the Work Directive will be incorporated in a subsequently issued Change Order following negotiations of the parties as to its effect, if any, on the Contract Price or Contract Time.

**Working Day** - A calendar day on which weather and other conditions not under the control of the Contractor will permit construction operations to proceed for at least 5 hours of the day with at least seventy-five (75) percent of the normal working force engaged in performing the current critical item(s) of work on the latest favorably reviewed Construction Schedule, exclusive, however, of Saturdays, Sundays, City recognized holidays, and any day that is incumbent upon the Contractor, by means of a Master Labor Agreement, to observe as a holiday. However, if the Contractor elects to work on such days, those days will be considered as a working day.

## GC 1.6 ABBREVIATIONS

Whenever the following terms are used, the intent and meaning shall be as follows:

### **Abbreviations Stand For**

<b>AASHTO</b>	American Association of State Highway and Transportation Officials
<b>ACI</b>	American Concrete Institute
<b>AI</b>	The Asphalt Institute
<b>AIA</b>	American Institute of Architects
<b>AIEE</b>	American Institute of Electrical Engineers
<b>AISC</b>	American Institute of Steel Construction
<b>AISI</b>	American Iron and Steel Institute
<b>AITC</b>	American Institute of Timber Construction
<b>AMCA</b>	Air Moving and Conditioning Association
<b>ANSI</b>	American National Standards Institute (formerly USASI, USAS, ASA)
<b>APA</b>	American Plywood Association
<b>API</b>	American Petroleum Institute
<b>APWA</b>	American Public Works Association
<b>AREA</b>	American Railway Engineers Association
<b>ASCE</b>	American Society of Civil Engineers
<b>ASHRAE</b>	American Society of Heating, Refrigerating and Air Conditioning Engineers
<b>ASLA</b>	American Association of Landscape Architects
<b>ASME</b>	American Society of Mechanical Engineers
<b>ASTM</b>	American Society of Testing and Materials
<b>AWG</b>	American Wire Gauge
<b>AWPA</b>	American Wood-Preserver's Association
<b>AWS</b>	American Welding Society
<b>AWWA</b>	American Water Works Association
<b>CBR</b>	California Bearing Ratio
<b>COE</b>	Department of the Army Corps of Engineers
<b>CRSI</b>	Concrete Reinforcing Steel Institute
<b>DFPA</b>	Douglas Fir Plywood Association
<b>DIPRA</b>	Ductile Iron Pipe Research Association
<b>EIA</b>	Electronic Industries Association
<b>EPA</b>	U.S. Environmental Protection Agency
<b>ETL</b>	Electronic Testing Laboratory
<b>FHWA</b>	Federal Highway Administration
<b>HI</b>	Hydraulic Institute
<b>HMI</b>	Hoist Manufacturers Institute
<b>IAPMO</b>	International Association of Plumbing and Mechanical Officials
<b>ICBO</b>	International Conference of Building Officials
<b>IEEE</b>	Institute of Electrical and Electronic Engineers

# GENERAL CONDITIONS

<b>IES</b>	Illuminating Engineering Society
<b>IPCE</b>	International Power Cable Engineers Association
<b>ISA</b>	Instrument Society of America
<b>MUTCD</b>	Manual on Uniform Traffic Control Devices
<b>NAAMM</b>	National Association of Architectural Metal Manufacturers
<b>NBFU</b>	National Board of Fire Underwriters
<b>NBS</b>	National Bureau of Standards
<b>NDEP</b>	Nevada Department of Environmental Protection
<b>NDOT</b>	Nevada Department of Transportation
<b>NEC</b>	National Electric Code
<b>NEMA</b>	National Electrical Manufacturers Association
<b>NFPA</b>	National Fire Protection Association
<b>NOSHA</b>	Nevada Occupational Safety and Health Act
<b>NRS</b>	Nevada Revised Statutes
<b>NSF</b>	National Sanitation Foundation
<b>NWMA</b>	National Woodwork Manufacturers Association
<b>OSHA</b>	Occupational Safety and Health Act
<b>PCA</b>	Portland Cement Association
<b>RTC</b>	Regional Transportation Commission
<b>SMACNA</b>	Sheet Metal and Air Conditioning Contractors National Association
<b>SSPC</b>	Structural Steel Painting Council
<b>TCA</b>	Tile Council of America
<b>UBC</b>	Uniform Building Code
<b>UPC</b>	Uniform Plumbing Code
<b>U/L or UL</b>	Underwriters Laboratories
<b>WCLIB</b>	West Coast Lumber Inspection Bureau

# GENERAL CONDITIONS

## SECTION 2.0 CONTRACT ADMINISTRATION AND RESPONSIBILITIES: OWNER'S REPRESENTATIVE, CONSTRUCTION MANAGER, DESIGN CONSULTANT AND CONTRACTOR

### GC 2.1 ADMINISTRATION

The Owner's Representative, the Construction Manager, and the Design Consultant will provide administration of the Contract as hereinafter discussed. The duties, responsibilities and limitations of authority of the Design Consultant and the Construction Manager as the representatives of the City during construction, as set forth in the Contract Documents, will not be modified or extended without approval of the City.

In case of the termination of the employment of the Design Consultant or the Construction Manager, the City shall appoint a Design Consultant or a Construction Manager whose status under the Contract Documents shall be that of the former Design Consultant or Construction Manager, respectively.

### GC 2.2 OWNER'S REPRESENTATIVE

#### 2.2.1 GENERAL

The Owner's Representative has the authority to act on behalf of the City on change orders, progress payments, Contract decisions, acceptability of the Contractor's work, and early possession.

#### 2.2.2 CHANGE ORDERS

The Owner's Representative has the authority to accept or reject change orders and cost proposals submitted by the Contractor or as recommended by the Construction Manager.

#### 2.2.3 PROGRESS PAYMENTS

The Owner's Representative has the authority to accept or reject requests for progress payments which have been submitted by the Contractor and recommended by the Construction Manager.

#### 2.2.4 CONTRACT DECISIONS

Should the Contractor disagree with the Construction Manager's decision with respect to the Contract, the Contractor may appeal to the Owner's Representative in accordance with the provisions of the Contract.

#### 2.2.5 ACCEPTABILITY OF WORK

The Owner's Representative has the authority to make the final determination of the acceptability of the Work. The Owner's Representative also has the authority to accept or reject the Design Consultant's recommendations regarding retention of non-conforming work as provided.

### GC 2.3 CONSTRUCTION MANAGER

#### 2.3.1 GENERAL

The Construction Manager is a representative of the City employed to act as advisor and consultant to the City in construction matters related to the Contract.

All instructions to the Contractor and all communications from the Contractor to the City or the Design Consultant shall be forwarded through the Construction Manager. The Construction Manager will have authority to act on behalf of the City only to the extent provided in the Contract Documents. The City has delegated its authority to the Construction Manager to make initial decisions regarding questions which may arise as to the quality or acceptability of materials furnished and work performed, and as to the manner of performance and rate of progress of the Work under the Contract. The Construction Manager shall interpret the intent and meaning of the Contract and shall make initial decisions with respect to the Contractor's fulfillment of the Contract and the Contractor's entitlement to compensation. The Contractor shall look initially to the Construction Manager in matters relating to the Contract.

#### 2.3.2 REPRESENTATIVE

The Construction Manager will generally be represented at the site by a resident Construction Manager, a resident engineer, or a resident inspector who will observe the progress, quality, and quantity of the Work to determine, in general, if the Work is proceeding in accordance with the intent of the Contract Documents. The

# GENERAL CONDITIONS

Construction Manager shall not be responsible for the Contractor's construction means, methods, techniques, sequences, or procedures, or for safety precautions and programs in connection with the Work.

In accordance with the provisions detailed elsewhere in these General Conditions, the Construction Manager will make decisions relative to all matters of interpretation or execution of the Contract Documents.

## **2.3.3 INSPECTION OF CONSTRUCTION**

The Construction Manager shall have the authority to reject Work and materials which do not conform to the Contract Documents, and to require special inspection or testing.

The Construction Manager may employ one or more inspectors to observe the Work and to act in matters of construction under this Contract. An inspector is not authorized to revoke, alter, or waive any requirements of the Contract Documents. The inspector is authorized to call to the attention of the Contractor any failure of the Work, materials or workmanship to conform to the Contract Documents. The inspector shall have the authority to reject materials or, in any emergency, suspend the Work. The Contractor may appeal any such issue which it disagrees with to the Construction Manager for decision.

## **2.3.4 ACCEPTABILITY OF THE WORK**

The Construction Manager shall make a recommendation to the City as to the acceptability of the Work.

## **2.3.5 CHANGE ORDERS**

The Construction Manager has the authority to initiate change orders; to reject change orders proposed by the Contractor or Design Consultant; to negotiate and recommend acceptance of change orders; or to order minor changes in the Work at no cost or time extension to the City.

## **2.3.6 CONSTRUCTION SCHEDULE**

The Construction Manager has the authority to review and recommend acceptance of the Progress Schedule submitted by the Contractor at the start of the Work and subsequent revisions for conformance to the specified sequence of work and logic.

## **2.3.7 PROGRESS PAYMENTS**

The Construction Manager has the authority to recommend acceptance or rejection of requests for progress payments which have been submitted by the Contractor.

## **2.3.8 FINAL ACCEPTANCE**

The Construction Manager, with the assistance of the Design Consultant, will conduct inspections to determine substantial completion and final construction completion of the Work, and will receive and forward to the City, for the City's acceptance, written warranties, and related documents required by the Contract and assembled by the Contractor. The Construction Manager will recommend acceptance of the work by the City.

## **GC 2.4 DESIGN CONSULTANT**

### **2.4.1 GENERAL**

The Design Consultant will have the authority to act on behalf of the City to the extent provided in the Contract Documents.

### **2.4.2 INTERPRETATIONS**

The Design Consultant has the authority to be the initial interpreter of the technical requirements of the Contract Documents. Either party to the Contract may make written request to the Construction Manager for interpretations necessary for the proper execution or progress of the Work. The Construction Manager shall refer such written requests of the Contractor to the Design Consultant, who will render such interpretations. Where the Contractor has requested an interpretation from the Construction Manager, or been notified by the Construction Manager that such interpretation has been requested by the City, any Work done before receipt of such interpretations, if not in accordance with same, is subject to being removed and replaced or adjusted as directed by the Construction Manager without additional expense to the City.

### **2.4.3 ACCEPTABILITY OF THE WORK**

The Design Consultant has the authority to make a recommendation as to the acceptability of the Work. The Design Consultant has the authority to recommend acceptance regarding the retention of defective work.

# GENERAL CONDITIONS

## 2.4.4 SITE OBSERVATIONS

The Design Consultant may visit the site at intervals appropriate to the stage of construction to become familiar with the progress and quality of the Work and to determine if the Work is proceeding in accordance with the Contract Documents. However, the Design Consultant will not be required to make extensive or continuous on-site inspections to check the quality or quantity of the Work.

## 2.4.5 SUBMITTALS

The Design Consultant has the authority to review and take other appropriate action upon the Contractor's submittals of shop drawings, product data, and samples for conformance with the design concept of the Work and the Contract Documents.

## GC 2.5 CITY

### 2.5.1 GENERAL

The City, acting through the Owner's Representative or the Construction Manager, shall have the authority to act as the sole judge of the Work and materials with respect to both quantity and quality as set forth in the Contract.

### 2.5.2 ATTENTION TO WORK

The City shall notify the Contractor of the name of the individual designated as the Owner's Representative and the name of the individual designated by the Construction Manager to act as the Construction Manager's representative with the City's authority. The Construction Manager's designated representative will regularly be at the site of the Work.

### 2.5.3 INSPECTION

In addition to the Construction Manager, the City may employ one or more inspectors to observe the Work and to act in matters of construction under this Contract. An inspector is not authorized to revoke, alter, or waive any requirements of the specifications. The inspector is authorized to call to the attention of the Contractor any failure of the Work or materials to conform to the Contract Documents. The inspector shall have the authority to reject materials or, in any emergency, suspend the Work. The Contractor may appeal any such issue which it disagrees with to the Construction Manager for its decision.

Separate and independent from the inspection above, the Project may be inspected by Building Officials or other agency officials (i.e. Fire Officials, Nevada Department of Transportation) for code compliance. Such inspectors shall have the authority provided to them by local jurisdiction.

If upon routine inspection by the City a problem is found that creates a safety hazard for either City employees or the general public and the General Contractor or subcontractor is not on site, the City employees will correct the safety hazard and the General Contractor will be charged for the City's labor, materials and equipment for making the correction plus a fixed penalty fee of \$500 per occurrence.

### 2.5.4 CITY'S RIGHT TO CARRY OUT THE WORK

If the Contractor and/or his/her surety defaults or neglects to carry out the Work in accordance with the Contract Documents, and fails within seven (7) days after receipt of written notice from the City to commence correction of such default or neglect with diligence and promptness, the City may make good such deficiencies.

Whenever, in the opinion of the Construction Manager, the Contractor has not taken sufficient precautions for the safety of the public or the protection of the Work to be constructed under this contract, or of adjacent structures or property which may be injured by processes of construction on account of such negligence, and whenever in the opinion of the Construction Manager, an emergency shall arise and immediate action shall be considered necessary in order to protect public or private, personal or property interest, then and in that event the Construction Manager, with or without notice or prior legal process to the Contractor, may provide suitable protection to the said interests by causing such work to be done and such material to be furnished as shall provide such protection as the Construction Manager may consider necessary and adequate.

In either case an appropriate Change Order shall be issued unilaterally deducting from the payments due the Contractor the cost of correcting such deficiencies and/or for performing such work, including compensation for the Design Consultant's, the Construction Manager's, and City's additional services made necessary by such default, neglect, failure or emergency.

# GENERAL CONDITIONS

The performance of such emergency work under the direction of the Construction Manager shall in no way relieve the Contractor from any damages which may occur during or after such precaution has been taken by the Construction Manager.

## **2.5.5 CITY'S RIGHT TO USE OR OCCUPY**

The City reserves the right to use the sewer, water, reclaimed water, storm drains and roadway systems as well as the right to occupy and use any completed part or parts of the Work, providing these parts and facilities have been approved for use or occupancy by the City. The City anticipates to use the sewer, water, reclaimed water, storm drains and roadway systems throughout the construction contract, with no increase in the contract amount. Use of the systems will not change the contractual obligations of the Contractor regarding security, damage to the Work, insurance, the period for corrections to the Work, and the commencement of Warranties. The exercise of this right shall in no way constitute an acceptance of the total Work of this Contract, or any other part of the Work, nor shall it in any way prejudice the City's rights in the Contract, or any bonds guaranteeing the same. The Contract shall be deemed completed only when all the Work Contracted has been duly and properly performed and accepted by the City.

Prior to such occupancy or use, the City and Contractor shall agree in writing regarding the responsibilities assigned to each of them for payments, security, maintenance, heat, utilities, damage to the Work, insurance, the period for correction of the Work, and the commencement of warranties required by the Contract Documents.

In exercising the right to occupy or use completed parts of the Work, the City shall not make any use which will materially increase the cost to the Contractor without increasing the Contract Amount, nor materially delay the completion of the Contract without extending the time for completion.

The part or parts of the Work, if any, which the City anticipates to use or occupy during construction are generally noted in the Special Conditions. Failure to note a part or parts of the Work for use or occupancy shall not limit the City's right to use or occupy part or parts of the Work not noted.

## **2.5.6 CITY'S RIGHT TO PERFORM WORK AND TO AWARD SEPARATE CONTRACTS**

The City reserves the right to perform the Work related to the Project with the City's own forces, and to award separate Contracts in connection with the Project or other Work on the site under these or similar Conditions of the Contract. If the Contractor claims that delay, damage, or additional cost is involved because of such action by the City, the Contractor shall make such claim as provided elsewhere in the Contract Documents.

When separate contracts are awarded for different portions of the Project or other Work on the Site, the term "Contractor" in the Contract Documents in each case shall mean the contractor who executes each separate agreement. The City will provide for the coordination of the Work of the City's own forces and of each separate contractor with the Work of the Contractor, who shall cooperate therewith.

## **2.5.7 PROPERTY RIGHTS IN MATERIALS**

Nothing in this Contract shall be construed as vesting in the Contractor any right of property in the materials used after they have been attached or affixed to the work or the soil, or after payment has been made for materials delivered to the Site of the Work, or stored subject to or under the control of the City. All such materials shall become the property of the City upon being so attached or affixed or upon payment for materials delivered to the Site of the Work or stored subject to or under the control of the City.

Soil, stone, gravel, and other materials found at the Site of the Work and which conform to the plans and specifications for incorporation into the Work may be used in the Work. No other use shall be made of such materials except as may be otherwise described in the plans and specifications.

## **2.5.8 CITY OBSERVED HOLIDAYS**

The following are the legal Holidays observed by the City. The Contractor shall not perform any Work on a City observed Holiday. When the holiday falls on a Saturday, it is observed the prior Friday; when the holiday falls on a Sunday it is observed on the following Monday:

New Years Day - January 1<sup>st</sup>

Martin Luther King Day - 3<sup>rd</sup> Monday of January

Presidents Day - 3<sup>rd</sup> Monday of February

# GENERAL CONDITIONS

Memorial Day - last Monday of May  
Independence Day - July 4<sup>th</sup>  
Labor Day - 1<sup>st</sup> Monday of September  
Nevada day - last Friday of October  
Veterans Day - November 11<sup>th</sup>  
Thanksgiving Day - 4<sup>th</sup> Thursday of November  
Family Day - 4<sup>th</sup> Friday of November  
Christmas Day - December 25<sup>th</sup>

Any other legal holiday declared by the President of the United States, the Governor of Nevada, or the Carson City Board of Supervisors.

## **2.5.9 AUDIT OF RECORDS**

The City, acting through its Internal Auditor or an outside appointed auditor, may audit or direct the audit of any and all records of the Contractor pertaining to this Contract. In case any portion of this Contract is funded through NDOT, FHWA, or other agencies, they, too, shall have the right to audit any and all records of the Contractor pertaining to this Contract. Contractor agrees by entering this Contract to provide access to any and all records of Contractor pertaining to this Contract for a period of three (3) years after Contract acceptance.

## **2.5.10 ATTORNEY'S FEES**

In the event the Contractor files a complaint or writ naming the City as a party and the Contractor fails to obtain all the relief requested in the complaint or writ, the Contractor shall pay the City reasonable attorney fees and the costs for participating in the litigation. It is specifically agreed that reasonable attorney fees shall be \$150.00 per hour for City-employed attorneys or the usual per hour fee charged by any other attorney retained by the City to participate in the litigation.

## **GC 2.6 CONTRACTOR**

### **2.6.1 OFFICE**

The Contractor's office at the Project Site is hereby designated as the legal address of the Contractor for the receipt of documents, samples, notices, letters, and other articles of communication. Should the Contractor not maintain an office at the Project site, the Contractor shall notify the Construction Manager regarding the Contractor's legal address for its receipt of Project documents.

### **2.6.2 CONTRACTOR'S REPRESENTATIVE**

At the pre-construction conference (see GC 3.9) the Contractor shall notify the City in writing of the name of the person and an alternate, if applicable, who will act as the Contractor's Representative(s) and shall have the authority to act in matters relating to this Contract. Such notification shall include the Representative's list of projects for which he/she held the position of Contractor's Representative for a three (3) year period. The list shall include the type of construction, the cost of construction, and the name of the owner(s) or agency(ies) including telephone numbers of contact persons. The Contractor's Representative shall have at least three (3) years of experience related to similar Work as described in the Contract Documents.

The Engineer and/or the City may reject the request for Contractor's Representative if, in the opinion of the Engineer and/or the City, the Contractor's Representative is not qualified to perform the Work. No additional payment or compensation will be considered for the rejection and subsequent hiring of Contractor's Representative. A replacement Contractor's Representative for a previously approved Contractor's Representative shall meet the same qualifications as listed above. Contractor shall submit the information requested above to demonstrate that the replacement Contractor's Representative meets the qualifications listed above.

The Contractor, acting through its Representative, shall give personal attention to, and shall manage the Work, so that it shall be prosecuted faithfully. The Contractor's Representative shall be an employee of the Contractor. Upon written request of the Contractor, this requirement may be waived by the City.

At all times during the progress of the Work, the Contractor's representative shall be personally present at the Project site, or a designated alternate shall be at the Project site who has the authority to act in matters relating to the Contract. The Contractor's representative or designated alternate shall have the authority to carry out the provisions of the Contract and to supply materials, equipment, tools, and labor without delay for

# GENERAL CONDITIONS

the performance of the Work. If neither the Contractor's representative nor a designated alternate is at the Project site, the City acting through the Construction Manager shall have the authority to suspend the work until such a representative is at the Project site.

Before initial work is begun on the Contract, the Contractor shall file with the Construction Manager, and City, addresses and telephone numbers where the Contractor's and all subcontractors' representatives can be reached for emergency call outs during all hours, including nights and weekends, when work is not in progress.

## **2.6.3 CONSTRUCTION PROCEDURES**

The Contractor will supervise and direct the Work. The Contractor shall determine the means, methods, techniques, sequences, and procedures of construction, except in those instances where the City, to define the quality of an item of work, specifies in the Contract a means, method, technique, sequence, or procedure for construction of that item of Work.

## **2.6.4 CONTRACTOR'S EMPLOYEES**

The Contractor shall be responsible for the safety, adequacy, efficiency, and sufficiency of its employees.

If any person employed by the Contractor or its subcontractors, appear to the Construction Manager to be disorderly, disrespectful, rude, or intoxicated, such person shall be discharged from the site immediately by the Contractor.

## **2.6.5 SUBCONTRACTORS**

Subcontractors will not have a direct relationship with the City. The persons engaged in the Work, including employees of subcontractors, suppliers and service providers, will be considered employees of the Contractor. The Contractor will be responsible for their work and their work shall be subject to the provisions of the Contract. The Contractor is as fully responsible to the City for the acts and omissions of its subcontractors and of persons either directly or indirectly employed by them as the Contractor is for the acts and omissions of persons directly employed by the Contractor. Nothing contained in the Contract Documents shall create any Contractual relationship between any subcontractor and the City. References in the Contract Document to actions required of subcontractors, manufacturers, suppliers, or any party other than the Contractor, the City, the Construction Manager, or the Design Consultant shall be interpreted as requiring that the Contractor shall require such subcontractor, manufacturer, supplier, or party to perform the specified action, unless the Contract Documents specifically state that the Work is not included in the Contract.

The Contractor shall employ only subcontractors who are properly licensed in accordance with Nevada State Law. Changes to subcontractors listed in the Bid shall be made only with the approval of the City.

## **2.6.6 CONTRACTOR'S EQUIPMENT AND FACILITIES**

The Contractor shall furnish and maintain in good condition all equipment and facilities as required for the proper execution and inspection of the Work. Such equipment and facilities shall meet all requirements of applicable ordinances and laws.

## **2.6.7 CITY-CONTRACTOR COORDINATION**

### **A. Service of Notice**

Notice, order, direction, request, or other communication given by the Construction Manager or City to the Contractor shall be deemed to be well and sufficiently given to the Contractor if delivered to the Contractor's Representative, or to the Contractor's address provided in the Bid Proposal.

### **B. Suggestions to Contractor**

Plans or methods of work suggested by the City, the Construction Manager, or the Design Consultant to the Contractor, but not specified or required, if adopted or followed by the Contractor in whole or in part, shall be used at the risk and responsibility of the Contractor. The City, Construction Manager, or the Design Consultant assume no responsibility therefore, and in no way will be held liable for any defects in the Work which may result from or be caused by use of such suggested plan or method of work.

### **C. Cooperation**

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The Contractor shall conduct its operations so as to interfere as little as possible with those of other contractors or subcontractors on or near the Work. It is expressly understood that the City has the right and may award other contracts in connection with the Work so long as it does not unreasonably interfere with the Work under this Contract.

The Contractor shall afford the City, the Construction Manager and separate contractors reasonable opportunity for the introduction and storage of their materials and equipment and the execution of their work, and shall connect and coordinate the Work with the others as required by the Contract Documents.

If any part of the Contractor's Work depends for proper execution or results upon the Work of the City or any separate contractor, the Contractor shall, prior to proceeding with the Work, promptly report to the Construction Manager any apparent discrepancies or defects in such other work that render it unsuitable for such proper execution and results. Failure of the Contractor to so report shall constitute an acceptance of the City's or separate contractor's work as fit and proper to receive the Work, except as to latent defects which subsequently become apparent in such work by others.

If requested by the Contractor, the City shall arrange meetings with other contractors performing work on behalf of the City to plan coordination of construction activities. The City shall keep the Contractor informed of the planned activities of other contractors.

Where one contractor's operations are within the limits or adjoin the operations of another contractor, each shall be responsible to the other for any damage, injury, loss, or expense which may be suffered on account of interference of operations, neglect or failure to finish work at the proper time, or of any other cause.

Differences and conflicts arising between the Contractor and other contractors employed by the City or between the Contractor and the workers of the City with regard to their work shall be submitted to the Construction Manager for his/her decision in the matter. If such separate contractor files a claim against the City on account of any delay or damage alleged to have been caused by the Contractor, the City shall notify the Contractor who shall, at the City's election, defend such claims at the Contractor's expense. If any judgment or award against the City arises from any such claim whether defended by City or by Contractor, the Contractor shall pay or satisfy said judgment or award and shall reimburse the City for all fees, including attorneys' fees, and costs which the City has incurred or for which it is liable.

## **2.6.8 PERMITS**

Unless specifically stated in the Special Conditions to be provided by the City, the Contractor shall apply for, obtain, and comply with all terms, conditions and requirements attached to all permits, licenses, and agreements required by federal, state, or local agencies to perform work, construct, erect, test and start up any equipment or facility for this Contract. The City will provide, at no cost to the Contractor, the City "Building Permit" and/or the City "Engineering Permit". Where operating permits are required, the Contractor shall apply for and obtain such operating permits in the name of the City and provide the permit in an appropriate file folder when the City accepts substantial completion of the equipment or facility. The Contractor shall give all notices necessary or incidental to the due and lawful prosecution of the Work.

The Contractor shall apply for and obtain in its name all necessary permits and shall be responsible for satisfying all code requirements, calling for inspections, and obtaining final approvals. Code inspections will be coordinated with the Construction Manager. The Contractor shall comply with all conditions stipulated in the permits. The Contractor shall include in its Bid the fees for any permits and inspections that are required.

The Contractor shall also apply for and obtain all safety permits for excavations, tunneling, trenches, construction (building structure, scaffolding, or false work) and demolition required by OSHA. Any permits, licenses, agreements, and fees therefore required for the performance of work under this Contract and not specifically mentioned herein as having been obtained and paid by the City shall be included in the Contractor's Bid price. The cost of inspections associated with complying with permits, licenses, and agreements are to be included in the bid price. No time extensions shall be granted for time lost due to violations of permits.

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The Contractor shall submit copies of all required Permits to the Construction Manager prior to proceeding with the Work covered by the respective Permits. If copies of all required Permits are not submitted to the Construction Manager prior to proceeding with the Work covered by the respective Permits, the Construction Manager may suspend the Work on the entire project, without any additional time or compensation to the Contractor, until the copies of the Permits are received.

## **2.6.9 CONTRACTOR'S RESPONSIBILITY FOR THE WORK AND MATERIALS**

Until final acceptance of the Work, the Contractor shall have the charge and care of the Work and of the materials to be used therein, the Contractor shall bear the risk of injury, loss, or damage to any part thereof (regardless of whether partial payments have been made on such damaged portions of the Work) by the action of the elements or from any other cause, whether or not arising from the non-execution of the Work. The Contractor shall rebuild, repair, restore, and make good all injuries, losses, or damages to any portion of the Work or the materials occasioned by any cause, before its completion and acceptance, and shall bear the expense thereof, except for such injuries, losses, or damages as are directly and proximately caused by acts of the City. Where necessary to protect the work or materials from damage, the Contractor shall, at his/her expense, provide suitable drainage and erect such temporary structures as are necessary to protect the work or materials from damage. The suspension of work or the granting of an extension of time from any cause whatever shall not relieve the Contractor of his/her responsibility for the work and materials as herein specified.

In an emergency affecting the safety of life or property, including adjoining property, the Contractor, without special instruction or authorization, is authorized to act at his/her discretion to prevent such threatened loss or injury.

## **2.6.10 SURVEYS, LINES AND GRADES**

The Contractor shall be responsible for all construction surveying and the setting of all construction control stakes. All construction surveying must be performed by the designated Project Surveyor who shall be a Nevada Licensed Professional Land Surveyor, or the Surveyor's subordinates. Contractor shall provide the name, license number and contact information of the Project Surveyor to the Construction Manager prior to the start of Work.

The Contractor shall be responsible for directing the Project Surveyor to establish all the survey control staking to accomplish the Work within the tolerances established in the Technical Specifications and per the requirements of the Nevada Administrative Code, for Construction Surveys, Sections 625.760 through 625.780.

## **2.6.11 LAWS TO BE OBSERVED**

The Contractor shall keep fully informed of existing and pending county, state, and national laws and regulations and all municipal ordinances and regulations of the City which in any manner affect those engaged or employed in the Work and of all such orders and decrees of bodies having any jurisdiction or authority over the same. The Contractor shall protect and indemnify the City and its officers, agents, employees, and volunteers against any claim or liability arising from or based on the violation of any such laws, ordinances, regulations or orders, whether by the Contractor or its employees. If any discrepancy or inconsistency is discovered in the drawings, specifications or Contract for the Work in relation to any such law, ordinance, regulations, order or decree, the Contractor shall immediately report the same to the Construction Manager in writing.

The Contractor shall comply with all Federal, State and local laws relative to conducting business in Carson City including, but not limited to, licensing, labor and health laws, and applicable NRS. The laws of the State of Nevada will govern as to the interpretation, validity and effect of the Bid, its award, and the Contract.

### **A. Certified Payrolls - If Prevailing Wage Rates are Required**

The Contractor and each subcontractor shall keep an accurate payroll record, showing the name, address, work classification, straight time, and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed in connection with the Project.

The payroll records shall be certified and shall be submitted weekly to the Construction Manager. Submission of the certified payrolls shall be a condition precedent for processing the monthly progress payment. The General Contractor shall collect the wage reports from the Sub-Contractors

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and ensure the receipt of a certified copy of each weekly payroll for submission to the City as one complete package.

Pursuant to NRS 338.060 and 338.070, the Contractor hereby agrees to forfeit, as a penalty to the City, 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/her, or is not reported to the City as required by NRS 338.070.

## 2.6.12 SAFETY

### A. Contractor's Safety Responsibility

The Contractor shall be solely and completely responsible for conditions of the job site, including safety of all persons and property during performance of the Work. This requirement shall apply continuously and not be limited to normal working hours. Safety provisions shall conform to U.S. Department of Labor (OSHA) Standards, the Nevada Occupational Safety and Health Act, and all other applicable Federal, State, County, and local laws, ordinances, codes, the requirements set forth below, and any regulations that may be detailed in other parts of these Contract Documents. Where any of these are in conflict, the more stringent requirement shall be followed.

No provision of the Contract Documents shall act to make the City, the Construction Manager or any party other than the Contractor responsible for safety. The Construction Manager shall not have authority for safety on the Project. The Contractor shall indemnify, defend (not excluding the City's right to participate) and hold harmless the City, Construction Manager, or other authorized representatives of the City, from and against any and all actions, damages, fines, suits, and losses arising from the Contractor's failure to meet all safety requirements and/or provide a safe work site.

If death or serious injuries or serious damages are caused, the accident shall be reported immediately to the Construction Manager, the City and OSHA. In addition, the Contractor must promptly report in writing to the Construction Manager all accidents whatsoever arising out of, or in connection with, the performance of the Work whether on, or adjacent to, the site giving full details and statements of witnesses. The Contractor shall make all reports as are, or may be, required by any authority having jurisdiction, and permit all safety inspections of the Work being performed under this Contract.

If a claim is made by anyone against the Contractor or any subcontractor on account of any accident, the Contractor shall promptly report the facts in writing to the Construction Manager, giving full details of the claim.

### B. Safety Program

The Contractor shall establish, implement, and maintain a written injury prevention program. Before beginning the Work, the Contractor shall prepare and submit to the Construction Manager a Safety Program that provides for the implementation of all of the Contractor's safety responsibilities in connection with the Work at the site and the coordination of that program and its associated procedures and precautions with safety precautions and procedures of each of its subcontractors. The Contractor shall be solely responsible for initiating, maintaining, monitoring, coordinating, and supervising all safety programs, precautions, and procedures in connection with the Work and for coordinating its programs, precautions, and procedures of any other prime Contractors and subcontractors performing work at the site.

### C. Safety Supervisor

The Contractor shall appoint an employee as Safety Supervisor who is qualified and authorized to supervise and enforce compliance with the Safety Program. The Contractor shall notify the Construction Manager in writing prior to the commencement of work of the name of the person who will act as the Contractor's Safety Supervisor.

### D. Excavation Safety

The Contractor shall submit, in advance of excavation five feet or more in depth, detailed plans showing the design of shoring, bracing, sloping, or other provisions to be made for worker protection from hazard of caving ground during such excavation, and protection to adjacent structures during

# GENERAL CONDITIONS

such excavation. Design calculations and plans must be sealed by a Civil or Structural Engineer registered in the State of Nevada.

Prior to commencing any excavation, the Contractor shall designate in writing to the Construction Manager the "Competent Person(s)" with the authority and responsibilities designated in the Construction Safety Orders.

## **E. Emergencies**

In emergencies affecting the safety or protection of persons, the Work, or property at the site or adjacent thereto, the Contractor, without special instruction or authorization from the Construction Manager, is obligated to act to prevent threatened damage, injury or loss. The Contractor shall give the Construction Manager prompt notice if the Contractor believes that any changes in the Work or variations from the Contract Documents have been caused thereby. The Contractor shall not resume construction during an emergency, or after an emergency until directed to by the Construction Manager.

## **F. Safety Violations**

The City shall have the authority to require the removal from the Project of any employee in responsible charge of the Work where safety violations occur.

### **2.6.13 FIRE PREVENTION AND CONTROL**

Before setting any fires whatsoever, the Contractor shall notify the responsible Federal, State, or local agency having jurisdiction for the area concerned. The Contractor shall abide by such rules and instructions as to fire prevention and control and as to the place for burning as the Federal, State, or local agency having jurisdiction may prescribe. The Contractor shall take all necessary steps to prevent his/her employees from setting fires not required in the prosecution of the work. The Contractor shall be responsible for preventing the escape of fires set in connection with the work and shall under the direction of the appropriate agency, or, in the absence of an officer from any such agency, acting independently, extinguish all fires which may escape the work, whether or not set directly or indirectly as a result of his/her operations.

The Contractor shall be fully responsible for any damage caused to public and/or private property as a result of his/her burning operations, and shall leave no fires unattended at any time during these operations. He/She shall have available at the site at all times when burning is in progress, adequate equipment to extinguish the fires set by him/her, and to control the spread of fire outside of the burning areas. Burning during high wind conditions shall be expressly prohibited in order to prevent fire hazard, regardless of the prevailing season.

### **2.6.14 ERRORS OR DISCREPANCIES NOTED BY CONTRACTOR**

It is the duty of the Contractor to promptly notify the Construction Manager in writing of any design, materials, or specified method that the Contractor believes may prove defective or insufficient. If the Contractor believes that a defect or insufficiency exists in design, materials, or specified method and fails to promptly notify the Construction Manager in writing of this belief, the Contractor waives any right to assert that defect or insufficiency in design, materials, or specified method at any later date in any legal or equitable proceeding against the City, or in any subsequent alternative dispute resolution or settlement conference between the City and the Contractor.

The Construction Manager, on receipt of any such notice, will promptly investigate the circumstances and give appropriate instructions to the Contractor. Until such instructions are given, any work done by the Contractor after he/she comes to the belief that a defect or insufficiency exists in materials, or specified method which is directly or indirectly affected by such alleged defect or insufficiency in design, materials, or specified method will be at his/her own risk and he/she shall bear all costs arising therefrom.

If the Contractor, either before commencing work or in the course of the work, finds any discrepancy between the specifications and the plans or between either of them and the physical conditions at the site of the work or finds any error or omission in any of the plans or in any survey, he/she shall promptly notify the Construction Manager of such discrepancy, error, or omission. If the Contractor observes that any plans or specifications are at variance with any applicable law, ordinance, regulation, order, or decree, he/she shall promptly notify the Construction Manager in writing of such conflict. The Construction Manager, on receipt of any such notice, will promptly investigate the circumstances and give appropriate instructions to the Contractor. Until such instructions are given, any work done by the Contractor after his/her discovery of such error, discrepancy, or conflict will be at his/her own risk and he/she shall bear all costs arising therefrom.

# GENERAL CONDITIONS

## 2.6.15 INDEMNIFICATION

The Contractor hereby agrees to indemnify, hold harmless, and defend, not excluding the City's right to participate, the Construction Manager, the City and its elected officials, officers, employees, agents, volunteers, other retained consultants and representatives, from and against any and all liability, claims, actions, damages, legal or administrative proceedings, losses and expenses, including without limitations, reasonable attorney's fees and costs (including attorney's fees in establishing indemnification of whatsoever nature), litigation costs, penalties, fines, judgments, or decrees by reason of any death, injury or disability to or of any person and/or damages to any property or business, including loss of use, arising out of any alleged negligent or willful acts, errors or omissions of the Contractor, Contractor's employees, agents, or subcontractors arising out of or suffered, directly or indirectly, by reason of or in connection with the performance of the Work under this Contract.

The Contractor guarantees the payment of all claims for materials, supplies and labor, and all other claims against it or any subcontractor, made in connection with this Agreement.

## 2.6.16 INSPECTIONS

The right of inspection and acceptance or rejection of contracted work by the City shall not make the Contractor an agent of the City, and the liability of the Contractor for all damages to persons or to public or private property, arising from the Contractor's execution of the work, shall not be lessened because of such inspections.

## 2.6.17 CONTRACTOR IS AN INDEPENDENT CONTRACTOR

This Contract does not create an employee/employer relationship between the parties. It is the parties' intention that the Contractor will be an independent contractor and not Carson City's employee for all purposes, including but not limited to the application of the Fair Labor Standards Act, the Federal Unemployment Tax Act, the provisions of the Internal Revenue Code, and Nevada State revenue and taxation laws. The Contractor will retain sole and absolute discretion in the judgment of the manner and means of carrying out the Contractor's activities and responsibilities hereunder. The Contractor agrees that it is a separate and independent enterprise from the public employer, that it has full opportunity to find other business, that it has made its own investment in its business and that it will utilize industry standard of care necessary to perform the Work. This Contract shall not be construed as creating any joint employment relationship between the Contractor and the City, and the City will not be liable for any obligation incurred by the Contractor, including but not limited to unpaid minimum wages and/or overtime premiums.

## 2.6.18 VALUE ENGINEERING PROPOSALS

Value Engineering Proposals (VEP) may be submitted by the Contractor in writing for modifying the plans, specifications or other requirements of the Contract for the purpose of reducing the total cost of construction without reducing design capacity or quality of the finished product. If accepted, net savings resulting from a VEP will be shared by the City and the Contractor on a 50%-50% basis.

The requirements herein apply to all VEP's initiated and developed by the Contractor and which are identified as such at the time of submission. Nothing herein shall be construed as requiring consideration or approval of a VEP submitted hereunder.

Each VEP shall result in a net savings over the Contract costs without impairing essential functions and characteristics of the item(s) or of any other part of the project, including but not limited to environmental considerations, service life, reliability, economy of operation, ease of maintenance, desired aesthetics and safety.

Submit the following information with each VEP:

- 1 A statement that the proposal is submitted as a VEP;
- 2 A statement concerning the basis for the VEP and benefits to the City together with an itemization of the Contract requirements affected by the VEP;

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- 3 A detailed estimate of the cost under the existing Contract and under the VEP;
- 4 Proposed specifications and recommendations as to how such VEP changes are to be accomplished; and
- 5 A statement as to the time by which a Contract Change Order adopting the VEP must be issued so as to obtain the maximum cost effectiveness.

The VEP will be processed in the same manner as prescribed for any other proposal which would necessitate issuance of a Contract Change Order. The City may accept in whole or in part any VEP by issuing a Contract Change Order which will identify the VEP on which it is based. The City will not be liable for failure to accept or act upon any VEP submitted pursuant to these requirements nor for any delays to the work attributable to any such proposal. Until a proposal is effected by Contract Change Order, Contractor remains obligated to perform under the terms and conditions of the Contract. If an executed Contract Change Order has not been issued by the date upon which the proposal specifies that a decision thereon should be made, or such date as the Contractor may have subsequently specified in writing, such proposal shall be deemed rejected.

The Contract Change Order effecting the necessary Contract modification will establish the net savings agreed upon, will provide for adjustment in the Contract prices and will indicate the new savings to be equally divided between the City and the Contractor. Contractor shall absorb all costs incurred in preparing a VEP for submission. All reasonably incurred costs of reviewing and administering the VEP will be borne by the City. The City reserves the right to include in the agreement any conditions it deems appropriate for consideration, approval, and implementation of the proposal. The Contractor's 50% share of the net savings shall constitute full compensation to him/her for effecting all changes pursuant to the agreement.

Acceptance of the VEP and performance of the work thereunder will not change the Contract time limit as a result of the VEP, unless specifically provided for in the Contract Change Order authorizing the VEP.

Proposed changes in the basic design of a bridge or pavement type, traffic control plan, or changes which require different right-of-way limits, will not normally be considered as an acceptable VEP.

The Construction Manager shall be the sole judge of the acceptability of a VEP.

Subject to the provisions contained herein, the City or any other public agency shall have the right to use all or part of any accepted VEP without obligation or compensation of any kind to the Contractor.

In the event a VEP is accepted by the City, the provisions of General Conditions Section 6.4.4, Unit Price Adjustments Due to Increased or Decreased Quantities, which pertain to adjustment of Contract unit prices due to alterations of Contract quantities, will not apply to items adjusted or deleted as a result of effecting the VEP by Contract Change Order.

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## SECTION 3.0 PROGRESS OF WORK, MEETINGS, SCHEDULES

### **GC 3.1 BEGINNING OF WORK**

The Contractor shall begin work within ten (10) calendar days of the effective date of the Notice to Proceed and shall diligently prosecute the same to completion within the Contract Time.

### **GC 3.2 PERFORMANCE OF THE WORK**

Unless otherwise specified in the Special Conditions, the Contractor shall furnish all materials, labor, permits, tools, equipment, water, light, power, transportation, superintendence, temporary construction of every nature, and incidentals, including but not limited to, dust and traffic control measures, and to perform all work involved in executing the Contract in a satisfactory and workmanlike manner within the time specified.

### **GC 3.3 PLANS AND SPECIFICATIONS FURNISHED BY THE CITY**

The City will furnish to the Contractor, free of charge, up to five (5) copies of the contract drawing and specifications. Additional sets shall be provided by the City at cost of the City's standard billing rate for labor of reproduction and the cost of reproduction itself. The five (5) sets of plans and specifications shall be available to the Contractor at the time he/she takes out the Carson City permit at the City's One Stop Permit Center located at the Building Department, 2621 Northgate Lane, Suite 6.

The location of the Work, its general nature and extent, and the form and detail of the various features are shown on the Contract Drawings accompanying and made a part of these Contract Documents.

### **GC 3.4 ORDER OF WORK**

When required by the Contract Documents, the Contractor shall follow the sequence of operations as set forth therein. Full compensation for conforming with such requirements will be considered as included in the prices paid for the various Contract items of work and no additional compensation will be allowed therefore.

### **GC 3.5 TIME OF COMPLETION**

Time shall be of the essence of the Contract. The Contractor shall diligently prosecute the Work so that the various portions of the Project shall be complete and ready for use within the time specified. It is expressly understood and agreed by and between the Contractor and the City that the Contract Time for completion of the Work described herein is a reasonable time taking into consideration the average climatic and economic conditions and other factors prevailing in the locality and the nature of the Work.

Failure of the Contractor to perform any covenant or condition contained in the Contract Documents within the time period specified shall constitute a material breach of this Contract entitling the City to terminate the Contract unless the Contractor applies for, and receives, an extension of time in accordance with the procedures set forth in GC 3.15, EXTENSION OF TIME.

Failure of the City to insist upon performance of any covenant or condition within the time period specified in the Contract Documents shall not constitute a waiver of the Contractor's duty to complete the performance within the designated periods unless the City has given a waiver in writing.

The City's agreement to waive a specific time provision or to extend the time for performance shall not constitute a waiver of any other time provision contained in the Contract Documents. Failure of the Contractor to complete the performance promptly within any additional time authorized or in any waiver or extension of time shall constitute a material breach of this Contract entitling the City to terminate.

### **GC 3.6 MEANS AND METHODS**

It is expressly stipulated that the drawings, specifications, and other contract documents set forth the requirements as to the nature of the completed Work and do not purport to control the method of performing work except in those instances where the nature of the completed Work is dependent upon the method of performance.

Neither the City, Design Consultant, nor the Construction Manager will be responsible for or have control or charge of construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the Work. Neither the City, Design Consultant nor the Construction Manager will be responsible for or have control or charge over the acts or omissions of the Contractor, or any of their subcontractors, agents or employees, or any other persons performing any of the Work. Any general control of the Work exercised by the City or its authorized representatives shall not make the Contractor an agent of the City, and the liability of the Contractor for

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all damages to persons and/or to public or private property arising from the Contractor's execution of the Work shall not be lessened because of such general control.

Neither the inspection by the City, Design Consultant, or Construction Manager, nor any order, measurement, approved modification, or payment of monies, nor acceptance of any part or whole of the Work by the City, Design Consultant, Construction Manager, or their agents shall operate as a waiver of any provision of the Contract.

## **GC 3.7 CITY-FURNISHED MATERIALS**

Only materials and equipment specifically indicated in the Contract Documents shall be furnished by the City and such materials and equipment will be made available as designated in the Special Conditions. The Contractor shall be prepared to load or unload and to properly protect all such material and equipment from damage or loss. The cost of loading, unloading, hauling, handling, demurrage and storage, and placing City-furnished materials into the Work shall be considered as included in the price bid for the Contract item involving such City-furnished material.

Contractor shall inspect and assure itself of the amount and soundness of such material or equipment at the time of receiving such materials. Any City-furnished material or equipment lost or damaged from any cause after the Contractor has taken control of said material or equipment, shall be replaced by the Contractor at his/her expense.

## **GC 3.8 DEFECTIVE AND UNAUTHORIZED WORK**

Any materials or workmanship which does not conform to the requirements of the Contract Documents shall be considered defective and shall be remedied or removed and replaced by the Contractor, together with any other work which may be displaced in so doing, and no additional compensation will be allowed to the Contractor for such removal, replacement, or remedial work. All nonconforming materials shall be immediately removed from the Site.

Any work done beyond the limits of work, lines, and grades shown on any approved plans or established by the Construction Manager, or any changes in, additions to, or deductions from the work done without written authority, will be considered as unauthorized and will not be paid. Work so done may be ordered remedied, removed, or replaced at the Contractor's expense.

Upon failure on the part of the Contractor to comply with any order of the Engineer made under the provisions of this Section, the Engineer shall have authority to cause nonconforming materials, rejected work, or unauthorized work to be remedied, removed, or replaced at the Contractor's expense and to deduct the costs from any monies due or to become due the Contractor.

These provisions shall have full effect regardless of the fact that the defective work may have been done or the defective materials used with the full knowledge of the Engineer or his/her representative. The fact that the Engineer may have previously overlooked such defective work shall not constitute an acceptance of any part of it. Nothing stated herein shall be deemed to shorten the term of any statute of limitations applicable to claims which the City may have against the Contractor.

## **GC 3.9 PRE-CONSTRUCTION CONFERENCE**

The Construction Manager will schedule a Pre-Construction Conference at the Project site or other established location at the time of Notice to Proceed and/or execution of the Contract and prior to commencement of construction activities.

### **3.9.1 ATTENDEES**

The City, Design Consultant, Construction Manager, Contractor and its superintendent, subcontractors, and other concerned parties shall each be represented at the conference by persons familiar with and authorized to conclude matters relating to the Work.

### **3.9.2 AGENDA**

The Construction Manager will prepare an agenda for discussion of significant items relative to Contract requirements, procedures, coordination and construction. Minutes shall be kept by the Construction Manager and distributed to all attendees.

## **GC 3.10 PROGRESS MEETINGS**

The Construction Manager will conduct progress meetings at the Project site or other established location at regularly scheduled intervals which may be as frequent as weekly. Frequency of meetings shall be determined at the Pre-Construction Conference. Meeting minutes will be taken and distributed by the Construction Manager.

### **3.10.1 ATTENDEES**

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The City, Design Consultant, Construction Manager, Contractor, and its superintendent may each be represented at these meetings. Attendance by subcontractors, suppliers, utilities and other entities is subject to issues and/or items of the agenda which may require attendance.

## 3.10.2 AGENDA

Agenda may include, but not necessarily be limited to: review, correct or approve minutes of the previous progress meeting, review of items of significance that could affect progress, review/discuss topics as appropriate to the current and future status and/or needs of the Project, review the progress of the Work in the preceding week and in the subsequent week, coordinate the Work with public agencies and/or other Contractors as required, and allow the Construction Manager to plan his/her activities for testing, inspection, etc.

## GC 3.11 CONSTRUCTION SCHEDULES

Construction schedules are required for all Contracts. The type of construction schedule required, that is, Construction Schedule (A) or Construction Schedule (B) will be specified in the Special Conditions. Compensation for the Work under this item will be included within the other bid items.

### 3.11.1 CONSTRUCTION SCHEDULE (A)

#### A. General

The schedule shall be submitted at the Pre-Construction Conference and must be favorably reviewed by the Construction Manager and the City before the first partial payment can be made. NOTE: The Construction Schedule must include and account for the total contract time specified in the Contract Documents.

#### B. Base Schedule

The Contractor shall submit the schedule based on either the bar chart method or the Critical Path Method (CPM). The schedule shall indicate preceding activity relationships and/or restraints where applicable and a controlling path shall be indicated. The schedule shall be time-scaled and shall be drafted to show a continuous flow from left to right. The construction schedule shall clearly show the sequence of construction operations and specifically list:

1. The start and completion dates of primary work items or components.
2. The dates of submittals, procurement, delivery, installation and completion of each major equipment and material requirement.
3. Progress milestone events or other significant stages of completion.
4. The lead time required for testing, inspection and other procedures required prior to acceptance of the Work.
5. All activities, other than procurement activities, shall be cost-loaded. Activities shall be no longer than 14 calendar days, except for submittals and delivery items. If an activity takes longer, it shall be broken into appropriate segments of work for measurement of progress. This limitation may be waived, upon approval of the Construction Manager, for repetitious activities of longer durations for which progress can be easily monitored.

#### C. Reports

The Bar Charts or CPM Schedules shall be prepared as follows:

1. Bar Chart: A manually generated report which lists each primary activity description, early start and finish dates, and all preceding and succeeding activities. Report shall indicate all critical activities. A report with the above information shall be provided with each monthly update.
2. CPM Schedule: A CPM network report sorted by I-J or activity number which lists each activity description, early start and finish dates, preceding and succeeding

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activities and restraints, including lead/lag durations. The report shall show the critical path.

- CPM network report sorted by total float.
- CPM network report sorted by early start.

## 3.11.2 CONSTRUCTION SCHEDULE (B)

### A. General

The Construction Schedule under this requirement will also be referred to as the CPM Schedule.

The Contractor shall designate, in writing, an authorized representative in its firm who will be responsible for the preparation, revising, and updating of the CPM Schedule. The Contractor's representative shall have direct Project control and complete authority to act on behalf of the Contractor in fulfilling the construction scheduling requirements set forth herein, and such authority will not be interrupted throughout the duration of the Project. The requirements for the CPM Schedule are included to assure adequate planning and execution of the Work and to assist the Construction Manager and the City in appraising the reasonableness of the proposed schedule and evaluating progress of the Work.

Within seven (7) days from award of the Contract, the Contractor shall submit to the Construction Manager demonstration of competence in the use of CPM Scheduling, including evidence of the use of CPM Scheduling on a project of similar value and complexity. In the event of the failure of the Contractor to satisfy the Construction Manager of its CPM Scheduling competence, the Contractor will be required to employ a qualified CPM consultant who regularly performs these services and who in the opinion of the Construction Manager possesses the qualifications required to perform CPM Scheduling for this Project.

### B. Preliminary Construction Schedule

At the Pre-Construction Conference, the Contractor shall submit copies of a Preliminary Construction Schedule in the form of a precedence diagram covering the following Project phases and activities:

1. Procurement and Submittals, including shop drawings, fabrication, and delivery of key and long lead time procurement activities.
  - a. The Contractor's submittal information shall show intended submittal dates and shall be incorporated into the base project schedule.
  - b. The delivery information shall include realistic delivery dates for the procurement activities.
2. The activities planned for the first 90 days in the execution of the Work.
3. The approach to scheduling the remaining activities or phases of the Work. The Work for each phase or activity shall be represented by at least one summary activity and the sum of the summary activities shall equal the Contract Time.
4. Approximate cost and duration for each summary activity representing the Contractor's best estimate for the Work the summary activity represents.
5. Projected monthly cash flow.

### C. Base Schedule Submittal

The Contractor shall submit an acceptable Critical Path Method (CPM) Schedule to the Construction Manager within thirty (30) days after the receipt of the Notice to Proceed. Subsequent revisions to said schedule shall be submitted as set forth hereinafter.

The Construction Manager shall review the schedule and provide any comments, its favorable review of the schedule, or request a meeting to review the schedule with the Contractor within fifteen (15) days of receipt of the schedule. If requested, the Contractor shall participate in a review and

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evaluation of the proposed network diagrams and analysis by the Construction Manager. Any revisions necessary as a result of this review shall be resubmitted for review by the Construction Manager within ten (10) days. When completed, the favorably reviewed schedule shall then be the schedule to be used by the Contractor for planning, organizing, and directing the Work, and for reporting progress. If the Contractor thereafter desires to make significant changes in its method of operating and scheduling, the Contractor shall notify the Construction Manager in writing stating the reasons for the change. Only one progress payment will be made prior to acceptance of the CPM Schedule. Neither the Contractor nor the City shall own the "float".

To the extent that the favorably reviewed initial Construction Schedule, or revisions thereto, indicate anything not jointly agreed upon, it shall be deemed to be not favorably reviewed by the Construction Manager. Any omission of work from the detailed schedule, otherwise required for Contract compliance, will not excuse the Contractor from completing such work within any applicable completion date.

The CPM Schedule shall utilize a (CPM) format using either the precedence or arrow diagramming method. The schedule shall show completion of the Project at the Contract Completion Date or before.

The schedule shall be computer generated utilizing a scheduling program identified in the Special Conditions. The Contractor shall provide a compact disk or other electronic means approved by the Construction Manager for the initial base schedule and all monthly updates with the network diagram and mathematical analyses. The program shall be capable of accepting revised completion dates as modified by approved time adjustments and re-computations of all tabulation date and float accordingly. The CPM schedule system shall consist of diagrams and accompanying mathematical analyses network diagram. See Special Conditions for further details regarding scheduling requirements.

## **D. Cash Flow Projection**

A cash flow projection shall be submitted with the Construction Schedule. This cash flow projection shall be revised and resubmitted when revisions of the Construction Schedule will result in significant changes to the projected cash flow.

## **GC 3.12 NOTICE OF DELAYS**

When the Contractor foresees a delay in the prosecution of the Work and, in any event, within seventy-two (72) hours of a delay, the Contractor shall notify the Construction Manager in writing of the probability of the occurrence, the estimated or actual extent of the delay, and its cause. The Contractor shall take immediate steps to prevent, if possible, the occurrence or continuance of the delay. The Contractor agrees that no claim shall be made for delays which are not called to the attention of the Construction Manager within the time specified above.

Except for Standby Time for City utilities as provided for in GC 7.10, COORDINATION/COOPERATION WITH UTILITIES, the Contractor's sole remedy for any delay in the Work, regardless of the alleged cause of the delay, shall be an extension of the contract time; the Contractor shall not be entitled to any delay damages, wage escalation, material escalation, extended job site or home office overhead or supervision, or additional compensation of any kind.

### **3.12.1 NON-EXCUSABLE DELAYS**

Non-excusable delays in the prosecution of the Work shall include delays which could have been avoided by the exercise of care, prudence, foresight, and diligence on the part of the Contractor or its subcontractors, at any tier level, or suppliers. Time lost due to violations of permit requirements shall be non-excusable delays. No time extension or other compensation shall be granted for time lost due to non-excusable delays.

### **3.12.2 EXCUSABLE DELAYS**

Excusable delays in the prosecution or completion of the Work shall include delays which result from causes beyond the control of the Contractor and which could not have been avoided by the exercise of care, prudence, foresight, and diligence on the part of the Contractor or its subcontractors, at any tier level, or suppliers.

Delays caused by acts of God, fire, unusual storms, floods, earthquakes, strikes, labor disputes, freight embargoes, and shortages of materials shall be considered as excusable delays insofar as they prevent the Contractor from proceeding with at least seventy-five (75) percent of the normal labor and equipment force for

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at least five (5) hours per day toward completion of the current critical activity item(s) on the latest favorably reviewed Construction Schedule.

Excusable delays shall not entitle the Contractor to any additional compensation. The sole remedy of the Contractor shall be to seek an extension of time.

### **3.12.3 STANDBY TIME**

As provided in GC 7.10, COORDINATION/COOPERATION WITH UTILITIES, if the Contractor is delayed due to the City's non-marking, mis-marking or mis-locating the City's main line water mains, reclaimed water mains, sanitary sewer main lines and storm drains, the City will be responsible for repairs, damages and standby time caused the Contractor. Compensation to the Contractor for such repairs, damages or standby time shall be calculated on the basis of GC 6.4.3, FORCE ACCOUNT PAYMENT. Note: this provision does not apply to service laterals/connections.

Also Note: per NRS 455.082, the approximate location of a subsurface installation marked in response to a request of USA means a strip of land not more than 24 inches on either side of the exterior surface of a subsurface installation.

### **3.12.4 WEATHER DELAYS**

Should inclement weather conditions or the conditions resulting from weather prevent the Contractor from proceeding with seventy-five (75) percent of the normal labor and equipment force engaged in the current critical activity item(s) on the latest favorably reviewed Construction Schedule for a period of at least five (5) hours per day toward completion of such operation or operations, and the crew is dismissed as a result thereof, it shall be a weather delay day. The Contractor may be granted a non-compensable time extension should the critical path activities be affected by the weather delay.

### **3.12.5 CONCURRENT DELAYS**

Concurrent delays are those delay periods when the prosecution of the Work is delayed during the same period of time due to causes from a combination of the delays, City-caused and Contractor-caused. Time extensions will be granted on the basis of a time impact analysis from the CPM Schedule.

## **GC 3.13 LIQUIDATED DAMAGES**

It is agreed by the parties to the Contract that time is of the essence in the completion of this Work, and that in case all the Work called for under the Contract is not completed before or upon the expiration of the time limit as set forth in these Contract Documents, or as modified by extensions of time granted by the City, damage will be sustained by the City. As it may be impracticable to determine the actual delay damage; it is, therefore, agreed that the Contractor shall pay liquidated damages to the City in the amount set forth in the Construction Contract, per calendar day for each and every calendar day's delay beyond the time prescribed to complete the Work. The Contractor agrees to pay such liquidated damages and in case the same are not paid, agrees that the City may deduct the amount thereof from any monies due or that may become due the Contractor under the Contract.

The Contractor shall not be deemed in breach of this Contract nor shall liquidated damages be collected because of any delays in the completion of the Work due to unforeseeable causes beyond the control and without the fault or negligence of the Contractor provided the Contractor requests an extension of time in accordance with the procedures set forth in GC 3.15, EXTENSION OF TIME. Unforeseeable causes of delay beyond the control of the Contractor shall include Acts of God, acts of a public enemy, acts of government, or acts of the City, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and weather, or delays of subcontractors due to such causes, or delays caused by failure of the City or the facilities.

## **GC 3.14 RIGHTS BEYOND LIQUIDATED DAMAGES**

Liquidated damages shall not preclude the City from claiming and collecting damages on account of delay, price changes, loss of other contracts, loss of income, and or any inability of the City to fulfill other obligations, if such damages are direct or consequential arising out of the failure of the Contractor to perform under the terms, conditions and requirements of this Contract.

## **GC 3.15 EXTENSION OF TIME**

The time specified for completion of all of the Work or any part of the Work may be extended only by a written change order executed by the City. The Construction Manager may, at his/her discretion, recommend that the City extend the time for completion of the Work without invalidating any of the provisions of the contract and without releasing the surety.

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Extensions of time, when recommended by the Construction Manager, will be based upon the effect of delays to the project as a whole and will not be recommended for non-controlling delays to minor portions of the Work, unless it can be shown that such delays did, in fact, delay progress of the project as a whole. Excusable delays may justify an extension of time.

No extension of time for completion will be allowed for non-excusable delays.

Written requests for an extension of time must be delivered to the Construction Manager within seventy-two (72) hours following the date of the occurrence which caused the delay. The request must state the cause of the delay, the date of the occurrence causing the delay, and the amount of additional time requested. The delay causing condition must affect an activity on the critical path of the latest favorably reviewed Construction Schedule. Requests for extensions of time shall be supported by all evidence reasonably available or known to the Contractor which would support the extension of time requested. Requests for extension of time failing to include the information specified in this Section, and requests for extensions of time which are not received within the time specified above, shall result in the forfeiture of the Contractor's right to receive any extension of time requested.

If the Contractor is requesting an extension of time because of a weather delay, Contractor shall supply daily reports to the Construction Manager describing such weather and the work which could not be performed that day because of such weather or conditions resulting therefrom and which Contractor otherwise would have performed. The City's acceptance of the daily reports shall not be deemed an admission of the Contractor's right to receive an extension of time or a waiver of the City's right to strictly enforce the time provisions contained in the Contract Documents.

When the Contractor has submitted a request for an extension of time in accordance with the procedures of this Section, the City will ascertain the facts and extent of the delay and extend the time for completing the Work if, in its judgment, the findings of fact justify such an extension, and its findings of fact thereon shall be final and conclusive. An extension of time may be granted by the City after the expiration of the time originally fixed in the Contract or as previously extended, and the extension so granted shall be deemed to commence and be effective from the date of such expiration.

## **GC 3.16 TEMPORARY SUSPENSION OF WORK**

The City may order suspension of all or any part of the Work if:

- (1) Unsuitable weather and such other conditions beyond the control of the Contractor prevent satisfactory and timely performance of the Work; or
- (2) The contractor does not comply with the Contract or the Engineer's orders.

If the Work is suspended for reason (1) above, the period of work stoppage will be counted as non-working days. However, if the Construction Manager believes the Contractor should have completed the suspended work before the suspension, all or part of the suspension period may be counted as working days. The Construction Manager will set the number of non-working days (or parts of days) by deciding how long the suspension delayed the entire project. An extension of time may be granted. Also, the Contractor will be compensated for its actual costs plus the standard markup for overhead and profit for performing all work necessary to provide a safe, smooth, unobstructed passageway through the Site for use by the public, pedestrian and vehicular traffic during the period of such a suspension of work.

If the Work is suspended for reason (2) above, the period of work stoppage will be counted as working days and no extension of time will be granted. The lost work time, however, shall not relieve the Contractor from any contract responsibility.

If the Contractor fails to correct defective work as required, or fails to carry out the Work in accordance with the Contract Documents or any other applicable rules and regulations, the City, in writing, may order the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of the City to stop the Work shall not give rise to any duty on the part of the City to exercise this right for the benefit of the Contractor or any other person or entity. All delays in the Work occasioned by such stoppage shall not relieve the Contractor of any duty to perform the Work or serve to extend the time for the Work completion. Any and all necessary corrective work done in order to comply with the Contract Documents shall be performed at no cost to the City. When ordered by the City to suspend or resume work, the Contractor shall do so immediately. In all cases of suspension of construction operations, the work shall not again be resumed until permitted by written order of the City.

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In the event that a suspension of Work is ordered for reason (2) above, as provided in this Section, the Contractor shall perform all work necessary to provide a safe, smooth, and unobstructed passageway through the Site for use by public, pedestrian and vehicular traffic, during the period of such a suspension. Should the Contractor fail to perform the Work as specified, the City may perform such work and the cost thereof may be deducted from monies due the Contractor under the Contract. The Contractor will be responsible for all damage to the Work that may occur during suspensions of work. The Contractor will not be entitled to any additional compensation nor allowance for overhead or profit incurred in connection with this type of suspension.

## **GC 3.17 PROTECTION OF ANTIQUITIES**

State and Federal laws pertaining to the protection and preservation of sites or objects of archeological, paleontological or historic interest shall be observed by the Contractor performing this Work.

When features of archeological, paleontological or historic interest are encountered or unearthed in material pits, the roadway prism, or other excavation, the Contractor shall stop work in the immediate vicinity of such feature, protect it from damage or disturbance, and report promptly to the State Historic Preservation Office at (775) 684-3448 and the Construction Manager.

Work shall not be resumed in the immediate area until the Contractor is advised by the authorities having jurisdiction that study or removal of the feature or features has been completed. The Contractor may be allowed an appropriate contract extension of time, as provided for in these General Conditions, for construction time lost.

## **GC 3.18 CONTRACT TERMINATION**

If at any time the Contractor is determined to be in material breach of the Contract, notice thereof in writing will be served upon the Contractor and its sureties, and should the Contractor neglect or refuse to promptly provide means for satisfactory compliance with the Contract, within the time specified in such notice, the City in such case shall have the authority to terminate the operation of the Contract.

- A. The City may terminate the Contract if the Contractor:
  - 1. Fails to maintain bonding, Nevada State Contractor's Board License, State Industrial Insurance requirements or insurance policies for limits as defined in the Contract Documents;
  - 2. Persistently or repeatedly refuses or fails to supply properly skilled workers or proper materials;
  - 3. Fails to make payment to subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the subcontractors;
  - 4. Persistently disregards laws, ordinances, or rules, regulations or order of a public authority having jurisdiction;
  - 5. Otherwise makes a material breach of a provision of the Contract Documents; or
- 6. Contractor fails to maintain safe working conditions.
- B. When any of the above reasons exist, the City may provide, without prejudice to any other rights or remedies of the City and after giving the Contractor and the Contractor's Surety, seven (7) days written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:
  - 1. Take possession of the site and of all materials, equipment, tools and construction equipment and machinery thereon owned by the Contractor;
  - 2. Accept assignment of subcontractors pursuant to this Contract for Construction (Contingent Assignment of Subcontracts to City if Contract is terminated); and,
  - 3. Finish the Work by whatever reasonable method the City may deem expedient.
- C. If the City terminates the Contract for one of the reasons stated in Termination by the City for Cause, the Contractor shall not be entitled to receive further payment until the Work is finished.

# GENERAL CONDITIONS

- D. If the unpaid balance of the Contract Amount exceeds the cost of finishing the Work including expenses made necessary thereby, such excess shall be paid to the Contractor. If the costs of finishing the Work exceed the unpaid balance, the Contractor shall pay the difference to the City. The amount to be paid to the Contractor or City, as the case may be, shall survive termination of the Contract for Construction.

In the event of such termination, all monies due the Contractor or retained under the terms of this Contract shall be held by the City; however, such holdings will not release the Contractor or its sureties from liability for failure to fulfill the Contract. Any excess cost over and above the Contract Amount incurred by the City arising from the termination of the operations of the Contract and the completion of the Work by the City as provided above shall be paid for by any available funds held by the City. The Contractor will be so credited with any surplus remaining after all just claims for such completion have been paid.

If at any time before completion of the Work under the Contract, the Work shall be stopped by an injunction of a court of competent jurisdiction or by order of any competent authority, the City may give notice to the Contractor to discontinue the Work and terminate the Contract. The Contractor shall discontinue the Work in such manner, sequence, and at such times as the Construction Manager may direct. The Contractor shall have no claim for damages for such discontinuance or termination, nor any claim for anticipated profits on the Work thus dispensed with, nor for any claim for penalty, nor for any other claim such as unabsorbed overhead, except for the work actually performed up to the time of discontinuance, including any extra work ordered by the Construction Manager to be done.

## **GC 3.19 CITY'S RIGHT TO TERMINATE FOR CONVENIENCE**

The City reserves the right to terminate this contract for convenience whenever it considers termination, in its sole and unfettered discretion, to be in the public interest. In the event that the Contract is terminated in this manner, payment will be made for work actually completed. In no event if termination occurs under this provision shall the Contractor be entitled to anticipated profits on items of work not performed as of the effective date of the termination or compensation for any other item, including but not limited to, unabsorbed overhead. The Contractor shall assure that all subcontracts which he/she enters related to this Contract likewise contain a termination for convenience clause which precludes the ability of any subcontractor to make claims against the Contractor for damages, due to breach of contract, of lost profit on items of work not performed or of unabsorbed overhead, in the event of a convenience termination.

## **GC 3.20 WORK DURING DISPUTES AND LITIGATION**

In the event of a dispute between the parties hereto as to performance of the Work, the interpretation of this Contract, or payment or nonpayment for work performed, the parties shall attempt to resolve the dispute. If the dispute is not resolved, Contractor agrees to continue the Work diligently to completion and will neither rescind this Contract nor stop the progress of the Work but will submit such controversy to determination in accordance with the terms of the Contract Documents. In the event any litigation is commenced with respect to this Contract, such litigation shall not serve to suspend Contractor's obligation to continue performance of the Work hereunder.

## **GC 3.21 LANDS AND RIGHTS-OF-WAY**

The lands and rights-of-way for the project to be constructed will be provided by the City. The Contractor shall make his/her own arrangements and pay all expenses for additional area required by him/her outside the limits of the City's land and right-of-way. Work in the public right-of-way shall be done in accordance with the requirements of the permit issued by the public agency in whose right-of-way the work is located in addition to conforming to the plans and specifications.

## **GC 3.22 WAIVER OF RIGHTS**

Except as otherwise specifically provided in the Contract Documents, no action or failure to act by the City, Owner's Representative, Construction Manager or Contractor shall constitute a waiver of any right or duty afforded any of them under the Contract Documents, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach thereunder.

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## SECTION 4.0 SHOP DRAWINGS AND QUALITY CONTROL/INSPECTIONS

### GC 4.1 CONTRACTOR'S RESPONSIBILITIES

The Contractor shall submit, at its own expense, submittals and details of structural and reinforcing steel, concrete mix designs, coatings, equipment, material, electrical controls, architectural fabrications, pipe, pipe joints, special pipe sections, and other appurtenances as required in the Technical Specifications and Special Conditions of the Contract Documents. The contract Unit Bid Price for the various items requiring submittals shall include the cost of furnishing all shop drawings, product data, and samples, and the Contractor will be allowed no extra compensation for such drawings, product data or samples.

All submittals and supporting drawings, designs, calculation, data, catalogs, schedules, etc., shall be submitted as the instruments of the Contractor, who shall be responsible for their accuracy, completeness, and coordination. Such responsibility shall not be delegated in whole or part to subcontractors or suppliers. These submittals may be prepared by the Contractor, subcontractors, or suppliers, but the Contractor shall ascertain that submittals meet all of the requirements of the Contract Documents while conforming to structural, space, and access conditions at the point of installation. Designation of work "by others," if shown in submittals, shall mean that the work will be the responsibility of the Contractor rather than the subcontractor or supplier who prepared the submittals. The Contractor shall insure that there is no conflict with other submittals and notify the Construction Manager in each case where its submittal may affect the work of another Contractor or the City. The Contractor shall insure coordination of submittals among the related crafts and subcontractors.

Submittals shall be prepared in such form that data can be identified with the applicable Specification paragraph. The data shall clearly demonstrate compliance with the Contract Drawings and specifications and shall relate to the specific equipment to be furnished. Where manufacturer's standard drawings are employed, they shall be marked clearly to show what portion of the data is applicable to this Project.

### GC 4.2 SOURCE OF MATERIALS

Unless otherwise approved in writing by the Construction Manager, only unmanufactured materials produced in the United States, and only manufactured materials made in the United States, shall be used in the performance of this contract.

### GC 4.3 TRANSMITTAL PROCEDURES

#### 4.3.1 TRANSMITTAL FORM

A separate transmittal form shall be used for each specific item, class of material, equipment, and items specified in separate, discrete sections for which the submittal is required. Submittal documents common to more than one piece of equipment shall be identified with all the appropriate equipment numbers. Submittals for various items shall be made with a single form when the items taken together constitute a manufacturer's package or are so functionally related that expediency indicates checking or review of the group or package as a whole. The specification section to which the submittal is related shall be indicated on the transmittal form.

A unique number, sequentially assigned, shall be noted on the transmittal form accompanying each item submitted. Original submittal numbers shall have the following format: "XXX"; where "XXX" is the sequential number assigned by the Contractor. Resubmittals shall have the following format: "XXX-Y"; where "XXX" is the originally assigned submittal number and "Y" is a sequential letter assigned for resubmittals, i.e., A, B, or C being the 1st, 2nd, and 3rd resubmittals, respectively. Submittal 25B, for example, is the second resubmittal of submittal 25.

#### 4.3.2 DEVIATIONS FROM THE CONTRACT

If the submittals show any deviations from the Contract requirements, the Contractor shall submit with the submittal submission a written description of such deviations and the reasons therefore. If the City accepts such deviation, the City shall issue an appropriate Contract Change Order, except that, if the deviation is minor, or does not involve a change in price or in time of performance, a Change Order may not be issued. If deviations from the Contract requirements are not noted on the submittal by the Contractor, the review of the shop drawing shall not constitute acceptance of such deviations.

#### 4.3.3 SUBMITTAL COMPLETENESS

The Contractor shall check all submittals before submitting them to the Construction Manager and shall certify on the transmittal letter and on each shop drawing that they have been checked, are in compliance with the drawings and specifications, and all deviations from the Contract requirements are noted.

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If the Contractor submits an incomplete submittal, the submittal may be returned to the Contractor without review. A complete submittal shall contain sufficient data to demonstrate that the items comply with the specifications, shall meet the minimum requirements for submissions cited in the Technical Specifications, shall include materials and equipment data and certifications where required, and shall include any necessary revisions required for equipment other than first named.

The City reserves the right to deduct monies from payments due the Contractor to cover additional actual costs of review beyond the second submission.

## **4.3.4 SUBMITTAL PERIOD**

All submittals shall be submitted to the Construction Manager within fifteen (15) calendar days after the date of the Notice to Proceed by the City, unless the Construction Manager accepts an alternate schedule for submission of submittals proposed by the Contractor or unless provided for differently in the Special Conditions.

## **4.3.5 MATERIAL AND EQUIPMENT SUBSTITUTIONS**

In preparing these specifications, the Design Consultant has named those products which to its knowledge meet the specifications and are equivalent in construction, functional efficiency, and durability.

Wherever catalog numbers and specific brands or trade names preceded by "similar and equal" or followed by the designation "or equal" are used in conjunction with a designated material, product, installation, or service mentioned in these specifications, they are used to establish the standards of quality and utility required. The Contractor may request, in writing, approval of any material, process or article which he/she believes to be equal. The written request shall state how the material, process, or article proposed for substitution compares with or differs from the designated material, process, or article in composition, size, arrangement, performance, and in addition, the request shall be accompanied by documentary evidence of equality in price and delivery or evidence of difference in price and delivery. Data on price shall be in the form of certified quotations from suppliers of both the designated and proposed material, process or article. If any material, process or article offered by the Contractor is not, in the opinion of the Engineer, equal or better in every respect to that specified, then the Contractor must furnish the material, process or article specified or one that, in the opinion of the Engineer, is the equal or better in every respect. In the event the Contractor furnishes material, process, or article more expensive than that specified, the difference in cost of such material, process, or article so furnished shall be borne by the Contractor. Pursuant to NRS, Chapter 338.140, data substantiating a request for substitution of "an equal" item shall be submitted within seven (7) days after Award of the Contract.

## **GC 4.4 REVIEW PROCEDURE**

Submittals shall be submitted to the Construction Manager for review and will be returned to the Contractor within fifteen (15) working days after receipt, unless otherwise provided for in the Special Conditions. The primary objective of review of submittals by the City is the completion of the Project in full conformance with the Contract, unmarred by field corrections, and within the time provided. In addition to this primary objective, submittal review as a secondary objective will assist the Contractor in its procurement of equipment that will meet all requirements of the Project Drawings and specifications, will fit the structures detailed on the drawings, will be completed with respect to piping, electrical, and control connections, will have the proper functional characteristics, and will become an integral part of a complete operating facility.

After review by the City of each of the Contractor's submissions, the material will be returned to the Contractor with actions defined as follows:

- A. No Exceptions Noted (Resubmittal Not Required)**  
Accepted subject to its compatibility with future submissions and additional partial submissions for portions of the work not covered in this submission. Does not constitute approval or deletion of specified or required items not shown in the partial submission.
- B. Make Corrections Noted (Resubmittal Not Required)**  
Same as A, except that minor corrections as noted shall be made by the Contractor.
- C. Make Corrections Noted (Resubmittal)**

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Rejected because of inconsistencies or errors which shall be resolved or corrected by the Contractor prior to subsequent review by the City.

**D. Not Acceptable (Resubmit)**

Submitted material does not conform to drawings and specifications in major respects, i.e.: wrong size, model, capacity, or material.

It shall be the Contractor's responsibility to copy and/or conform reviewed submittals in sufficient numbers for its files, subcontractors, and vendors.

The Contractor shall submit a minimum of six (6) copies for each submittal. The Construction Manager will retain a minimum of four (4) copies for its use and record and return two (2) copies to the Contractor.

The City's favorable review of submittals shall be obtained prior to the fabrication, delivery and construction of items requiring submittal review.

Favorable review of submittals does not constitute a change order to the Contract requirements. The favorable review of all submittals by the City shall apply in general design only and shall in no way relieve the Contractor from responsibility for errors or omissions contained therein. Favorable review by the City shall not relieve the Contractor of its obligation to meet safety requirements and all other requirements of law. Favorable review by the City shall not constitute acceptance by the City of any responsibility for the accuracy, coordination, and completeness of any items or equipment represented on the submittals.

## **GC 4.5 QUALITY CONTROL - GENERAL**

All materials and equipment to be incorporated into the Work, unless otherwise specified, shall be new and of the specified quality and equal to the samples found to be acceptable by the Design Consultant if samples have been submitted. All materials, equipment, and supplies provided shall, without additional charge to the City, fully conform with all applicable state and federal safety laws, rules, regulations, and orders, and it shall be the Contractor's responsibility to provide only such materials, equipment, and supplies. It shall be the duty of the Contractor to call the Construction Manager's attention to apparent errors or omissions and request instructions before proceeding with the Work. The Construction Manager may, by appropriate instructions, correct errors and supply omissions not involving extra cost, which instructions shall be as binding upon the Contractor as though contained in the original Contract Documents.

At the option of the Construction Manager, materials and equipment to be supplied under this Contract will be tested and inspected either at their place of origin, laboratory, or at the site of the Work. The Contractor shall give the Construction Manager written notification at least 30 days prior to the shipment of materials and major equipment to be tested and inspected at point of origin. Prior to shipping any precast concrete products, a meeting shall be held at the manufacturer's site to discuss and agree on uniform acceptability standards for the precast products. Satisfactory tests and inspections at the point of origin shall not be construed as a final acceptance of the materials and equipment, nor shall such tests and inspections preclude retesting or re-inspection at the site of the Work.

Inspection of the Work by the City, Construction Manager and/or Design Consultant shall not relieve the Contractor of its obligations to conduct comprehensive inspections of the Work, to furnish materials and perform acceptable Work, and to provide adequate safety precautions in conformance with the intent of the Contract.

### **4.5.1 QUALITY ASSURANCE INSPECTION**

All work and materials are subject to the inspection of the Construction Manager. The Contractor shall prosecute work only in the presence of the Construction Manager or a City inspector appointed by the Construction Manager, and any work done in the absence of said Construction Manager or inspector may be subject to rejection. Furthermore, failure to call for the Construction Manager or inspector to inspect as the work progresses shall be considered as a major breach of the Contract and may constitute grounds for the City to terminate. The Contractor shall make a request to the Construction Manager or inspector at least twenty-four (24) hours in advance before inspection services are required for the work. If the specifications, the Construction Manager's instructions, laws, ordinances, or any public authority require any work to be specially tested or approved, the Contractor shall give timely notice of its readiness for inspection. The City, Construction Manager, Design Consultant and authorized agents and their representatives shall at all times be provided safe access to the Work wherever it is in preparation or progress and to all warehouses and storage yards wherein materials and equipment are stored, and the Contractor shall provide facilities for such access and for inspection, including maintenance of temporary and permanent access. Inspection of the Work shall

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not relieve the Contractor of the obligation to fulfill all conditions of the Contract, and improper work will be subject to rejection. Work and materials not meeting such requirements shall be made good, and unsuitable work or materials may be rejected; notwithstanding that such work or materials have been previously inspected by the Construction Manager or that payment therefore has been included in a progress estimate.

No work or any portion thereof shall be deemed acceptable by reason of the presence of the Engineer. While the Engineer will endeavor to point out to the Contractor any defective work which comes to the Engineer's attention during these observations, the Engineer's failure to do so shall not constitute the basis of any claim, suit, or cause of action by the Contractor or any party against the Engineer or City and shall not excuse nonconforming or defective work by the Contractor.

No portion of any work or installed materials shall be covered or concealed in any manner without first being inspected by the Construction Manager. If any work should be covered up without the approval or consent of the Construction Manager, the Construction Manager shall have the authority to require, at any time before acceptance of the Work, that such work be uncovered for examination. After examination, the Contractor shall restore said portions of the Work to the standards required by the Specifications. Should the work thus exposed or examined prove acceptable, the uncovering or removing of the covering and the replacing of the covering or making good of the parts removed, will be paid for as provided in GC 6.0, CHANGE ORDERS, but should the work so exposed or examined prove unacceptable, the uncovering or removing and the replacing of the covering or making good of the parts removed shall be at the Contractor's expense.

## **4.5.2 PERMIT AND CODE COMPLIANCE INSPECTIONS**

Separate and independent from the inspections above, the Work may require the inspections of Building Officials or other agencies. The Contractor shall make arrangements with the Carson City Building Department to schedule appropriate Building Permit compliance inspections and with other agencies (i.e. Fire Officials, NDOT, NDEP, etc.) to schedule their required permit and code inspections. Such inspectors shall have the authority provided them by their agencies and jurisdictions.

## **4.5.3 SAMPLES AND TESTS**

The source of supply of materials for the Work shall be subject to tests and inspection before the delivery is started and before such materials are used in the Work. Representative preliminary samples of the character and quality prescribed shall be submitted to the Construction Manager by the Contractor in sufficient quantities or amounts for testing or examination.

All tests of materials furnished by the Contractor shall be made in accordance with the commonly recognized standards of national technical organizations, and such special methods and tests as are prescribed in the Technical Specifications. Certificates of Compliance shall be provided by the Contractor as required in the Technical Specifications.

### **A. Sampling**

The Contractor shall furnish such samples of materials as are requested by the Construction Manager. No material shall be used until the Construction Manager has had the opportunity to test or examine such materials. Samples shall be secured and tested whenever necessary to determine the quality of the material. Samples and test specimens prepared at the site, such as concrete test cylinders, shall be taken or prepared by the Construction Manager in the presence and with the assistance of the Contractor.

### **B. Testing**

All initial testing including, but not limited to, concrete, soils, and asphalt/concrete pavement shall be at no expense to the Contractor and shall be performed in the City's laboratory or in a laboratory designated by the City. When required by the Contract or the Construction Manager, the Contractor shall furnish certificates of tests of materials and equipment made at the point of manufacture by a recognized testing laboratory.

The Contractor is responsible for all system and equipment testing as provided for in these Contract Documents.

### **C. Retesting Costs**

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The costs of any retesting required due to failed test or defective material or sample shall be at the Contractor's expense. The City will deduct such retesting costs from the progress payments through a deductive change order.

## **D. Test Standards**

All sampling, specimen preparation, and testing of materials shall be in accordance with the requirements of the Standard Specifications, or any permits, and the standards of nationally recognized technical organizations. The physical characteristics of all materials not particularly specified shall conform to the latest standards published by the American Society for Testing Materials, where applicable.

## **E. Testing Disputes**

In the event that the Contractor disputes the results of the City's materials testing and retains his/her own testing laboratory for comparison testing, only a laboratory and personnel certified under the Nevada Alliance for Quality Transportation Construction (NAQTC) will be considered.

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## SECTION 5.0 PAYMENT

### **GC 5.1 GENERAL**

The Contractor shall accept the compensation, as herein provided, as full payment for furnishing all labor, materials, tools, equipment, and incidentals appurtenant to the various items of the Proposal Summary, as further specified herein, necessary for completing the Work, all in accordance with the requirements of the Contract Documents, including all costs of permits and compliance with the regulations of the Occupational Safety and Health Administration of the U. S. Department of Labor (OSHA), and no additional compensation will be allowed therefore. No separate payment will be made for any item that is not specifically set forth in the Proposal Summary, and all costs therefore shall be included in the prices named in the Proposal Summary for the various items of Work. Prior to the City processing the pay estimate, if prevailing wage rates are required, the Contractor shall submit to the City a copy of its certified payroll reports for each week within the pay estimate period.

### **GC 5.2 PAYMENT FOR PATENTS AND PATENT INFRINGEMENT**

All fees or claims for any patented invention, article, or arrangement that may be used upon or in the work, or is in any manner connected with the performance of the Work, shall be included in the price bid for doing the work. The Contractor and its sureties shall defend, protect, and hold the City, the Construction Manager, and Design Consultant, and their officers, agents, employees, and volunteers harmless against liability of any nature or kind for any and all costs, legal expenses, and damages made for such fees or claims and against any and all suits and claims brought or made by the holder of any invention or patent, or on account of any patented or unpatented invention, process, article, or appliance manufactured for or used in the performance of the Contract, including its use by the City. Before final payment is made on the Contract, the Contractor shall furnish an affidavit to the City regarding patent rights for the Project. The affidavit shall state that all fees and payments due as a result of the Work incorporated into the Project or methods utilized during construction have been paid in full. The Contractor shall certify in the affidavit that no other fees or claims exist in this Project.

### **GC 5.3 PAYMENT OF TAXES**

The Contractor shall pay and shall assume exclusive liability for all taxes levied or assessed on or in connection with the Contractor's performance of this Contract, including, but not limited to, state and local sales and use taxes, federal and state payroll taxes or assessments, and excise taxes. No separate allowance will be made therefore, and all costs in connection therewith shall be included in the total amount of the Contract Amount.

### **GC 5.4 PAYMENT FOR LABOR AND MATERIALS**

In accordance with the provision of NRS 338.550, the Contractor shall pay and require its subcontractors to pay all accounts for labor including workers' compensation premiums, state unemployment and federal social security payments and other wage and salary deductions required by law. The Contractor also shall pay and cause its subcontractors to pay all accounts for services, equipment, and materials used by the Contractor and its subcontractors during the performance of Work under this Contract. Such accounts shall be paid as they become due and payable.

### **GC 5.5 PARTIAL PAYMENTS**

In consideration of the faithful performance of the Work prosecuted in accordance with the provisions of the Contract Documents, the City will pay the Contractor for all such work installed on the basis of percentage completion. Amounts earned will be based on the accepted Schedule of Values.

Payments will be made by the City to the Contractor on estimates approved by the Construction Manager, based on the value of equipment installed and tested, labor and materials incorporated into said permanent Work by the Contractor during the preceding month, and acceptable materials and equipment on hand (materials and equipment furnished and delivered to the site by the Contractor and not yet incorporated into the work accompanied by an approved paid invoice) per GC 5.5.1, below.

Partial payments will be made monthly based on work accomplished as of the last day of each calendar month.

The Contractor and Construction Manager shall meet within five (5) days after the end of each calendar month to review and agree on the Work completed within the past month. The Contractor shall then submit its progress billing of the Work completed during the prior month and the Work completed to date on the City's approved form corresponding to the accepted Schedule of Values. Upon receipt of Contractor's progress billing, the City shall act in accordance with the following:

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- a. The Construction Manager shall review the submitted progress billing to verify that it corresponds with the agreement reached at the above mentioned review meeting. If the progress billing is satisfactory, the Construction Manager will process it for payment.
- b. If the Construction Manager determines that the progress billing is not satisfactory, then pursuant to NRS 338.525, the City shall, within twenty (20) days of receipt of said progress billing, give written notification to the Contractor of any amount that will be withheld and a detailed explanation of the reason for the withholding. The remainder will be processed for payment.

If requested, the Contractor shall provide such additional data as may be reasonably required to support the partial payment request. Payment will be made by the City to the Contractor in accordance with City's normal accounts payable procedures. The City shall retain amounts in accordance with Sections GC 5.6, RETENTION, and GC 5.7, OTHER WITHHOLDS.

Per NRS 338.515, the City shall pay the Contractor within thirty (30) days after receipt of its progress billing.

## **5.5.1 PARTIAL PAYMENTS - INCLUSION OF MATERIALS ON HAND**

Except as otherwise provided in NRS 338.515(1), GC 5.6 "RETENTION", NRS 338.525, and GC 5.7 "OTHER WITHHOLDS", pursuant to NRS 338.515(2), the City will pay or cause to be paid to the Contractor the actual cost of the supplies, materials and equipment that have been identified in the Special Conditions as eligible for such payment. To be eligible for such payment the supplies, materials, or equipment must:

- (A) be identified in the Special Conditions:
- (B) have been delivered and stored at a location, and in the time and manner, specified in this Contract by the Contractor or a subcontractor or supplier for use in the Work; and,
- (C) be in short supply or were made specifically for this Contract.

Materials, as used herein, shall be considered to be those items which are fabricated and manufactured goods and equipment. Only those materials for which the Contractor can transfer clear title to the City will be qualified for partial payment.

To receive payment for materials and equipment delivered to the site, but not incorporated in the Work, it shall be necessary for the Contractor to submit to the Construction Manager a list of such materials at least seven (7) days prior to submitting the monthly progress billing for work completed. At the Construction Manager's discretion, the Construction Manager will approve items for which partial payment is to be made subject to the following:

- a. Only equipment or materials which have received favorable review of shop drawings will qualify.
- b. Eligible equipment or materials must be delivered and properly stored, protected, and maintained at the job site in a manner favorably reviewed by the Construction Manager.
- c. The Contractor's actual net cost for the materials must be supported by paid invoices of suppliers or other documentation requested by the Construction Manager.

## **GC 5.6 RETENTION**

From each progress payment estimate, ten (10) percent of the "total completed to date" sum will be deducted and retained by the City, and the remainder, less the amount of all previous payment, will be paid to the Contractor. After fifty (50) percent of the Work has been completed and if progress on the Work remaining is satisfactory, the deduction to be made from the remaining progress payments and from the final payment may be reduced to five (5) percent of the adjusted Contract Price at the discretion of the City.

## **GC 5.7 OTHER WITHHOLDS**

In addition to the amount which the City may otherwise retain under the Contract, the City may withhold a sufficient amount of any payment otherwise due the Contractor, as in its judgment may be necessary to cover:

- a. Defective work not remedied;

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- b. A reasonable doubt that the Contract can be completed for the balance then unpaid;
- c. Damage to another contractor, third party, or to property;
- d. Failure to submit, revise, resubmit, or otherwise conform to the requirements herein for preparing and maintaining a construction schedule;
- e. Failure of the Contractor to keep the Work progressing in accordance with its Progress Schedule;
- f. Failure to maintain current "As-Built" record drawings;
- g. Failure of the Contractor to make proper submissions, as herein specified;
- h. Payments due the City from the Contractor;
- i. Reduction of Contract Amount because of modifications; or
- j. The Contractor's neglect or unsatisfactory prosecution of the Work, including failure to clean up.

When the above reasons for withhold amounts are removed, payment will be made to the Contractor for amounts withheld.

# GENERAL CONDITIONS

## SECTION 6.0 CHANGE ORDERS

### GC 6.1 GENERAL

Without invalidating the Contract and without notice to sureties or insurers, the City through the Construction Manager, may at any time order additions, deletions, or revisions in the Work. These will be authorized by Work Directive, Field Order, or Change Order. A Change Order will not be issued for a Work Directive unless the Construction Manager concurs with an appeal by the Contractor that such Work Directive is a change in the scope of the Contract. The Contractor shall comply promptly with the requirements of all Change Orders, Field Orders, or Work Directives. The work involved in Change Orders shall be executed under the applicable conditions and requirements of the Contract Documents. If any Field Order or Work Directive causes an increase or decrease in the Contract Amount or an extension or shortening of the Contract Time, an equitable adjustment will be made by issuing a Change Order. If the Contractor accepts a Change Order that does not include a time extension, the Contractor waives any claim for additional time for the work covered by that Change Order. Additional or extra work performed by the Contractor without written authorization of a Work Directive, Field Order or Change Order will not entitle the Contractor to an increase in the Contract Amount or an extension of the Contract Time.

Extra work shall be that work neither shown on the Contract Drawings nor specified. Such work shall be governed by all applicable provisions of the Contract Documents. In giving instructions, the Construction Manager shall have authority to make minor changes in the Work, not involving extra cost, or extra time, and not inconsistent with the intent of the Work. With the exception of an emergency which would endanger life or property, no extra work or change shall be made unless in pursuance of a written order by the City through the Construction Manager, and no claim for an addition to the total amount or total time of the Contract shall be valid unless so ordered in writing.

In case any change increases or decreases the Work shown, the Contractor shall be paid for the work actually done at a mutually agreed upon adjustment to the Contract Amount.

If the Contractor refuses to accept a Change Order, the City may issue it unilaterally. The Contractor shall comply with the requirements of the Change Order. The City shall provide for an equitable adjustment to the Contract, and compensate the Contractor accordingly. If the Contractor does not agree that the adjustment is equitable, it may submit a claim in accordance with the requirements herein stated.

### GC 6.2 DIFFERING SITE CONDITIONS

The Contractor shall promptly, and before such conditions are disturbed, notify the Construction Manager in writing, of any:

- a. Material that the Contractor believes may be hazardous waste that is required to be removed to a Class I, Class II, or Class III disposal site in accordance with provisions of law.
- b. Subsurface or latent physical conditions at the site differing from those indicated.
- c. Unknown physical conditions at the site of any unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract.

The Construction Manager shall promptly investigate the conditions, and if it finds that the conditions do materially differ, or do involve hazardous waste, and cause an increase or decrease in the Contractor's cost of, or the time required for performance of any part of the Work, the City shall cause to be issued a change order under the procedures provided herein.

In the event that a dispute arises between the City and the Contractor whether the conditions materially differ, or involve hazardous waste, or cause a decrease or increase in the Contractor's cost of, or time required for, performance of any part of the Work, the Contractor shall not be excused from any scheduled completion date provided for by the Contract, but shall proceed with all Work to be performed under the Contract. The Contractor shall retain any and all rights provided either by Contract or by law which pertain to the resolution of disputes and protests between the parties.

No claim of the Contractor under this clause shall be allowed unless the Contractor has given the notice required.

### GC 6.3 RESOLUTION OF DISPUTES

# GENERAL CONDITIONS

## 6.3.1 CONTRACT INTERPRETATION BY THE CONSTRUCTION MANAGER

Questions regarding the meaning and intent of the Contract Documents shall be referred in writing by the Contractor to the Construction Manager. Where practical, the Construction Manager shall respond to the Contractor in writing with a decision within seven (7) working days of receipt of the request.

## 6.3.2 CLAIMS

### A. Notice

If the Contractor disagrees with the Construction Manager's decision, or in any case where the Contractor deems additional compensation or a time extension to the Contract period is due the Contractor for work or materials not covered in the Contract or which the Construction Manager has not recognized as extra work, the Contractor shall notify the Construction Manager, in writing, of its intention to make claim. Claims pertaining to decisions based on Contract interpretation or such other determinations by the Construction Manager shall be filed in writing to the Construction Manager within five (5) days of receipt of such decision. All other claims or notices for extra work shall be filed in writing to the Construction Manager prior to the commencement of such work. Written notice shall use the words "Notice of Potential Claim". Such Notice of Potential Claim shall state the circumstances and all reasons for the claim, but need not state the amount.

It is agreed that unless notice is properly given, the Contractor shall not recover costs incurred by it as a result of the alleged extra work, changed work or other situation which, had proper notice been given, would have given rise to a right for additional compensation. The Contractor should understand that timely Notice of Potential Claim is of great importance to the Construction Manager and City, and is not merely a formality. Such notice allows the City to consider preventative action, to monitor the Contractor's increased costs resulting from the situation, to marshal facts, and to plan its affairs. Such notice by the Contractor, and the fact that the Construction Manager has kept account of the cost as aforesaid, shall not in any way be construed as proving the validity of the claim.

### B. Records of Disputed Work

In proceeding with a disputed portion of the Work, the Contractor shall keep accurate and complete records of its costs and shall make available to the Construction Manager a daily summary of the hours and classifications of equipment and labor utilized on the disputed work, as well as a summary of any materials or any specialized services which are used which shall be signed by the Construction Manager and Contractor daily. Such information shall be submitted to the Construction Manager on a weekly or daily basis as determined by the Construction Manager, receipt of which shall not be construed as an authorization for or acceptance of the disputed work.

### C. Submission of Claim Costs

Within thirty (30) days after the last cost of work for which the Contractor contends it is due additional compensation is incurred, but if costs are incurred over a span of more than thirty (30) days, then within fifteen (15) days after the thirtieth day and every month thereafter, the Contractor shall submit to the Construction Manager, as best the Contractor is able, its costs incurred for the claimed matter. Claims shall be made in itemized detail. Should the Construction Manager be dissatisfied with format or detail of presentation, and upon request for more or different information, the Contractor will promptly comply to the satisfaction of the Construction Manager. If the additional costs are in any respect not known with certainty, they shall be estimated as best as can be done. In case the claim is found to be just, it shall be allowed and paid for as provided in GC 6.4, MODIFICATION PROCEDURES and GC 5.5, PARTIAL PAYMENTS.

### D. Claim Meetings

The Construction Manager may call special meetings to discuss outstanding claims. The Contractor shall cooperate and attend such meetings prepared to discuss its claims, making available the personnel necessary for resolution, and all documents which may reasonably be requested by the Construction Manager.

## GC 6.4 MODIFICATION PROCEDURES

### 6.4.1 CHANGES IN CONTRACT PRICE

Whenever corrections, alterations, or modifications of the Work under this Contract are ordered by the Construction Manager, approved by the City, and increase the amount of work to be done, such added work

# GENERAL CONDITIONS

shall be known as extra work. When such corrections, alterations, or modifications decrease the amount of work to be done, such subtracted work shall be known as work omitted.

The difference in cost of the work affected by such change will be added to or deducted from the amount of said Contract Amount, as the case may be, by a fair and reasonable valuation, which shall be determined in one or more of the following ways as directed by the Construction Manager:

- a. By unit prices accepted by the City and stated in the Contract Documents or Schedule of Values;
- b. By unit prices subsequently fixed by agreement between the parties;
- c. By an acceptable lump sum proposal from the Contractor; or
- d. By Force Account (as described in GC 6.4.3, Force Account Payment, when directed and administered by the City or Construction Manager.

When required by the Construction Manager, the Contractor shall submit, in the form prescribed by the Construction Manager, an itemized breakdown with supporting data of the quantities and prices used in computing the value of any change that may be ordered.

The Construction Manager will review the Contractor's proposal for the change and negotiate an equitable adjustment with the Contractor. When there is an agreement, the Construction Manager will prepare and process the Change Order and make a recommendation for action by the City. All Change Orders must be signed by the Contractor and approved by the City unless unilaterally issued per GC 6.1, above.

The prices agreed upon and any agreed upon adjustment in Contract Time shall be incorporated in the written order issued by the City, which shall be written so as to indicate an acceptance on the part of the Contractor as evidenced by its signature. By signature of the Change Order, the Contractor acknowledges that the adjustments to cost and time contained in the Change Order are in full satisfaction and accord, payment in full, and so waives any right to claim any further cost and time impacts at any time during and after completion of the Contract for the changes encompassed by the Change Order.

When any Extra Work is performed by a Subcontractor, the markups established in GC 6.4.2 and GC 6.4.3 shall be applied to the Subcontractor's costs as determined under GC 6.4.2 and GC 6.4.3. The Contractor's markup on subcontracted work shall be limited to five percent (5%) of the total of the Subcontractor's costs, which amount shall constitute the markup for all overhead and profit for the Contractor on work by the Subcontractor. On any item(s) of Extra Work, there shall only be one markup allowed to the Subcontractor even if there are multiple tiers of subcontractors, and only one markup allowed to the Contractor for subcontracted work.

## 6.4.2 NEGOTIATED CHANGE ORDERS

Under the methods described in GC 6.4.1.b and 6.4.1.c above, the Contractor shall submit substantiating documentation with an itemized breakdown of Contractor and subcontractor direct costs, including labor, material, equipment, rentals, and approved services pertaining to such ordered work in the form and detail acceptable to the Construction Manager. The direct costs shall include only the payroll cost for workers and foremen including wages, fringe benefits as established by negotiated labor agreements or state prevailing wages, workers' compensation and labor insurance, and labor taxes as established by law. No other fixed labor burdens will be considered. The cost of materials used and equipment delivered and installed in the Work shall be as substantiated by appropriate documents. The cost of construction machinery and equipment shall be based on fair rental or ownership values acceptable to the Construction Manager as described in GC 6.4.3, Force Account Payment, and the cost of incidentals directly related to such work. The direct costs shall not include any labor or office costs pertaining to the Contractor's managers or superintendents, its office and office facilities, or anyone not directly employed on such work, nor the cost of small tools, as all such indirect costs form a part of the Contractor's overhead expense.

Under the method described in GC 6.4.1.b and 6.4.1.c, the maximum percentage which will be allowed for the Contractor's combined overhead and profit will be:

Direct Labor	fifteen percent (15%)
Materials	fifteen percent (15%)

# GENERAL CONDITIONS

Equipment (owned or rented)

fifteen percent (15%)

The above fees represent the maximum limits which will be allowed, and they include the Contractor's indirect home office expenses and all costs for cost proposal preparation.

The amount of credit to be allowed by the Contractor to the City for any such change which results in a decrease in cost will be the amount of the actual net decrease plus a credit in accordance with the markups allowed above.

The Contractor shall not claim for anticipated profits on work that may be omitted unless the deleted amount of work is determined to constitute a cardinal change to the Project.

## 6.4.3 FORCE ACCOUNT PAYMENT

If either the amount of Work or payment for a Change Order cannot be determined or agreed upon beforehand, the City may direct by written Change Order, Work Directive, or Field Order that the Work be done on a force account basis. The term "force account" shall be understood to mean that payment for the Work will be done on a time and expense basis, that is, on an accounting of the Contractor's forces, materials, equipment, and other items of cost as required and actually used to do the work. In order to have a valid claim for Force Account payment, the Contractor must submit on a daily basis the City's Daily Extra Work Report signed by both the Contractor's representative and the City's Construction Manager or inspector. For the work performed, payment will be made for the documented actual cost of the following:

- a. Direct labor cost for workers, including foremen, who are directly assigned to the force account Work. Direct labor cost is the actual payroll cost including wages, fringe benefits as established by negotiated labor agreements or state prevailing wages, workers' compensation and labor insurance, and labor taxes as established by law. No other fixed labor burdens will be considered.
- b. Material delivered and used on the designated work, including sales tax, if paid for by the Contractor or its subcontractor. Material wasted or disposed of in a manner not called for under the contract, material not unloaded from the transporting vehicle, material placed outside the limits indicated or given plans; or material remaining on hand after completion of the work will not be paid for except as otherwise provided.
- c. Equipment rental: For any machinery or equipment, the use of which has been authorized by the Construction Manager, the Contractor will be paid for the use of such machinery or equipment in the manner hereinafter specified, regardless of ownership and any rental or other agreement, if such may exist, for the use of such equipment entered into by the contractor.

Rental rates will be determined as follows:

1. The base rates shall be those established in publications and revisions thereto entitled "Rental Rate Blue Book for Construction Equipment" or the "Rental Rate Blue Book for Older Construction Equipment" available from Equipment Watch, 1735 Technology Drive, Suite 410, San Jose, CA 95110-1313, phone (408) 467-6700.

The hourly rate to be paid shall be the monthly rate divided by 176, multiplied by the regional adjustment factor, and multiplied by the appropriate rate adjustment factor, then plus the estimated operating cost per hour shown therein, and then rounded to the nearest \$0.10.

2. Attachments (e.g. tractor with ripper and dozer or tractor with loader and backhoe) will be included in the hourly rental rate only when deemed essential to the work as determined by the Construction Manager. When multiple attachments are approved for use and are being used interchangeably, the attachment having the highest rental rate shall be the only one included for payment.
3. No direct payment will be made for necessary accessories (including replenishing blades, augers, teeth, hoses, bits, etc.) if not listed in the Rental Rate Blue Book.

# GENERAL CONDITIONS

4. No compensation will be allowed for shop tools having a daily rental rate of less than \$10 as set forth in Section 18 of the Rental Rate Book.

If ordered to use equipment not listed in the aforementioned publications, a suitable rental rate for such equipment will be established. Contractor shall furnish any cost data which might assist in the establishment of such rental rate.

Except as provided below, payment will be made for the actual time that such equipment is in operation on the work. Time will be measured in 0.5 hours increments of actual working time and necessary traveling time of the equipment within the limits of the project.

Authorized standby time for idle equipment will be paid for at 50% of the "monthly rate divided by 176, multiplied by the regional adjustment factor, and multiplied by the rate adjustment factor", and rounded to the nearest \$0.10. No operating cost, markup, overhead or profit will be added.

The rental rates paid as above provided shall include the cost of fuel, oil, lubrication, supplies, small tools, necessary attachments, repairs and maintenance of any kind, depreciating, storage, insurance and all incidentals.

When special equipment has been ordered in connection with force account work, travel time and transportation to the project will be measured as hereinafter outlined. For the use of special equipment moved in on the work and used exclusively for extra work paid for on a force account basis, the rental rates as determined above and the cost of transporting the equipment to the location of the work and its return to its original location will be paid, all according to the following provisions:

- (a) The original location of the equipment to be hauled to the location of the work will be agreed to in advance.
- (b) The City will pay the costs of loading and unloading such equipment.
- (c) The cost of transporting equipment on low bed trailers shall not exceed the hourly rates charged by established haulers.
- (d) The rental period shall begin at the time the equipment is unloaded at the site of the extra work, shall include each day that the equipment is at the site of the extra work, excluding Saturdays, Sundays and legal holidays unless the extra work is performed on such days, and shall terminate at the end of the day on which the Construction Manager directs the Contractor to discontinue the use of such equipment.
- (e) Should the Contractor desire the return of the equipment to a location other than its original location, the City will pay the cost of transportation by the above provisions, provided such payment shall not exceed the cost of moving the equipment to the work.
- (f) Payment for transporting and loading and unloading equipment as above provided will not be made if the equipment is used on the work in any other way than upon extra work paid for on a force account basis.

To the preceding costs, there shall be added the following fees as the combined overhead and profit for the Contractor:

- a. A fixed fee not-to-exceed fifteen (15) percent of the costs of Item a, labor, above.
- b. A fixed fee not-to-exceed fifteen (15) percent of the costs of Item b, materials, above.
- c. A fixed fee not-to-exceed fifteen (15) percent of the costs of Item c, equipment, above.

The added fixed fees shall be considered to be full compensation covering the cost of general supervision, overhead, profit, and all other expenses. The above fixed fees represent the maximum limits which will be

# GENERAL CONDITIONS

allowed, and they include the Contractor's indirect home office expenses and all costs for cost proposal preparation and record keeping.

## **6.4.4 UNIT PRICE ADJUSTMENTS DUE TO INCREASED OR DECREASED QUANTITIES**

The unit prices as stated in the Bid and as negotiated in Change Orders shall apply to one hundred (100) percent of the quantity indicated to be estimated quantity for the Bid item, plus or minus twenty-five (25) percent. Either party to the Contract will be entitled to an equitable adjustment in unit prices for that portion of the actual quantity less than seventy-five (75) percent or more than one hundred twenty-five (125) percent of the original Bid quantity. Such equitable adjustment shall be determined in one or more of the following ways:

- A. If the parties are able to agree, the price will be determined by using:
  - 1. Unit prices; or
  - 2. Other agreed upon prices.
  
- B. If the parties cannot agree, the price will be determined by the Engineer using:
  - 1. Unit prices, or
  - 2. Other means to establish costs.

The following limitations shall apply in determining the amount of the equitable adjustment:

- A. No claim for loss of anticipated profits on deleted or uncompleted work or consequential damages of any kind will be allowed.
  
- B. If the actual quantity of work performed is less than seventy-five (75) percent of the original Bid quantity, the total payment for the item will be limited to not more than seventy-five (75) percent of the amount originally Bid.
  
- C. No payment will be made for extended or unabsorbed home office overhead and field overhead expenses to the extent that there is an unbalanced allocation of such expenses among the contract Bid items.
  
- D. No adjustment in the unit contract bid price will be made for any item unless the increase or decrease in quantity results in a change of \$10,000 or more as measured by the original bid quantity and unit price for the item.

The City will not adjust for increases or decreases if the City has entered the amount for the Bid item in the proposal form only to provide a common basis for bidders.

## **6.4.5 TIME EXTENSIONS FOR CHANGE ORDERS**

If the Contractor requests a time extension for the extra work necessitated by a proposed Change Order, the request must be accompanied by a time impact analysis, based on the latest Construction Schedule update, or other method acceptable to the Construction Manager.

## **GC 6.5 DISPUTES**

Any dispute relating to this Contract after award shall be resolved through good faith efforts by the Contractor and City. The Contractor shall have the right to appeal any decision by any inspector to the Construction Manager; and, by the Construction Manager to the Owner's Representative. Initial notice of any dispute must be filed with the Construction Manager per GC 6.3.2.A, Claims - Notice.

If the Contractor considers the determination of the Construction Manager to be unfair he/she shall, within ten (10) days after receipt of the Construction Managers decision, file a written protest with the Owner's Representative stating clearly and in detail his/her objections and the reasons therefore. The Owner's Representative shall review the issue in dispute and shall promptly advise the Contractor in writing of his/her final decision. At all times, the Contractor shall carry on the Work and maintain its Construction Schedule in accordance with the requirements of the Contract and the determination of the City, pending resolution of any dispute.

If review by the Owner's Representative does not result in a resolution of the dispute, the parties shall proceed to non-binding mediation. Non-binding mediation shall be conducted under the auspices of the American Arbitration Association acting under its Construction Industry Mediation Procedures. Mediation conducted in accordance with this provision shall take place in Carson City, Nevada. Mediation shall be conducted by a single mediator, approved by

# GENERAL CONDITIONS

both the City and the Contractor from a list provided by the American Arbitration Association. Each party shall pay one-half of the mediator's compensation and the administration fees. Each party shall bear its own expenses associated with the mediation, including but not limited to its own attorney and expert consultant fees. Each party shall have at least one individual attend the mediation proceeding who has full authority to settle the dispute on their behalf, provided however, that any agreement reached will have to be put before the Carson City Board of Supervisors or Carson City Regional Transportation Commission for final approval.

## **GC 6.6            ARBITRATION**

Any controversy or claim arising out of or relating to the performance of these Contract Documents, which cannot be resolved by mutual agreement or mediation, shall be submitted to binding arbitration by the claiming party by filing a Notice of Intent to Arbitrate (demand) within fifteen (15) days of the conclusion of mediation, specified above in GC 6.5, DISPUTES, with the other party and three (3) copies to the American Arbitration Association or the Nevada Arbitration Association. Either party to the Contract Documents may request that any dispute or difference be arbitrated by filing a demand to arbitrate. Said demand shall contain a statement of the disputes, the amount involved, if any, and the remedy sought. Through written mutual consent, the parties may agree to combine all disputes for a single arbitration proceeding during or after substantial completion of the Project. Such arbitration shall be conducted in accordance with the Construction Industry Arbitration Rules (which can be found at [www.adr.org](http://www.adr.org)) administered by the American Arbitration Association or the Nevada Arbitration Association. Failure to give such notice in the time specified shall preclude the party desiring arbitration from subsequently arbitrating that particular claim, dispute, or other matter. Judgment on the award rendered by the arbitrators may be entered in the First Judicial District Court of the State of Nevada.

In the event that any controversy or claim arising out of or relating to the performance of this Contract becomes the subject of arbitration, Carson City shall have the right to join or bring an additional party to the arbitration proceeding, and the Contractor hereby irrevocably consents and agrees to such joinder.

In the event that Carson City is named as a party to any arbitration action arising out of, or resulting from the design or construction of the Project, the Contractor hereby agrees, at the request of Carson City, to be joined as a party to that arbitration proceeding and to be bound by any decision resulting from arbitration.

In the event of arbitration, it is agreed by the parties that all means of discovery, including but not limited to depositions and interrogatories, will be afforded to the parties involved in the arbitration, and the appointed arbitrator shall have all authority to impose sanctions against either party for failing to comply with the rules for discovery provided under the Nevada Rules of Civil Procedure.

Any arbitration carried out under the provisions of GC 6.6, ARBITRATION, shall be heard and determined by a three (3) member panel. From a list of arbitrators provided by the American Arbitration Association, Carson City shall select one (1) member of the panel and the Contractor shall select one (1) member of the panel. The third member of the panel shall be selected from said list by the first two (2) members and shall be approved by both Carson City and the Contractor. The third (3<sup>rd</sup>) member shall function as the Chairperson of the arbitration panel.

The Contractor shall carry on the Work and maintain progress during any arbitration or any other disputes unless otherwise mutually agreed upon in writing.

Arbitration conducted in accordance with this provision shall take place in Carson City, Nevada.

# GENERAL CONDITIONS

## SECTION 7.0 CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

### GC 7.1 GENERAL

The Contractor shall provide all temporary facilities and utilities required for prosecution of the Work, protection of employees and the public, protection of the Work from damage by fire, weather or vandalism, and such other facilities as may be specified or required by any legally applicable law, ordinance, rule, or regulation.

### GC 7.2 TEMPORARY UTILITIES AND CONSTRUCTION FACILITIES

#### 7.2.1 ELECTRICAL SERVICE

The Contractor shall arrange with the local utility to provide adequate temporary electrical service at a mutually agreeable location. The Contractor shall then provide adequate jobsite distribution facilities conforming to applicable codes and safety regulations. The Contractor shall provide, at its own cost, all electric power required for construction, testing, general and security lighting, and all other purposes whether supplied through temporary or permanent facilities.

#### 7.2.2 WATER

The Contractor shall pay for and shall provide for all facilities necessary to furnish water for its use during construction. Water used for human consumption shall be kept free from contamination and shall conform to the requirements of the state and local authorities for potable water. The Contractor shall pay for all water used for the Contractor's operations prior to final acceptance. The Contractor shall be responsible for obtaining a City water meter and paying all associated charges, including monthly water usage.

The Contractor is hereby informed that Carson City does not allow use of potable water for dust control on unpaved areas and/or earthwork compaction except for health safety concerns as determined by NDEP. The Contractor must obtain a "Treated Wastewater Effluent for Construction Purposes Permit" from the Carson City Wastewater Treatment Plant located at 3320 E. Fifth Street, Carson City. Special arrangements must be made with the Carson City Water Utility located at 3505 Butti Way, Carson City, for use of potable water for dust control on paved areas.

#### 7.2.3 TEMPORARY LIGHTING

The Contractor shall provide temporary lighting in all work areas sufficient to maintain a lighting level during working hours not less than the lighting level required by OSHA standards. As permanent lighting facilities are completed they may be used in lieu of temporary facilities, provided however, that bulbs, lamps, or tubes of such facilities used by the Contractor shall be replaced prior to final acceptance of the Work.

#### 7.2.4 HEATING AND VENTILATION

The Contractor shall provide means for heating and ventilating all work areas as may be required to protect the Work from damage by freezing, high temperatures, weather, or to provide a safe environment for workers. Unvented direct fired heaters shall not be used in areas where freshly placed concrete will be exposed to the combustion gases until at least two hours after the concrete has attained its initial set.

#### 7.2.5 SANITARY CONVENIENCES

The Contractor shall provide suitable and adequate sanitary conveniences for the use of all persons at the site of the Work. Such conveniences shall include chemical toilets or water closets and shall be located at an appropriate location at the site of the Work. All sanitary conveniences shall conform to the regulations of the public authority having jurisdiction over such matters. At the completion of the Work, all such sanitary conveniences shall be removed and the site left in a sanitary condition.

#### 7.2.6 COMMUNICATIONS

The Contractor shall provide, at its own cost, telephone communications to the Project Site either through ground lines or cellular equipment.

#### 7.2.7 CONSTRUCTION FACILITIES

Construction hoists, elevators, scaffolds, stages, shoring, and similar temporary facilities shall be of ample size and capacity to adequately support and move the loads to which they will be subjected. Railings, enclosures, safety devices, and controls required by law or for adequate protection of life and property shall be provided.

#### A. Staging and Falsework

# GENERAL CONDITIONS

Temporary supports shall be designed by a professional registered engineer with an adequate safety factor to assure adequate load bearing capability. If requested by the Construction Manager, the Contractor shall submit design calculations for staging and shoring prior to application of loads.

Excavation support shall be in accordance with GC 2.6.12 (D), Excavation Safety.

## **B. Temporary Enclosures**

When sandblasting, spray painting, spraying of insulation, or other activities inconvenient or dangerous to property or the health of employees or the public are in progress, the area of activity shall be enclosed adequately to contain the dust, over-spray, or other hazard. In the event there are no permanent enclosures of the area, or such enclosures are incomplete or inadequate, the Contractor shall provide suitable temporary enclosures.

## **C. Warning Devices and Barricades**

The Contractor shall adequately identify and guard all hazardous areas and conditions by visual warning devices and, where necessary, physical barriers. Such devices shall, as a minimum, conform to the requirements of OSHA and MUTCD.

## **D. Use of Explosives**

All persons engaged in the activities of receiving, storing, using, handling or transporting any explosives must obtain a permit from the Carson City Fire Department; and all work shall be governed by Title 14, Fire, of the Carson City Municipal Code. The Contractor must notify the Construction Manager at least 14 days prior to the use of explosives.

## **GC 7.3 CONSTRUCTION CONTROLS**

### **7.3.1 PROTECTION AND RESTORATION OF EXISTING IMPROVEMENTS**

The Contractor shall not trespass upon private property and shall be responsible for the protection of public and private property at and adjacent to the Work and shall exercise due caution to avoid damage to such property.

The Contractor shall not infringe upon wetland areas at the Site, whether identified or not, without the written approval of the Construction Manager. Infringement on wetlands will give cause for suspension of all work being conducted on or adjacent to the wetland area.

In addition to any requirements imposed by law, the Contractor shall shore up, brace, underpin, and protect as may be necessary, all foundations and other parts of all existing structures adjacent to and adjoining the Site of the Work which are in any way affected by the excavations or other operations connected with the performance of the Work. Whenever any notice is required to be given to any adjacent or adjoining landowner or other party before commencement of any work, such notice shall be given in writing by the Contractor.

The Contractor shall repair or replace all existing improvements which are not designated for removal (e.g., curbs, sidewalks, survey points, fences, walls, signs, utility installations, pavements, structures, irrigation lines and facilities, etc.) and are damaged or removed as a result of its operations. Repairs and replacements shall be at least equal to existing improvements and shall match them in finish and dimension.

Land survey monuments and property marks shall not be moved or otherwise disturbed by the Contractor until the Contractor arranges for a Nevada licensed Land Surveyor to witness or otherwise reference their locations in accordance with the requirements of the agency having jurisdiction. Any survey monument or property mark so moved or disturbed must be re-established and re-set by a Nevada licensed Land Surveyor in accordance with the requirements of the agency having jurisdiction.

Trees, lawns, and shrubbery that are not to be removed shall be protected from damage or injury. If damaged or removed because of the Contractor's operations, they shall be restored or replaced in as nearly the original conditions and location as is reasonably possible or better. Where existing turf areas are damaged, they must be replaced with fresh sod of matching grass.

The Contractor shall give reasonable notice, as determined by the Construction Manager, to occupants or owners of adjacent property to permit them to salvage or relocate plants, trees, fences, sprinklers, and other

# GENERAL CONDITIONS

improvements within the right-of-way which are designated for removal or would be destroyed because of the Work.

## **A. Flood Protection**

During the construction period, the Contractor shall be responsible for any damage which may result from flooding, including any earthwork re-excavation or replacement that may be a result of flooding. The Contractor shall submit to the Construction Manager a flood control plan for trenching operations associated with the Work. The flood control plan shall describe the Contractor's plan for control and diversion of surface runoff and flood flows around trench and structure excavations, and the Contractor's action plan for protection of the work and Contractor's plant and equipment during flood events.

## **7.3.2 PROJECT SECURITY**

The Contractor shall make adequate provision for the protection of the Work area against fire, theft, and vandalism, and for the protection of the public against exposure to injury. Contractor shall call the Carson City Sheriff's Department at 887-2008 or call 911 in the event of any public harassment or violence to any of the Contractor's or subcontractor's employees.

## **A. Fire Extinguisher**

Sufficient number of fire extinguishers of the type and capacity required to protect the Work and ancillary facilities, shall be provided and maintained in readily accessible locations.

## **B. Temporary Fences**

The Contractor shall enclose the site of the Work other than roadways with a fence or barricades adequate to protect the Work and temporary facilities against acts of theft, violence, or vandalism. Work within the roadway right-of-way shall be protected as provided for in the "Manual on Uniform Traffic Control Devices."

In the event all or a part of the site is to be permanently fenced, this permanent fence or a portion thereof may be built to serve for protection of the Work site, provided however, that any portions damaged or defaced shall be replaced prior to final acceptance.

Temporary openings in existing fences shall be protected to prevent intrusion by unauthorized persons. During night hours, weekends, holidays, and other times when no work is performed at the site, the Contractor shall provide temporary closures or guard service to protect such openings. Temporary openings shall be fenced when no longer necessary.

## **7.3.3 ACCESS ROADS**

Access roads shall be maintained to all storage areas and other areas to which frequent access is required. Similar roads shall be maintained to all existing facilities on the site of the Work to provide access for delivery of material and for maintenance and operation. Where such temporary roads cross buried utilities that might be injured by the loads likely to be imposed, such utilities shall be adequately protected by steel plates or wood planking, or bridges shall be provided so that no loads shall discharge on such buried utilities.

## **7.3.4 NOISE ABATEMENT**

Operations at the site shall be performed to minimize unnecessary noise. Special measures shall be taken to suppress noise during night hours. Noise levels due to construction activity shall not exceed the following levels:

**Allowable Daytime Noise Levels** as measured at the exterior of any given site shall be a noise level of not more than 75 dba Leq from the hours of 7:00 AM to 8:00 PM daily.

**Allowable Nighttime Noise Levels** as measured at the exterior of any site shall be a noise level of not more than 55 dba Leq from the hours of 8:00 PM to 7:00 AM daily.

**Internal combustion engines used on the Work shall be equipped with a muffler of a type recommended by the manufacturer. No internal combustion engine shall be operated without said muffler.**

## **7.3.5 WORKING HOURS**

# GENERAL CONDITIONS

Construction shall be allowed only between the hours of seven (7:00) AM and four (4:00) PM Monday thru Friday (Normal Working Hours) unless otherwise specified in the Special Conditions.

The starting, fueling, maintenance of equipment, and delivery of equipment and materials, and placement or removal of traffic control devices is considered Construction and shall not be allowed outside of the Normal Working Hours. Requests for exceptions to these limitations shall be made in writing to the Construction Manager for consideration in non-sensitive, non-residential areas.

The Contractor may request to work outside the Normal Working Hours by submitting a written request to the Construction Manager at least seventy-two (72) hours in advance of the start of work outside the Normal Working Hours. Permission may or may not be granted by the Construction Manager, with hours noted by the Construction Manager. The Contractor shall be responsible for the costs of any inspection, testing, and additional administration incurred by the City, or its agents and representatives, for work by the Contractor outside the Normal Working Hours defined above, on weekdays in excess of eight (8) hours, or any work on weekends or holidays recognized by the City. Such costs shall be withheld from the succeeding monthly progress payment. Any work specifically required to be performed outside the Normal Working Hours as may be indicated in the Special Conditions, or work required by the Construction Manager, in writing, to be performed outside the Normal Working Hours, is excluded from withholding of payment.

## **7.3.6 DRAINAGE CONTROL / STORM WATER POLLUTION PREVENTION PLAN**

In all construction operations, care shall be taken not to disturb existing drainage patterns whenever possible. Particular care shall be taken not to direct drainage water onto private property. Drainage water shall not be diverted to streets or drainage ways inadequate for the increased flow. Drainage means shall be provided to protect the Work and adjacent facilities from damage due to water from the site or due to altered drainage patterns from construction operations. Temporary provisions shall be made by the Contractor to insure the proper functioning of gutters, storm drain inlets, drainage ditches, culverts, irrigation ditches, and natural water courses. The Contractor shall provide water quality and erosion controls in accordance with the NDEP "Handbook of Best Management Practices" to prevent sedimentation runoff from the Site.

The Contractor shall comply with the National Pollutant Discharge Elimination System (NPDES) regulations for storm water discharges from a construction site and the Stormwater General Permit NVR100000, State of Nevada, Division of Environmental Protection, General Permit. Preparation of a Storm Water Pollution Prevention Plan (SWPPP) and compliance with the permitting requirements shall be the Contractor's responsibility. The Contractor shall submit the required Notice of Intent (NOI) to the NDEP and comply with the SWPPP referenced above. The Contractor shall obtain any required Temporary Permits prior to any discharges. The Contractor shall submit any required Notification of Termination to the NDEP upon completion of construction and final site stabilization, and shall submit to the City copies of all records associated with the permitting requirements. Contractor must submit a copy of the SWPPP permit and plan to the Construction Manager prior to the start of work.

The Contractor shall be responsible for all costs associated with complying with the permit requirements, submitting any required NOI, preparing and complying with the SWPPP, revising the SWPPP, any required submittal of the Notification of Termination, any required discharge permit and any other related costs.

## **7.3.7 CONSTRUCTION CLEANING**

The Contractor shall, at all times, keep property on which work is in progress and the adjacent property free from accumulations of waste material, rubbish, caused by his/her operations. All surplus material shall be removed from the site immediately after completion of the work causing the surplus materials. Spillage resulting from hauling operations along or across existing streets or roads shall be removed immediately by the Contractor. All gutters and roadside ditches shall be kept clean and free from obstructions. Daily cleanup of trash, paper, and small debris subject to movement with winds shall be required. **The Contractor shall reasonably clean the immediate Work Area on a daily basis to reduce risk of personal injury as well as fire hazard.**

## **7.3.8 DISPOSAL OF MATERIAL**

Unless otherwise specified in the Special Conditions, the Contractor shall make his/her own arrangements for disposing of construction waste materials outside the Project Site and the Contractor shall pay any and all dump fees required, except as provided below. If the Contractor arranges to dispose of construction waste materials on private property, he/she shall first obtain written permission from the property owner on whose property the disposal is to be made in which the City is absolved from any and all liability and responsibility in

# GENERAL CONDITIONS

connection with the disposal of such material on said property. A copy of said written permission must be delivered to the Construction Manager prior to starting disposal operations. When construction waste material is disposed of as above provided, the Contractor shall conform to all required codes and permits pertaining to grading, hauling, and filling of earth or other materials. The Contractor shall contact the City's Community Development Department and the Health Department concerning such codes and permits.

Disposal of all construction waste including but not limited to all pipe, concrete, manholes, pavement, building and excavated materials, and all other appurtenances shall be disposed of in a manner consistent with all local, State and Federal laws and guidelines. Any hazardous waste shall be disposed of at hazardous waste disposal sites that are permitted to accept such wastes. All disposal site locations shall be approved in writing by the Construction Manager. A copy of the disposal plans and any required permits must be delivered to the Construction Manager prior to starting disposal operations.

Asbestos Cement Pipe (ACP) removed from the Project shall be separated from other material, manifested and delivered to the Carson City Landfill. For manifest and disposal requirements prior to removal of any ACP the Contractor shall contact:

Mr. Ken Arnold  
Carson City Environmental Chief  
(775) 887-2355

ACP Manifests are valid for ten (10) days from date of issuance.

Construction waste including but not limited to all pipe, concrete, manholes, pavement, building and excavated material, and all other appurtenances removed from the Project may be accepted free of charge at the Carson City Landfill if approved under the direction of the Construction Manager. A Landfill Disposal Form will be provided by the Carson City Inspector upon request by the Contractor. The Contractor or Contractor's agent will provide a Landfill Disposal Form, which must be signed, dated and timed by a Carson City Inspector, to the Landfill Attendant for a waiver of disposal fees for each separate load. The Contractor will pay the full disposal fee if no Landfill Disposal Form from Carson City is presented to the Landfill Attendant. Carson City will not reimburse the Contractor for disposal fees due to failure to comply with these conditions.

## **7.3.9 PARKING AND STORAGE AREAS**

All stockpiled materials and parked equipment at the job site shall be located to avoid interference with private property and to prevent hazards to the public. Locations of stockpiles, parking areas, and equipment storage must be approved by the Construction Manager. Material and equipment may not be stored in public right-of-way unless prior approval by the Construction Manager.

## **GC 7.4 PUBLIC SAFETY/CONVENIENCE AND TRAFFIC CONTROL**

The Contractor shall so conduct his/her operations as to offer the least possible obstruction and inconvenience to the general public, including the residents, businesses and any other contractors working in the vicinity of the Work, and he/she shall have under construction no greater length or amount of work than he/she can prosecute properly with due regard to the rights of the public. Convenient access to driveways, houses, and buildings along the line of work shall be maintained and temporary crossings shall be provided and maintained in good condition. Traffic shall not be prevented from accessing business. Maintain a minimum of one (1) access to each business property at all times. Business Access signs shall be used to direct business traffic. Not more than one (1) crossing or intersecting street or road shall be closed at any one time. Safe access must be maintained for pedestrian traffic through or around the work area at all times.

Inconvenience caused by digging across driveways and sidewalks shall be kept to a minimum by restoring the serviceability of the driveway or sidewalk as soon as possible. Contractor shall provide and identify to the Construction Manager a person to act as a community liaison person, who must be fluent in English with good communication skills, to personally contact each resident and business at least three (3) working days prior to performing any Work which effects their sewer or water service, restricts on street parking, restricts access to their property, or blocks a driveway or sidewalk. Said community liaison person shall provide written notices, pre-approved by the Construction Manager, to all such residents and businesses and must be available and able to answer their questions. Copies of notices to all properties other than single family residences provided to the Construction Manager shall include a name and signature of the person accepting the notice for those properties. The Contractor shall make every effort to provide alternate access to the property during such closure, if at all possible. The Contractor shall replace or repair any

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damage done to driveways or sidewalks and shall provide temporary relief in the form of steel plates and supports of adequate strength over the excavation. Access to properties must be restored during all non-working hours.

Direct access shall be provided at all times to fire stations, fire hydrants, hospitals, police stations and at all other agencies or services where emergencies may require immediate access to same.

Temporary paving replacement in front of business establishments shall be placed immediately following backfill and shall remain in place until the condition of the backfill is suitable for permanent pavement replacement.

No streets or roads shall be blocked or made inaccessible, due to the Contractor's work, without approval of the City. No open excavations shall be allowed during non-working hours. Excavations shall be backfilled to grade and, if in a pavement area, temporarily paved level with adjacent pavement or, with the prior approval of the Construction Manager, covered with steel plates during non-working hours. If temporary paving and/or maintenance of temporary paving of all disturbed streets, driveways and sidewalks is not completed prior to the end of each work day, the Construction Manager may suspend the Work on the entire project, without any additional costs to the City, until the temporary paving is completed and/or properly maintained. The Construction Manager shall be the judge of proper maintenance of the temporary paving.

If needed, the City will provide the Contractor with "Temporary No Parking" signs to be posted in the construction area by the Contractor to accommodate each day's work. The Contractor must post the "Temporary No Parking" signs in the construction area no less than seventy-two (72) hours prior to the effective start of such parking restrictions. Temporary No Parking hours are to conform to the Contractor's Working hours, but in no instance shall they exceed the Working Hours as specified in GC 7.3.5 or as amended in the Special Conditions. Contractor must keep a log of day, date, time and location that the signs are posted. If, when work starts, vehicles are parked in violation of the posted restrictions, the Contractor shall call the Carson City Sheriff's Office Dispatch Center at 887-2008 to request that the violating vehicle(s) be towed. Contractor shall identify expected no parking areas on the Traffic Control Plan and shall notify the Construction Manager at least one (1) week prior to the need for the "Temporary No Parking" signs.

## **7.4.1 HAUL ROUTES**

Prior to hauling, the Contractor shall submit for approval the proposed route(s) for all construction traffic on the Project. This shall include any designated routes, if any, shown on the Contract Drawings. Upon approval, the Contractor shall adhere to approved routes only.

## **7.4.2 TRAFFIC CONTROL**

During construction within traffic roadways the Contractor shall maintain no less than one (1) lane of traffic during working hours and two (2) lanes at all other times. When one-way traffic is in effect, the Contractor shall employ no less than two (2) flaggers to facilitate the safe flow of traffic. No streets or roads shall be blocked, closed or made inaccessible due to the Contractor's work, without the prior approval of the Construction Manager.

The Contractor shall provide and maintain traffic control devices such as signs, warning lights, reflectors, barriers, fences, flaggers, steel plates, barricades, light signs and other necessary safety devices and measures on all sides of the construction zone, the number, size, message and spacing of which shall be governed by the Traffic Control Plans, local ordinance, or permit requirements. Traffic control shall be in accordance with the MUTCD. Any Traffic Control for work within NDOT right-of-way shall be in accordance with the NDOT permit requirements. The Contractor shall submit for approval by the City and any other applicable agency, its traffic control plans at least two (2) weeks prior to beginning work on public streets in accordance with GC 4.0, SHOP DRAWINGS AND QUALITY CONTROL.

The Contractor shall designate a Traffic Control Supervisor who shall be responsible for preparing and signing all Traffic Control Plans, and for installing and maintaining all traffic control devices as shown on the approved Traffic Control Plans. Said Traffic Control Plans must be per the provisions of the MUTCD and any Special Conditions. The Traffic Control Supervisor shall be available to be contacted by the Construction Manager twenty-four (24) hours per day for the duration of the Contract. The Traffic Control supervisor must be certified as a worksite traffic supervisor by ATSSA. As a minimum, the Traffic Control Supervisor shall check all traffic control devices at the start, mid-day, and end of each work day and at least once on every non-working day.

In addition to the flaggers required above, the Contractor shall employ flaggers at places designated by the Construction Manager for the safe movement of the public through the Work area. Flaggers shall possess a valid flagger card attesting that they have satisfactorily completed an instructional course in flagger procedures

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conducted by NDOT or some other approved course given by another entity of government within the State of Nevada.

No material or equipment shall be stored or parked where it will interfere with the free and safe passage of public traffic, and at the end of each day's work, and at other times when construction operations are suspended for any reason, the Contractor shall remove all materials, equipment and other obstructions from the public right-of-way. With the prior approval of the Construction Manager, the Contractor may shield the public traffic from materials or equipment within the public right-of-way by the use of temporary concrete or water filled barrier rails.

The Contractor shall notify the Carson City Fire Department and Sheriff Department dispatch center at (775) 887-2008 at least twenty-four (24) hours in advance of rerouting public traffic when traffic patterns are to be altered due to construction operations. Said notification shall set forth the specific traffic patterns to be provided in lieu of the normal routing and the estimated duration of such change(s).

Should the Contractor appear to be negligent in furnishing or maintaining warning and protective measures, as above provided, the Construction Manager may direct attention to the existence of the hazard, and the necessary warning and protective measures shall be immediately furnished and installed by the Contractor at its expense. Failure to do so will be cause to suspend the Work until the deficiency is corrected. If the Contractor does not correct a Traffic Control deficiency by the end of the work day and the Construction Manager determines that the public safety is endangered, then the Construction Manager may take the necessary action to correct the deficiency pursuant to GC 2.5.4, City's Right to Carry Out the Work.

## **7.4.3 TRAFFIC DETOURS**

Detouring traffic to private streets shall not be allowed. Advance warning/detour signs shall be used to direct through-traffic, and shall be placed to notify traffic to avoid all possible situations that require individual motorists to turn around to avoid the closure. The advanced warning signs shall be placed in accordance with the approved Traffic Control Plan. No detour or street closure signing shall be placed on any street prior to the start of Work hours and shall be removed prior to the end of Work hours unless otherwise provided in the approved Traffic Control Plan.

## **7.4.4 PEDESTRIAN AND BICYCLE DETOURS**

Advanced warning/detour signs shall be placed to notify pedestrian and bicycle traffic of any closure and to avoid all possible situations that may require individuals to turn around to avoid the closure.

## **GC 7.5 PROJECT SIGNS**

If required by Contract Special Conditions, the Contractor shall provide, install and maintain for the duration of the Project, Project sign(s). Two (2) signs shall be required for pipeline projects. The sign(s) shall be installed within fifteen (15) days of the Notice to Proceed and shall be installed where directed by the Construction Manager. The Project Sign(s) shall conform to the requirements listed in the Special Conditions.

## **GC 7.6 PROJECT OFFICE**

Unless the Contractor has an office in the Carson City/Reno/Sparks area, the Contractor shall maintain a suitable office on the Project site. The Contractor shall maintain at the Project site copies of the Contract Documents, record drawings, Project schedule, submittals, permits, Material Safety Data Sheets, approved Traffic Control Plans, and other relevant documents which shall be accessible to the Construction Manager and other City representatives during normal working hours. Said site office shall be the headquarters of the Contractor's representative authorized to receive Drawings, instructions, or other communications or articles from the City or its agents unless the Contractor notifies the City otherwise per GC 2.6.1, Office.

## **GC 7.7 STORAGE OF MATERIALS**

Materials shall be stored in such a manner as to ensure the preservation of their quality and fitness for the Work. When required by the Construction Manager, materials shall be placed on platforms or other hard, clean surfaces and covered.

Materials shall be stored so as to facilitate inspection. Storage areas shall be suitably fenced if necessary to protect the public or the material.

Locations and arrangements for storage sites for materials and equipment outside the limits of work, shall be selected and maintained by the Contractor at the Contractor's expense. Prior to occupying a storage site on private property, the

# GENERAL CONDITIONS

Contractor shall submit a letter or agreement signed by the private property owner that authorizes the Contractor to occupy the private property. The City shall be specifically exempted in any agreement from any liability incurred from the use of private property for construction purposes. Use of portions of the City's area at the site for materials and equipment storage shall be permitted upon the approval of the Construction Manager.

## **GC 7.8 HAZARDOUS MATERIALS**

The storage and handling of potential pollution-causing and hazardous materials, including but not necessarily limited to: gasoline, oil, and paint shall be in accordance with all local, state, and federal requirements. All hazardous materials shall be stored and handled in accordance with the Material Safety Data Sheets for the products. Material Safety Data Sheets shall be submitted to the Construction Manager prior to the delivery of materials to the Project site. Copies of the Material Safety Data Sheets shall be maintained at the Project Site in a readily accessible location.

## **GC 7.9 SYSTEM TESTING**

The Contractor shall test the facilities as specified in the Technical Specifications. The Contractor shall provide all other necessary facilities for conducting the tests including but not limited to: personnel, power, water, equipment, and chemicals. The Contractor shall provide a minimum of forty-eight (48) hours notice to the Construction Manager of its readiness and intent prior to each test.

## **GC 7.10 COORDINATION/COOPERATION WITH UTILITIES**

Within the construction limits of this Project may be various utility systems including water, reclaimed water, sanitary sewers, storm drains, gas, telephone, cable television, and electric power. The approximate location of known main line utilities, as taken from existing records, is shown on the Drawings. The service connections to these facilities may not be shown on the Drawings, however, the Contractor shall field locate and protect all service connections from damage during the course of the Work. The full costs for locating and protecting such service connections shall be included in the various items of work and no additional compensation shall be allowed. Where underground main utility distribution lines are shown on the plans or marked in the field, the Contractor shall assume that every property parcel is served by service connections for each type of utility. The City and Engineer do not guarantee that all existing utilities and facilities are shown on the Drawings or that they are shown in their actual position. The Contractor shall consider it normal and expected that the elevation and alignment of said utilities may vary from that shown on the Drawings, and also that utilities may be encountered that are not shown on the Drawings. Also consider it normal and expected that utilities will prove to be an impediment to the operations and that use of other than the usual equipment and construction methods in accomplishing the necessary work over, around or under such utility installations may be necessary. Should a discrepancy be found on the Drawings, it shall not be construed to relieve the Contractor from his/her responsibility to protect any such utility or facility.

The City has notified all utility companies, all pipeline owners, or other parties known to be affected by the Project and has endeavored to have all necessary adjustments of their facilities and other appurtenances made as soon as possible to eliminate conflicts within or adjacent to the limits of construction. The Contractor shall be responsible to protect and/or support all utilities which do not have to be relocated, but which do affect the Work. Where the City has made arrangements with utility owners to relocate or adjust their facilities, the City's responsibility for such adjustments are shown on and called out at the specific locations on the plans.

Any delays to the Contractor's operations performing the current critical item(s) of work on the latest favorably reviewed Construction Schedules as a direct result of utility or other facilities not being rearranged as herein provided (other than delays in connection with rearrangements made to facilitate Contractor's construction operations) will be considered excusable delays within the meaning of GC 3.12.2, Excusable Delays.

It shall be the Contractor's full responsibility to call Underground Service Alert (USA) at (1-800-227-2600) not less than two (2) working days, but not more than fourteen (14) calendar days, prior to performing any excavation, for location mark-out of any underground utilities and obtaining an inquiry identification number. Contractor must comply with all instructions received from USA.

Note: Per NRS 455.082, the approximate location of a subsurface installation marked in response to a notice to USA means a strip of land not more than twenty-four (24) inches on either side of the exterior surface of a subsurface installation.

If a private underground utility such as gas, electric, telephone or cable television facility must be located or adjusted for construction operations and its location differs by more than twenty-four (24) inches on either side of the exterior surface of the subsurface facility from that shown on the plans or marked in the field, the City shall reimburse the

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Contractor, as extra work, for the difference between the costs incurred in finding the actual location of the facility and the costs of finding the reputed location of the facility.

Contractor shall pothole all indicated, shown, or marked utilities and points of connection to verify their exact location. The Contractor shall have the proposed Work laid out in the filed by a Nevada Licensed Professional Land Surveyor or the Surveyor's subordinates prior to commencing with the potholing. The Contractor shall then pothole prior to performing any other Work including saw cutting for the work. The Contractor shall obtain data (on a form provided by the Construction Manager) to include type, size, and dimensions, material, location and elevation of the underground utilities, referenced to the Surveyor's lay out stakes for each pothole. The Contractor shall provide to the Construction Manager, all data, and shall identify to the Construction Manager any facilities which conflict with the Work on the day the pothole is performed. Carson City will not be responsible for any damages, delays or standby time caused by the Contractor's failure to perform potholing prior to commencement of the Work, failure to provide the data or identify the conflicts when specified, or failure to locate services, laterals or points of connections.

Carson City will be responsible for repairs, damages and standby time caused the Contractor due to non-marking, mis-marking or mis-locating, as defined in NRS 455.082, of the City's main line water mains, reclaimed water mains, sanitary sewer main lines and storm drains. Compensation to the Contractor for such repairs, damages or standby time shall be calculated on the basis of GC 6.4.3, Force Account Payment. NOTE: This provision does not apply to service laterals/connections unless the Contractor can show he/she used diligence in trying to locate each service.

The Contractor shall not interrupt the service function or disturb the support of any utility without authority from the utility owner. All valves, switches, manholes, vaults, and meters shall be maintained readily accessible for emergency shutoff or access. In case it should be necessary to move or temporarily maintain the property of any utility, the cost of which is not required to be borne by the owner thereof, the Contractor shall bear all time required and all expenses incidental to the removal or temporary maintenance of such property in a manner satisfactory to the owner thereof. The work necessary to the raising, lowering, or relocating of a utility may be done by the owner of the utility or by the Contractor, at the option of the utility owner. All work shall be in accordance with the utility owner's standards, and shall be at the Contractor's time and expense unless otherwise expressly provided for in the Special Conditions.

The Contractor shall repair or replace all utilities damaged or destroyed due to his/her operations, even in the event such damage or destruction occurs after backfilling or is not discovered until after completion of backfilling. The Contractor shall resolve all crossing and clearance problems with the utility company concerned and the Construction Manager. The right is reserved to the State, County, City, and owners of private utilities and franchises to enter at any time upon any street, alley, right-of-way, or easement for the purpose of making changes in their property made necessary by the Work and for the purpose of maintaining and making repairs to their property.

In cases where water or sewer mains, or service connections thereto, are accidentally broken or, with the prior approval of the Construction Manager, are intentionally cut by the Contractor, they shall be fully repaired to City specifications and returned to service within four (4) hours, or sooner if deemed necessary by the Construction Manager. The Contractor is to make these repairs a priority over other portions of the Work.

At all times allow the Fire Department access to fire hydrants. Do not place materials or other obstructions closer to a fire hydrant than permitted by ordinance, rules, or regulations or within fifteen (15) feet of the fire hydrant in the absence of such ordinances, rules, or regulations.

## **GC 7.11 CONTAMINATED GROUNDWATER and/or SOIL**

Contaminated groundwater and/or soil may exist anywhere within the Project limits. If contaminated groundwater and/or soil are encountered during construction, the Contractor must act in accordance with all applicable Federal, State, and local laws and Nevada Administrative Code 445A.347, which requires the Nevada Department of Environmental Protection be notified within twenty-four (24) hours of the encounter at (775) 687-4670.

## **GC 7.12 DUST CONTROL**

The Contractor is responsible for the control of dust originating from any and all of the Contractor's construction operations either within or outside of the Work Area at all times in accordance with Federal, State and local laws, at the Contractor's expense. In areas where fugitive dust is a nuisance, the Contractor shall, as often as necessary, wet down the area to prevent dusty conditions. This includes weekends and holidays. The Contractor shall contact NDEP to determine if a Ground Disturbance Permit is required.

## **GC 7.13 BY-PASS PUMPING OF SANITARY SEWER**

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The Contractor shall prepare and submit to the Construction Manager a plan for by-pass pumping of sanitary sewers which will provide for adequate size pumps and hoses to carry the flows from one manhole to another. Hoses must be rated for traffic if traffic is allowed on the roadway where the hose is placed. Provide a backup pump, replacement hose sections and a backup power source at the work site prior to commencing any by-pass pumping operations. Contractor must test the by-pass pumping system, including the backup pump, in the presence of the Construction Manager or his/her representative prior to effecting the flow in the existing sanitary sewer to be diverted. Contractor must identify and have available during pumping operations a person capable and qualified to make emergency repairs in case of a failure of any part of the by-pass pumping operation. The Contractor shall ensure that no spillage of raw sewage will occur on or in the ground. The by-pass pumping plan shall also address how an accidental spill of raw sewage would be contained and mitigated.

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## SECTION 8.0 CONTRACT COMPLETION, O&M MANUALS

### **GC 8.1 INTERMEDIATE COMPLETION**

When an intermediate milestone is specified in the Contract Documents, and the Contractor considers that a Work element, section, or division has met the intermediate completion stage requirements, the Contractor shall notify the Construction Manager in writing. Upon receipt of the notification, the Construction Manager and the City will make inspection to determine if the Work element, section or division is sufficiently complete in accordance with the Contract Documents to determine its acceptability for Intermediate Completion and for determination of any other items which do not meet the terms of the Contract so the City can occupy or utilize the Work for its intended use. Upon verification that the Work element, section, or division meets the contractual requirements for Intermediate Completion, the Construction Manager shall prepare a Notice of Intermediate Completion letter for the City's signature. The notice shall establish the date of Intermediate Completion, the responsibilities of the City and Contractor for maintenance, utilities, and damage to the subject Work. If items are found which prevent such use or occupancy, the Construction Manager shall notify the Contractor of such items.

Upon the completion of such corrective work, the Contractor shall so notify the Construction Manager in writing. The Contractor agrees to pay the City's actual costs including, but not limited to, charges for engineering, inspection and administration incurred due to the Contractor's failure to complete the punch list work within the time period specified.

Unless otherwise specified under Special Conditions, no partial acceptance of any portion of the Work will be made and no acceptance other than the final acceptance of the overall completed Project will be made. No review pertaining to specific parts of the Project shall be construed as final acceptance of any part until the overall final acceptance by the City is made. Final payment for completed portions of Work will not be made until final acceptance of the total Work.

### **GC 8.2 SUBSTANTIAL COMPLETION**

When the Contractor considers that all Work required by this Contract including equipment start-up and testing is substantially complete, the Contractor shall notify the Construction Manager in writing. Upon receipt of the notification, the Construction Manager and the City will make inspection to determine if the Work is sufficiently complete in accordance with the Contract Documents to determine its acceptability for Substantial Completion and for determination of any other items which do not meet the terms of the Contract so the City can occupy or utilize the Work for its intended use. If items are found which prevent such use or occupancy, the Construction Manager shall notify the Contractor of such items. Upon verification that the Project is substantially complete, the Construction Manager shall prepare a Notice of Substantial Completion letter for the City's signature. The notice shall establish the date of Substantial Completion and the responsibilities of the City and Contractor for maintenance, utilities, and damage to the Work.

### **GC 8.3 CONSTRUCTION COMPLETION, FINAL INSPECTION, PAYMENT, AND ACCEPTANCE**

When the Contractor considers that all Work including record drawings, operation and maintenance manuals, and cleanup has been completed in accordance with the terms of the Contract, the Contractor shall notify the Construction Manager. Upon notification, the Construction Manager and the City will make the pre-final inspection to determine the actual status of the Work in accordance with the terms of the Contract. If materials, equipment, or workmanship are found which do not meet the terms of the Contract, the Construction Manager shall prepare a final punch list of such items and submit it to the Contractor. Following completion by the Contractor of the corrective work, required by the punch list, the Construction Manager shall notify the City that the Work has been completed in accordance with the Contract. A final inspection will be made to determine the acceptability of the Work. After completion of the Work, but prior to its acceptance by the City, the last partial payment will be made to the Contractor.

After receipt of the last partial payment, but prior to acceptance of the Work by the Carson City Board of Supervisors or Carson City Regional Transportation Commission, the Contractor shall send a letter to the Construction Manager submitting lien releases for all material, or labor for any work covered by this Contract. The letter shall state that acceptance of the final payment described below shall operate as and shall be, a release to the City, the Construction Manager, the Design Consultant, and their duly authorized agents, from all claims and/or liability to the Contract arising by virtue of the Contract related to those amounts. Disputed Contract claims in stated amounts previously filed as provided in GC 6.3.2, Claims, may be specifically excluded by the Contractor from the operation of the release.

Following receipt of all required submittals, the Construction Manager's written statement that construction is complete, and recommendation from the City's representative to accept the Project, the Construction Manager shall prepare an agenda item for the Carson City Board of Supervisor's or Carson City Regional Transportation Commission's acceptance of the completed Work and a Notice of Completion.

# GENERAL CONDITIONS

Following the acceptance by the Carson City Board of Supervisors or the Carson City Regional Transportation Commission of the completed Work embraced in the Contract, the City will cause to be recorded in the office of the County Recorder a Notice of Completion.

Thirty (30) days after recording the Notice of Completion of the Work involved in the Contract, the City will pay the Contractor such sums of money as may be due the Contractor including all sums retained but excluding such sums as have previously been paid the Contractor. This payment will constitute the final payment to the Contractor under this Contract.

## **GC 8.4 OPERATION AND MAINTENANCE MANUALS**

Prior to the delivery and installation of any item of machinery or equipment, the Contractor shall submit one (1) copy of the Operation and Maintenance Manual(s) as required by the Technical Specifications. The manual(s) will be reviewed by the Construction Manager and/or Design Consultant for content and the Construction Manager will advise the Contractor within five (5) working days of receipt if the manual is acceptable for the delivery and installation of the equipment or machinery. No equipment or machinery shall be tested or installed if the general content of the manual is found to be deficient. The final Operation and Maintenance Manuals, three (3) copies, must be submitted and favorably reviewed prior to final acceptance.

## **GC 8.5 EQUIPMENT START-UP**

After all acceptance tests have been completed by the Contractor, but prior to final acceptance, the Contractor shall recheck all equipment for proper alignment and adjustment, check oil levels, relubricate all bearing and wearing points, and assure that all equipment is in proper condition for regular continuous operation. Final start-up of equipment requires forty-eight (48) hours advance notice to the Construction Manager and coordination with the user department of the City. Start-ups shall only occur Monday through Thursday.

## **GC 8.6 FINAL CLEAN UP**

At the completion of the Work and before final inspection, the Contractor shall clean the Work Area, material sites, adjacent property and streets and all grounds occupied by the Contractor in connection with the Work of all rubbish, excess and waste materials, as well as all his/her tools, construction equipment, machinery and temporary facilities. All parts of the Work shall be left in a neat and clean condition. If the Contractor fails to clean up at the completion of the Work, the City may do so and the cost shall be charged to the Contractor.

## **GC 8.7 WARRANTY OF TITLE**

No material, supplies, or equipment for the Work under this Contract shall be purchased subject to any chattel mortgage, security agreement, or under a conditional sale or other agreement by which an interest therein or any part thereof is retained by the seller or supplier. The Contractor warrants clear title to all material, supplies, and equipment installed or incorporated in the Work and agrees upon completion of all work to deliver the premises, together with all improvements and appurtenances constructed or placed thereon by the Contractor, to the City free from any claim, liens, security interest, or charges, and further agrees that neither the Contractor nor any person, firm, or corporation furnishing any materials or labor for any work covered by this Contract shall have any claims, liens, security interests or charges against this Project, provided that this shall not preclude the Contractor from installing metering devices or other equipment of utility companies, the title of which is commonly retained by the utility company. Nothing contained in this Section, however, shall defeat or impair the right of such persons furnishing materials or labor under any bond given by the Contractor for their protection or any right under any law permitting such persons to look to funds due the Contractor in the hands of the City. The provisions of this Section shall be inserted in all subcontracts and material contracts, and notices of its provisions shall be given to all persons furnishing materials for the work when no formal contract is entered into for such materials.

## **GC 8.8 RECORD DRAWINGS**

The Contractor shall keep at the Site a copy of the Contract drawings and specifications, including addenda and change orders, to which the Design Consultant, Construction Manager, and City shall have access at all times.

The Contractor shall maintain one (1) set of specifications and full size drawing prints and mark thereon in red any and all deviations from plan dimensions, elevations, or orientations, and all changes from addenda, change orders, and clarifications. Marked prints shall be updated at least weekly and shall be available to the City for review. Prior to Final Acceptance by the City, the Contractor shall submit the record Drawings to the Construction Manager in the manner and format specified in the Special Conditions.

## **GC 8.9 WARRANTY**

# GENERAL CONDITIONS

The Contractor hereby agrees to make, at its own expense, all repairs or removals and replacements necessitated by defects in materials or workmanship supplied under the terms of this Contract, and to pay for any damage to other works resulting from repairs or removals and replacements of such defects which become evident within one (1) year after the date of Substantial Completion of the Project by Carson City or within such longer period of time as may be prescribed by law or by the terms of any applicable technical specification. The Contractor further assumes responsibility for a similar guarantee for all work and materials provided by subcontractors or manufacturers of packaged equipment components. The Contractor also agrees to indemnify, defend, and hold the City, and its officers, agents, employees, and volunteers harmless from liability of any kind arising from damage due to said defects.

The Contractor shall execute and submit a completed Warranty Form in the format as appended to this section for the Work. The Warranty Form shall be submitted prior to the final acceptance of the Project or within five (5) days of the occupancy or use of a portion of the Work, whichever is applicable.

The Contractor shall, upon the receipt of written notice from the City, promptly make all repairs or removals and replacements arising out of defective materials, workmanship, or equipment. The City is hereby authorized to make such repairs or removals and replacements, and the Contractor and its Surety shall be liable for the cost thereof, if five (5) days after receipt of such written notice to the Contractor, the Contractor has failed to make or undertake the repairs or removals and replacements with due diligence. In case of emergency, where in the opinion of the City delay could cause serious loss or damage, repairs or removals and replacements may be made without notice being sent to the Contractor, and the expense in connection therewith shall be charged to the Contractor, and its Surety shall be liable for the cost thereof. Such action by the City shall not relieve the Contractor of the guarantees required by this Section or elsewhere in the Contract Documents.

This Section does not in any way limit the warranty on any items for which a longer warranty is specified or on any items for which a manufacturer or supplier gives a warranty for a longer period. The Contractor agrees to act as a co-guarantor with such manufacturer or supplier and shall furnish the City all appropriate guarantee or warranty certificates upon completion of the Work. No warranty period, whether provided for in this Section or elsewhere, shall in any way limit the liability of the Contractor or his/her sureties or insurers under the indemnity or insurance provisions of these General Conditions.

Prior to the expiration of the Warranty period, the City reserves the right to hold a meeting with the Contractor. The purpose of the meeting would be to review warranties, bonds, and maintenance requirements and determine required repair or replacement requirements of defective items.

For the purpose of this paragraph, acceptance of the Work or a portion of the Work by the City, shall not extinguish any covenant or agreement on the part of the Contractor to be performed or fulfilled under this Contract which has not, in fact, been performed or fulfilled at the time of such acceptance. All covenants and agreements shall continue to be binding on the Contractor until they have been fulfilled.

# GENERAL CONDITIONS

## WARRANTY FORM

Warranty For

\_\_\_\_\_ (Project/Component)

\_\_\_\_\_ (Location)

We hereby guarantee the \_\_\_\_\_ (Project/Component) that we have constructed for a period of one (1) year from \_\_\_\_\_ (Date) the date of Substantial Completion of the Work set by Carson City.

The following items are excluded from the provisions of this warranty:

We agree that if any of the material or equipment should fail due to any reason other than improper maintenance or improper operation, if any pipe or appurtenances should develop leakage, or if any settlement of fill or backfill occurs, or should any portion of the Work fail to fulfill any of the requirements of the Contract Documents, we will, within five (5) days of receipt of written notice of such defects, commence to repair or replace the same together with any other work which may be damaged or displaced in so doing.

In the event of our failure to comply with the above mentioned conditions within a reasonable time after being notified, or should the urgency of the case require repairs or replacements to be made before we can be notified or respond to notification, we do hereby authorize Carson City, to proceed to have the defect repaired and made good at our expense, and we will pay the cost therefor upon demand.

The warranty provided herein shall not be in lieu of, but shall be in addition to any warranties or other obligations otherwise imposed by the Contract Documents and by law.

Contractor:

Signed:

Title:

Date:

# GENERAL CONDITIONS

## SECTION 9.0 PREVAILING WAGE

### GC 9.1 PREVAILING WAGE RATES

- A. The Contractor and subcontractors shall be bound by and comply with all federal, state and local laws with regard to minimum wages, overtime work, hiring and discrimination, including Chapter 338 of the NRS, which is entitled, "Public Works Projects." The Contractor shall ensure that all employees on the work site are paid in accordance with the CURRENT PREVAILING WAGE RATES AS APPROVED BY THE STATE LABOR COMMISSIONER, whenever the actual value of the Contract totals One Hundred Thousand Dollars (\$100,000) or more, or when required by the Special Conditions. A copy of the rates are attached hereto and included herein. If a Change Order causes a Contract to exceed One Hundred Thousand Dollars (\$100,000), the State Labor Commissioner may audit the entire Contract period.

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.

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

- B. 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.
- C. Pursuant to NRS 338.060 and 338.070, the Contractor hereby agrees to forfeit, as a penalty to the City, 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/her, or is not reported to the City as required by NRS 338.070.
- D. The Contractor and each subcontractor shall keep or cause to be kept an accurate record showing the name, the occupation and the actual per diem, wages and benefits paid to each worker employed by him/her in connection with the public Work. The General Contractor shall collect the wage reports from the Sub-Contractors and ensure the receipt of a certified copy of each weekly payroll for submission to the City as one complete package.
- E. The record must be open at all reasonable hours to the inspection of the City, and its officers and agents. A copy of the record for each calendar week for the General Contractor and all Sub-Contractors must be sent to the City by the General Contractor no later than one (1) week after the end of the week. The copy must be open to public inspection as provided in NRS 239.010.
- F. The Contractor and all subcontractors hereby agree not to hinder on-site interviews of the Contractor's or subcontractor's workers by the Construction Manager or his/her representative to verify that the workers are being paid the prevailing wage rates.
- G. It is unlawful for any Contractor in connection with the performance of work under a contract with the state, or any of its political subdivisions, when payment of the Contract Price, or any part of such payment, is to be made from public funds, to refuse to employ or to discharge from employment any person because of his/her race, color, creed, national origin, sex, sexual preference or age, or to discriminate against a person with respect to hire, tenure, advancement, compensation or other terms, conditions or privileges of employment because of his/her race, creed, color, national origin, sex, sexual preference or age. The Contractor agrees to insert this provision in all subcontracts hereunder except subcontracts for standard commercial supplies or raw materials.

### GC 9.2 NO EXTRA COMPENSATION

All work necessary to be performed after regular working hours, on Sundays or Legal Holidays, shall be performed without additional expense to the City. In case of extra work under the provisions of GC 6.4, MODIFICATION PROCEDURES, no additional payment will be made to the Contractor because of the payment by him/her of overtime

# **GENERAL CONDITIONS**

wage rates for such work unless the use of overtime work in connection with such extra work is specifically ordered in writing by the City.

**END OF GENERAL CONDITIONS**

# SPECIAL CONDITIONS

CIP #: 3.0731  
Federal Project No.: SP-000M (146)  
NDOT I.D. No.: 73539  
Carson City Gateway Signage Project

Contract No. 1011-242

These Special Conditions amend or supplement the standard Contract Award and General Conditions of the Contract and add other Special Provisions to the contract document as indicated below, and amend or supplement the Technical Specifications. All provisions of the Contract which are not so amended or supplemented remain in full force and effect.

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- 02920 – Revegetation
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## **SPECIAL CONDITIONS**

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# **SPECIAL CONDITIONS**

## **AMENDMENTS TO CONTRACT AWARD**

### **CA.12 ADDITIONAL LIQUIDATED DAMAGES**

Liquidated damages shall be \$250.00 per calendar day for failure to perform and complete all of the Work of this contract within the time specified under GC 3.5, Time of Completion and GC 3.13, Liquidated Damages.

## **AMENDMENTS TO THE GENERAL CONDITIONS**

The following provisions amend or supplement the General Conditions, of these bid documents. All provisions of the Contract which are not so amended or supplemented shall remain in full force and effect.

### **SECTION 2.0**

#### **CONTRACT ADMINISTRATION AND RESPONSIBILITIES:**

#### **OWNER'S REPRESENTATIVE, CONSTRUCTION MANAGER, DESIGN CONSULTANT AND CONTRACTOR**

At GC 2.6.8, Permits, add the following:

The Contractor shall obtain from the City a no cost building permit for the construction improvements.

The Contractor shall obtain Temporary NDOT Encroachment Permits for any traffic control signs placed within NDOT rights-of-way.

The Contractor's shall comply with the NDOT Right-of-Way Occupancy Permit for all construction activities per SP 4.

The Contractor shall obtain a NDEP Groundwater Discharge Permit prior to pumping groundwater.

The Contractor shall submit copies of all required Permits to the Construction Manager prior to proceeding with the Work covered by the respective Permits. If copies of all required Permits are not submitted to the Construction Manager prior to proceeding with the Work covered by the respective Permits, the Construction Manager may suspend the Work on the entire job without any additional costs to the City until the copies are received.

At GC 2.6.10 Surveys, Lines and Grades, add the following:

The Contractor shall be responsible for directing the Project Surveyor to conduct necessary post construction surveys to obtain the necessary information identified in the NDOT Right-Of-Way Occupancy Permit.

# SPECIAL CONDITIONS

## SECTION 3.0 PROGRESS OF WORK, MEETINGS, SCHEDULES

At GC 3.5 Time of Completion, add the following:

The successful Bidder, upon becoming the Contractor after having entered into a Contract with the City, shall commence the Work to be performed under the Contract on the date set by the City in the written Notices to Proceed, continuing the Work in accordance with the approved schedule and shall complete the entire Work within **122** calendar days (**4 months**) from the date of the Notice to Proceed. All milestones completion dates are subject to liquidated damages as indicated in GC 3.13 in the Special Conditions.

Per GC 3.11, Construction Schedules, a Type "A" Construction Schedule is required.

At GC 3.13, Liquidated Damages, add the following:

In case of failure on the part of the Contractor to complete the Work on any Stage of the Work within the time(s) specified in the Contract, or within such additional time(s) as may be granted by formal action of the City, or the Contractor fails to persecute the Work or any separable part thereof, with such diligence as will ensure its completion within the time(s) specified in the Contract or any extensions thereof, the Contractor shall pay to the City, as liquidated damages, the sum of Two Hundred and Fifty Dollars (\$250.00) for each calendar day for delay until such reasonable time as may be required for final completion of the Work, together with any increased costs incurred by the City in completing the Work.

Time stated for completion shall include the final cleanup and demobilization except as otherwise provided in the Special Conditions.

The signing of the proposal by the Bidder shall be prima facie evidence that the Contractor agrees that the amount of liquidated damages is fair and reasonable.

## SECTION 4.0 SHOP DRAWINGS AND QUALITY CONTROL/INSPECTIONS

### GC 4.1.1 Required Submittals

The following items, (including but not limited to) are required submittals:

#### General

- Construction Schedule (GC 3.11.2A.)
- Schedule of Values (SP 2.0)
- Permits (GC 2.6.8)
- Safety Program (GC 2.6.12.B)
- Traffic Control Plans (GC 7.4.2)
- Haul Routes (GC 7.4.1)
- Disposal Plan, Permits and Permissions (GC 7.3.8)
- Certified Payroll Reports, Weekly (GC 5.1)
- Record Drawings (GC 8.8.1)
- Warranties (GC 8.9)
- Testing Reports for Structural Earthwork
- Submittals for Cast-in-Place Concrete and Accessories
- Submittals for Revegetation Work
- Precast Concrete Shop Drawings and Color/Finish Samples

# **SPECIAL CONDITIONS**

Submittals for Concrete Unit Masonry  
Manufacturer's Data and Shop Drawings for Metal Fabrications  
Product Information and Submittals for Solar Electrical System and Lighting (See Section 16 of the Technical Specifications)  
Final Art for Sign Face  
Stamped, Engineered Shop Drawings for Gateway Sign Face

## Materials

Geotextile Fabrics  
Stone Veneer Product Information and Samples  
Quarry Locations / Sources for Talus Slope Boulders  
Selected Rock for Talus Slope

## **SECTION 7.0 CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS**

At GC 7.3.8 Disposal of Material, add the following to the end of the 1st paragraph:

When disposing of construction waste material outside the City limits, the Contractor shall contact the appropriate local government departments concerning such codes and permits.

## GC 7.10.2 Utility Company Work

The Project does not include work to be performed by Utility Companies. The Contractor is to coordinate with the relevant Utility Companies in the Project area and shall immediately notify the Carson City Project Manager if work will be required by a Utility Company.

## **SPECIAL PROVISIONS**

### **SP 1.0 - SCOPE OF WORK**

The Carson City Gateway Project consists of construction of three masonry gateway entry signs at three entry points to Carson City. Work includes but is not limited to site preparation; defining the limits of work; erosion and storm water control; traffic control (including traffic control plans if required); clearing and grubbing; minor demolition and removal; grading; subsoil preparation; placing and compacting engineered fill; miscellaneous drainage and erosion control improvements; forming and accessories for structural concrete; placing, curing, and finishing structural concrete; installing gateway sign face; installing stone veneer and precast concrete caps, talus slope treatments and landscape boulders; soil preparation, seeding, and restoration; rock retaining wall; and solar powered electrical systems and lighting improvements.

### **SP 2.0 - SCHEDULE OF VALUES**

#### **SP 2.1 General**

A Schedule of Values shall be submitted to the Construction Manager for approval, for all bid items for which the Contractor intends to submit a payment request when the work included in that bid item is less than 100% complete. The Schedule of Values shall detail the costs for all the items included in the Description of Bid Items and Basis for Payment for the respective bid item.

### **SP 3.0 - DESCRIPTION OF BID ITEMS AND BASIS FOR PAYMENT**

# SPECIAL CONDITIONS

## SP 3.1 General

Payment for each Bid Item shall include the following Work, and shall be full compensation for any necessary Work required to perform the construction operations specified and shall be considered as included in the price bid for the items of Work and no additional compensation will be allowed therefore.

The terms "construct, furnish, install, erect, perform, place, prepare, remove or replace" shall mean that the bid item is complete, in place, ready for use and recommended for payment by the Construction Manager.

All work under this Contract shall conform to the requirements in the "Standard Specifications for Public Works Construction," 2007 Edition including all revisions as adopted by Carson City except as modified by these Special Conditions or Technical Specifications. This document will be referred to as the "City Standard Specifications" within these Specifications.

Work under this Contract shall conform to the requirements of Division II and Division III of the "Standard Specifications for Road and Bridge Construction," 2001 Edition as published by the Nevada Department of Transportation (NDOT) to the extent referenced on the Drawings or in these Specifications. This document will be referred to as the "NDOT Standard Specifications" within these Specifications.

Requirements presented in the Technical Specifications supersede the requirements of the Standard Specifications.

## SP 3.2 - Carson City Gateway Signage Project - Description of Bid Items and Basis for Payment

SP 3.2.1 North Gateway Sign - Base Bid Item 1

SP 3.2.2 East Gateway Sign - Base Bid Item 2

SP 3.2.3 South Gateway Sign - Base Bid Item 3

### Bid Description for North, East, and South Gateway Signs (Base Bid Items 1 through 3)

1. Measurement for this item will be on a lump sum basis.
2. Payment for the North, East, and South Gateway Sign Bid Items will be based on the lump sum price named in the Bid Schedule, which price shall constitute full compensation for, but may not be limited to furnishing and storage of all materials; mobilization/demobilization; traffic control plans and traffic control for improvements being constructed; construction survey and defining the limits of work including existing grade verification, verification of existing improvements, layout/staking of improvements, and re-staking as required; approval of the construction fencing layout and installation of construction fencing; installation temporary gravel construction entrances and all other equipment, materials, and operations necessary for erosion and stormwater control; potholing to verify utilities; site preparation including clearing and grubbing and minor demolition and removal; earthwork including removal and stockpiling native topsoil, excavation, shoring, rough grade scarification, embankment, and subgrade preparation; de-watering; installing boulder retaining walls where required; placing and compacting engineered fill per the geotechnical report, Drawings, and Specifications; miscellaneous drainage improvements; forming and accessories for structural concrete; placing, curing, and finishing structural concrete; development of original art and gateway sign face shop drawings; fabrication, finishing, and installation of the gateway sign face (including setting with mechanical equipment or crane);

# SPECIAL CONDITIONS

installing stone veneer, precast concrete caps and cleaning; application of anti-graffiti coating; installation and backfill of talus slope boulders; installation of the selected rock slope per the plans and specifications and as directed by the Construction Manager; solar powered electrical systems and lighting improvements; placement and finish grading of all stockpiled native topsoil; installation of wattles including excavation of the trench and wood staking; seedbed preparation (scarification), seeding specified revegetation seed mix, seed bed pre-wetting activities, soil amendments, mulch, liquid amendments, tackifier, stronghold fibers, soil binder, and hydromulching; as well as other incidentals, for completion of the work in conformance with the Contract Documents. This item includes all labor, materials, tools, equipment, and incidentals as necessary to complete this item of work.

The Work also includes project close-out, removal of construction fencing, removal of temporary erosion and storm water control improvements where no longer needed (unless directed otherwise by the Construction Manager), and proper disposal of all materials.

## **SP 3.3 Deductive Alternate Bid Items- Description of Bid Items and Basis for Payment**

SP 3.3.1 Manufactured Stone Veneer in Place of Natural Thin Stone Veneer – Deductive Bid Alternate #1

1. Measurement for this item will be on lump sum basis.
2. The “Total Deduct” for the Deductive Bid Alternate #1 shall be a lump sum price deduction named in the Bid Schedule and represents the credit for the difference in price between the Base Bid Condition and Deductive Bid Alternate #1, which price shall constitute full compensation for:

Credit for Base Bid Condition. Provide credit for the furnishing and installing the natural thin stone veneer shown in the Base Bid condition.

Manufactured Stone Veneer. In lieu of the natural thin stone veneer, provide and install manufactured stone veneer which price shall constitute full compensation for, but may not be limited to furnishing and storage of all materials; a pro rata share of general conditions and mobilization; installation of the manufactured stone veneer; and all related work for items indicated on the Drawings and Specifications. This item includes all labor, materials, tools, equipment, and incidentals as necessary to complete this item of work.

## **SP 4.0 - NDOT RIGHT-OF-WAY OCCUPANCY PERMIT**

Carson City has submitted plans for review and made application for an NDOT Permit. Contractor must prepare and submit to NDOT (copy to Construction Manager) Traffic Control plans for construction work or for detours affecting NDOT right-of-way including Highway 395, U.S.50, and Carson Street (U.S. 395). Contractor shall allow at least two (2) weeks for review and approval of Traffic Control plans by NDOT before the planned start of any construction activity affecting NDOT right-of-way.

### **SP 4.1 - Terms and Conditions**

The Contractor shall comply with NDOT's Interim Terms and Conditions Relating to Right-of-Way Occupancy Permits, 2007 Edition, and the Additional Terms and Conditions of the Permit. Failure to comply with the Permit Terms and Conditions may result in temporary revocation of the permit or immediate closure

# SPECIAL CONDITIONS

of the project site by NDOT.

The Contractor shall submit a traffic control plan for acceptance by the NDOT District II Traffic Office prior to the permit being issued and commencement of any work in the NDOT right-of-way. The term "PERMITEE" as used in the conditions of the NDOT Permit shall be interpreted to mean the Contractor.

Carson City has applied for a Right-of-Way Occupancy Permit for this project. The NDOT Permit Additional Terms and Conditions, which are subject to change, are expected to contain the following items:

DISTRICT # 2 PERMIT #XXXXX-X

1. Permittee shall contact the permit office at (775) 834-8330 two (2) working days prior to construction and two (2) working days prior to any lane closures on the State's right-of-way.

## Traffic Control and Safety

2. All traffic control shall conform to the "Manual on Uniform Traffic Control Devices", Chapter 6, and 2010 Nevada Standard Plans. Traffic shall not be impacted more than 10 minutes.

3. All Category 1 & 2 Traffic Control Devices used on NDOT roadways shall be National Cooperative Highway Research Program (NCHRP) Report 350 compliant. The permittee and/or contractor shall have manufacturer's certificates of compliance available at the project site.

4. All traffic control devices are subject to being rated by the Permit Inspector for conformance to the current American Traffic Safety Services Association (ATSSA) publication "Quality Standards for Work Zone Traffic Control Devices". Any device determined by the Inspector to not meet these quality standards shall be replaced with an acceptable device.

5. PERMITEE shall include "UTILITY WORK AHEAD" and or "ROAD WORK AHEAD" signs as a part of their traffic control plan.

6. Any appurtenance installed that represents a hazard to the traffic shall be protected in accordance with the AASHTO Roadside Design Guide and approved by NDOT prior to installation.

7. PERMITEE shall submit a traffic control plan for acceptance by the NDOT District II Traffic Office prior to the permit being issued and commencement of any work in the NDOT right-of-way.

8. PERMITEE shall maintain two-way traffic at all times during construction.

## Construction Practices

9. All work within NDOT's right-of-way shall be in compliance with the Americans with Disabilities Act (ADA).

10. All work within NDOT's right-of-way shall conform to the **State of Nevada Department of Transportation Standard Specifications for Road and Bridge Construction**, 2001 Edition and the **State of Nevada Department of Transportation Standard Plans for Road and Bridge Construction**, 2010 Edition.

11. A complete permit package including NDOT accepted Traffic Control plans shall be available at the job site at all times during construction. All contractors and subcontractors connected with work on this project shall have a complete copy of this permit with NDOT approved plans at the site at all times or the work will be closed down until a copy is made available.

## SPECIAL CONDITIONS

12. PERMITTEE shall submit "As-built" plans to the District Office showing exact location and depth on both plan and profile within thirty (30) days of completion of construction.

13. No work shall be allowed in the NDOT Right of Way from 6:00 am the day before a holiday thru 7:00 pm the day after a holiday unless prior written approval has been given by NDOT.

### Site Maintenance During Construction

14. PERMITTEE shall be responsible for maintaining the integrity of the roadway surface. Dust, dirt, mud, gravel, etc. carried onto the roadway surface shall be cleaned off on a regular basis (at least once a day or as requested by NDOT personnel). Failure to comply may result in the Nevada Department of Transportation having the roadway cleaned and the cost for the clean-up billed to the PERMITTEE.

15. PERMITTEE shall return all highway appurtenances disturbed or destroyed to a condition equal to or better than the original and in accordance with NDOT Standard Plans and Specifications.

16. Dust control and soil stabilizer shall be included in the contract documents.

17. PERMITTEE shall coordinate relocation of disturbed survey monuments with the NDOT Location Division, Dave Hamlin at (775) 888-7256. Monuments shall be replaced by a Nevada Licensed Professional Land Surveyor (PLS), per the special instructions for survey, mapping, or GIS consultants and Nevada Revised Statutes.

18. PERMITTEE shall remove large rocks (4" or larger) unearthed during construction from the surface of the right-of-way area. The rocks shall be disposed by burying in approved locations or use as riprap in approved drainage locations.

19. PERMITTEE shall reinstall signs, object markers, milepost panels, marker posts and guideposts disturbed during construction by the end of the working day.

20. PERMITTEE shall not store equipment, materials or spoils in NDOT right-of-way outside of normal working hours.

### SP 5 - GEOTECHNICAL INVESTIGATION

Geotechnical report titled "**Carson City Gateway Project, Carson City, Nevada, Geotechnical Investigation**" (Dated July 16, 2010) by Geocon Consultants, Inc. and is included as an attachment to the Contract Documents and identified in the Contract Documents Table of Contents.

### SP 6 - CONSTRUCTION REQUIREMENTS:

#### SP 6.1 LIMIT OF CONSTRUCTION

The Contractor is to define the limits of construction for each project area as shown on the Drawings. The limit of construction shall be staked in the field and reviewed for approval during a site walk-through with the Construction Manager. The limits of construction shall be defined with 6' green "T" stakes 10'-0" OC (or tighter where required) and driven into the soil at least 18". Protect each T-stake with a plastic cap. Orange plastic construction fencing shall be secured to each T-stake just below the protective cap.

The Contractor is to limit their activities to the areas shown on the Drawings and as defined by construction fencing in the field. Because the vegetative cover within the highway ROW has taken years to reach its current state of growth, damage to the existing vegetative cover outside the limits of construction is to be restored to original by the Contractor at his own expense or by City personnel, as directed by the Engineer,

## **SPECIAL CONDITIONS**

and the Contractor shall be responsible for reimbursing Carson City for any and all Work required to restore the vegetative cover. This will include, but may not be limited to, identifying the applicable specifications (NDOT's original specifications or the specifications of this Contract as appropriate), re-grading, soil preparation, reseeding with a matching seed mix, erosion control and hydromulching, traffic control, and hand watering through establishment. Repeated damage to areas outside the approved Construction Limits could result in the City issuing a "stop work order" until the Contractor's system for protection is adjusted to the City's satisfaction.

### **SP 6.2 MOCK UPS**

The Contractor shall provide a four square foot mock up (sample panel) of the stone veneer at each sign structure for the Construction Manager and to approve. If the mock up/sample panel is approved, it may remain in place and be incorporated in the final product. If rejected, it is to be rebuilt until an acceptable sample panel is approved.

## **AMENDMENTS TO CONTRACT AWARD**

### **TS 1.0 - TECHNICAL SPECIFICATIONS**

Additional Technical Specification Sections specific to this project follow these Special Conditions.

**END OF SPECIAL CONDITIONS**

## SECTION 02201

### STRUCTURAL EARTHWORK

#### PART 1 - GENERAL

##### 1.1 DESCRIPTION

- A. Provide all site stripping, excavation, fill, backfill, and grading, as specified therein, and as noted on the Drawings.
- B. Related Work: Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

##### 1.2 QUALITY ASSURANCE

- A. Geotechnical Engineer: The Owner will retain and pay the expenses of a Geotechnical Engineer for performing certain functions specified in the Contract Documents. The Geotechnical Engineer shall communicate only with the Owner and the Architect, and with the Contractor as directed by the Architect. The Architect shall relay any appropriate instructions to the Contractor within the provisions of the Contract Documents.
- B. Testing Agency: Local testing laboratory with a minimum of three years experience in testing soil materials. All reports prepared by the Testing Agency shall be signed by a Professional Engineer registered to practice as a Civil Engineer in the state of Nevada.
- C. Testing laboratory shall have the same required qualifications as the Testing Agency but shall be retained by the Owner. Testing laboratory will make field tests as directed of the "in place" materials to assure conformance with Contract Documents.
- D. Source Quality Control: Prior to delivery to site, the Testing Agency shall test all imported soil material for conformance with Contract Documents. Also on site fill materials shall be approved by the Geotechnical Engineer prior to placing.
- E. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the Work of this Section.
- F. Use equipment adequate in size, capacity, and numbers to accomplish the Work of this Section in a timely manner.
- G. In addition to complying with the requirements of governmental agencies having jurisdiction, comply with the directions of the Geotechnical Engineer, as approved by the Architect.
- H. Reference Standards:
  - 1. ASTM - American Society for Testing and Materials.
    - a. D 422 - Particle Size Analysis of Soils.
    - b. D 4318 - Plastic Limit and Plasticity Index of Soils.
    - c. D 1556 - Standard Test Method for Density of Soil in Place by the Sand Cone Method.
    - d. D 1557 - Standard Test Methods for Moisture-Density Relations of Soils Using 10-pound Rammer and 18-inch Drop.
    - e. D 2487 - Classification of Soils for Engineering Purposes.
    - f. D 6938 - Moisture Content of Soil and Soil-aggregate in place by Nuclear Methods.
  - 2. State of Nevada, Standard Specifications for Road and Bridge Construction.

##### 1.3 SUBMITTALS

- A. Test Reports: Submit test reports on proposed imported materials, and compaction test reports on all compacted materials.

##### 1.4 JOB CONDITIONS

- A. Existing Conditions:
  - 1. Soils Data: Soils investigation report prepared by Geocon Consultants, Inc. dated July 16, 2010; Job No. R8675-06-01.
  - a. The records of investigation of soil or subsurface conditions and logs of test borings are made available by the Architect and are a part of the Contract. It is expressly understood and agreed that the Architect assumes no responsibility whatsoever in respect to the sufficiency or accuracy of the interpretations set forth therein and there is no warranty or guaranty, either expressed or implied, that the conditions indicated by such investigations or records are representative of those existing throughout such areas or any part thereof, or that material other than, or in proportions different from those indicated, may not be encountered. In the event that there is a discrepancy

between the requirements of these specifications and/or Drawings with the Soil Report, these specifications and Drawings shall govern over the recommendations found in the Soil Report.

- b. The availability or use of the records of investigations of soil or subsurface conditions and/or logs of test borings:
    - 1) Shall not be construed as a waiver of the Contractor's duty to examine the site of the Work as contemplated and the Contractor is cautioned to make such independent investigations and examinations as he deems necessary to satisfy himself as to the subsurface conditions to be encountered in the performance of the Work.
    - 2) Will not relieve the Contractor from the risk of unanticipated soil or subsurface conditions or from properly fulfilling the terms of the Contract or the Contract Sum.
  2. Information shown on the Drawings regarding existing site conditions is believed to be correct, but it is not guaranteed. Contractors shall visit the site for necessary information and data regarding present ground levels, ground water level, conditions of property, locations and size of obstructions, and access, etc.
  3. There may be underground utilities, and other previous improvements throughout the building site. These known utilities and improvements are shown on the Civil drawings. Where existing utilities are encountered which are not shown on the Drawings or evident from a site inspection, contact the Architect immediately for instructions. If such lines are inadvertently broken through no fault of the Contractor's operation, they shall be repaired by the Contractor, and an adjustment will be made in payment by the Owner. Breakage of lines shown on the Drawings or evident by a site inspection will be repaired by the Contractor at no increase in Contract Sum.
- B. Protection:
1. Provide, and maintain all barricades, shoring, bracing, etc., as required by federal and State codes. Contractor shall assume all responsibility for damage to utilities, streets, etc., that may be caused by this Work.
  2. Maintain temporary drainage routes during construction so that rainfall or snow-melt will drain from site and not accumulate or pond.
- C. Sequencing, Scheduling and Coordination: The Contractor may schedule and sequence his operations as he desires to optimize the Work of this SECTION.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. For structural fill and backfill use imported or approved on-site materials which are non-expansive conforming to the following: Granular soil, free of organic material and debris and free of clods, lumps and rocks larger than 4-inch diameter. Material shall be reasonably well graded with greater than 30-percent passing a No. 200 sieve, 35 to 100-percent passing a No. 4 sieve, and 80 to 100-percent passing a 3/4" sieve, liquid limit – 35 maximum, plastic index – 15 maximum. All material shall be approved by the Geotechnical Engineer prior to delivery and use.
- B. Site non-structural fill may be any on site materials free of debris and rocks larger than 4-inch diameter or imported materials as specified in "A" above.
- C. Cobble Rock: Provide clean, 8" to 16" cobble rock fill. Cobble Rock materials shall be approved by the Geotechnical Engineer prior to delivery and use.
- D. Aggregate Base for use as a leveling course and/or base under footings: Comply with Nevada Highway Department Type 2, Class B, Aggregate Base.
- E. Filter Fabric Membrane: A filter fabric membrane shall be placed over the top of any Cobble Rock engineered pads. This membrane shall be Mirafi N- Series, "160N", 6 oz., nonwoven geotextile, or approved equal.
- F. All stemwalls, etc. shall be backfilled using native or imported, non-expansive, free-draining gravelly sand, decomposed granite, drainrock, or other similar materials all of which shall be tested and approved by the soils engineer prior to delivery to the site and placement.
- G. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Architect.

## PART 3 - EXECUTION

### 3.1 SURFACE CONDITIONS

- A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

### 3.2 PREPARATION

- A. Lay out the monument sign and all site work in conformance with Contract Documents. Establish necessary benchmarks. Protect them and existing benchmarks shown on the Site Plan, until completion of the Work.

### 3.3 PERFORMANCE

- A. Perform no earthwork during inclement weather, or when excessive moisture is present in the fill material.
- B. Should rainfall or snow-melt occur following footing excavation and prior to pouring footing, dry the excavation thoroughly and re-compact the soils below the footing prior to placing footing.
- C. Use no frozen fill. Place no fill on frozen ground.
- D. Remove and replace in-place fills which are frozen prior to the placement of any additional fill.
- E. When rains or snow-melt interrupt fill operations, inspect the surface before more fill is placed to assure that detrimental conditions do not exist.
- F. Clearing and Grubbing: The areas to receive compacted fill for support of foundations, shall be stripped of all debris, fill soils, crop growth, vegetation, surface trash, roots larger than 2 inches in diameter, and incidental topsoils as determined by the Geotechnical Engineer. Also any existing debris and former construction shall be completely removed from the site.
- G. Excavation:
  - 1. Excavate as necessary to obtain required subgrade elevations. Also overexcavate the existing soils a minimum of 1'-0" below existing finish grade and to allow placement of a minimum of 1'-0" of structural fill beneath all footings. This overexcavation shall extend a minimum of 2'-0" beyond all edges of footings. The depth of these excavations shall be verified and approved by the Geotechnical Engineer prior to placing any structural fill.
  - 2. Excavate as necessary to allow room for placement and removal of foundation formwork.
  - 3. Form all footings with wood, metal, or earth forms as specified in SECTION 03100, "CONCRETE FORMWORK."
  - 4. Any gypsum deposits exposed by overexcavation shall be entirely removed.
- H. Compaction of Exposed Soils: The soils exposed by excavations, which are to receive compacted fill or footings, shall be scarified to a depth of 8", watered or dried as necessary to obtain the proper moisture content as directed by the Geotechnical Engineer, and compacted to at least 95-percent of maximum dry density. If, in the opinion of the Geotechnical Engineer, the existing soils at the bottom of the footing excavations are at 95-percent of maximum dry density or above, then these soils may not require scarification and recompaction, as determined by the Geotechnical Engineer.
- I. Fill and Backfill:
  - 1. Fill as required to obtain required subgrades.
  - 2. Backfill foundations and stemwalls.
  - 3. Place fill and backfill materials in 8-inch thick maximum loose layers. In general, place in horizontal layers extending uniformly over the area to be filled. Compact each layer as specified prior to placing the subsequent layer.
  - 4. Water or dry fill materials as necessary to obtain the proper moisture content as directed by the Geotechnical Engineer. These soils shall then be compacted to the following minimum densities, based on ASTM D1557 Method A or C.
    - a. Structural fill - at least 95-percent dry density for fills under footings or slabs on grade.
    - b. Non-structural fill on site - 90-percent minimum dry density.
    - c. Eall backfill – 90 percent  $\pm$ 2% dry density.
- J. Filter Fabric Membrane:
  - 1. Where filter fabric membrane is required by plans, place membrane beneath aggregate base, and over the Cobble Rock Engineered Pad.
- K. Aggregate Base:
  - 1. Provide the aggregate base, placed on top of the filter fabric membrane where occurs, and compact to at least 95 percent. The upper 8" of subgrade below this base shall also be compacted to 95 percent relative compaction.
  - 2. Establish finish grade of base at the required elevation with a level uniform surface varying not more than 1/2-inch when measured in any direction with a 10-foot straight edge.
- L. At the site of the North Gateway Sign the elevated engineered pad shall be built using approved Cobble Rock pad construction. The cobble rocks used for this shall be approved by the soils

engineer. These rocks shall be placed uniformly as directed and approved by the soils engineer. This cobble rock pad shall extend a minimum of 4'-0" beyond the edge of the footings, and a minimum of 6'-6" beyond the edge of the footing on the downhill side. The approved filter fabric membrane shall be placed over the cobble rock pad, with a minimum of 8" of Type II aggregate base placed on top.

M. Site Grading:

1. After completion of all excavation, fill and backfill, rake surface to a 4-inch depth to remove all rocks and debris in excess of 2-inches in diameter. Remove this material from the site.
2. Grade all areas including excavated and filled sections and transition areas to obtain a finished surface, reasonably smooth, compacted, and free from irregular surface changes. Leave all ditches, swales, and gutters finished to drain readily.

N. Wall Backfill:

1. All stemwalls, etc. shall be backfilled using the specified materials for these walls. The excavation for these walls shall start two feet past the bottom edge of the wall footing and slope up no steeper than 1-1/2 to 1. All of this area shall be backfilled using the approved backfill material.

3.4 FIELD QUALITY CONTROL

- A. Soil Compaction Test: The Owner will pay the testing Laboratory for the first compaction test at any test location. All retests required because fill materials were not compacted to the required density shall be paid for by the Contractor.
- B. The Geotechnical Engineer shall review all sitework and footing excavations before any concrete is cast, and submit a letter of compliance to the Architect. The Geotechnical Engineer shall review all backfill materials prior to placement and observe backfill operations. A letter of compliance shall be submitted to the Architect stating that fills have been constructed per the requirements of these Specifications.
- C. Provide at least the following tests to the approval of the Geotechnical Engineer:
  1. In each compacted fill layer, one (1) field density test for every 400 sq. ft. of overlaying area, but not less than three (3) tests.
  - D. If, in the Geotechnical Engineer's opinion, based on reports of the testing laboratory, subgrade or fills have been placed below specified density, provide additional compacting and testing.

3.5 MAINTENANCE

- A. Protection of newly graded areas:
  1. Protect newly graded areas from traffic and erosion, and keep free from trash and weeds.
  2. Repair and reestablish grades in settled, eroded, and rutted areas to the specified tolerances.
- B. Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify the surface, reshape, and compact to the required density prior to further construction.

END OF SECTION

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SECTION 02370

REVEGETATION

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Furnish and install seeding and mulch treatments as shown on the Drawings. Areas to be reseeded include all disturbed areas associated with sign installation including access corridors, staging areas, and graded areas outside the cobble slopes.

1.2 SUBMITTALS

- A. Submit name of installer and seed supplier for approval by the Construction Manager.
- B. Submit Certification that sufficient quantity of seed as specified below is available and scheduled for delivery at least two weeks prior to seeding.
- C. At the time of seeding, provide the Construction Manager a written statement or site demonstration to verify that the seeding broadcast equipment has been calibrated to the specified application rates.

PART 2 - PRODUCTS

2.1 SEED

- A. Seed shall be clean new crop seed, purchased pre-mixed on a *Pure Live Seed* basis as shown in Table 1 for the North Gateway and South Gateway sites and as shown in Table 2 for the East Gateway Site.

**Table 1. Seed mixture for the North Gateway and South Gateway sites.**

Scientific Name Common Name	Pure Live Seed (PLS) Pounds Per Acre	Percent of Seedmix
<i>Agropyron fragile</i> Siberian wheatgrass	4.0	19
<i>Artemisia tridentata vaseyana</i> Mountain big sagebrush	0.25	20
<i>Cleome serrulata</i> Beeplant	3.00	6
<i>Elymus elymoides</i> Bottlebrush squirreltail	3.00	17
<i>Eriogonum umbellatum</i> Sulfurflower buckwheat	1.00	6
<i>Grayia spinosa</i> Spiny hopsage	1.00	8
<i>Lupinus argenteus</i> Silverleaf lupine	5.00	3
<i>Penstemon palmeri</i> Palmer penstemon	0.25	5
<i>Poa secunda</i> ssp. sandbergii Sandberg bluegrass	0.50	14
<i>Purshia tridentata</i> Bitterbrush	8.00	4
<b>Total PLS Pounds Per Acre</b>	<b>26.0</b>	

**Table 2. Seed mixture for the East Gateway site.**

Scientific Name Common Name	Pure Live Seed (PLS) Pounds Per Acre	Percent of Seedmix
<i>Achnatherum hymenoides</i>	3.0	13

Indian ricegrass		
<i>Achnatherum speciosum</i> Desert needlegrass	3.0	17
<i>Agropyron fragile</i> Siberian wheatgrass	4.0	21
<i>Elymus elymoides</i> Bottlebrush squirreltail	3.0	18
<i>Hesperostipa comata</i> Needleandthread	3.0	11
<i>Lupinus argenteus</i> Silverleaf lupine	8.0	5
<i>Poa secunda</i> ssp. sandbergii Sandberg bluegrass	0.5	15
<b>Total PLS Pounds Per Acre</b>	<b>24.5</b>	

## 2.2 HYDROMULCH MATERIAL MATERIALS

- A. The hydromulch shall consist of 100 percent wood fiber, pre-blended with high viscosity organic guar-gum tackifier, such as manufactured under the trade name 'CONWED FIBERS 2000.' The hydromulch slurry shall be mixed as per manufacturer's recommendation.
- B. Hydromulch shall contain a temporary green dye to aid in metering and assuring a uniform application.
- C. The dried film permeability shall allow exchange of air and moisture, have an effective life of at least one year, and shall not re-emulsify when cured.

## PART 3 - EXECUTION

### 3.1 INSPECTION

- A. The Contractor shall notify the Construction Manager not less than 48 hours in advance of any seeding, and shall not begin seeding until the prepared treatment areas have been approved.

### 3.2 SEEDBED PREPARATION

- A. When the soil, is too compacted for the proper placement of seed at a depth of 0.25 to 0.50 inches, areas to be seeded and mulched shall be scarified or disked parallel to the slope contour to a minimum depth of four to six inches in preparation for seeding. Disking shall not occur more than five days prior to seeding.

### 3.3 BROADCAST SEEDING

- A. All areas disturbed during construction shall be seeded immediately upon completion of final grading, or according to a schedule approved by the Construction Manager based upon weather considerations.
- B. Seed shall be delivered to the site in original unopened containers bearing the dealer's guaranteed analysis and germination percentage, and shall meet the freedom from noxious weeds requirements as defined by the Nevada Department of Agriculture. No substitutions in the seed mixtures will be accepted without written approval from the Construction Manager.
- C. Seed labels shall be removed from the seed sacks by the Construction Manager at the time of seeding. Seed labels will include documentation for each type of seed certifying that a recognized laboratory tested the seed within 12 months of the date of delivery. Certification shall include the following:
  - 1. Name and address of testing laboratory.
  - 2. Date of test.
  - 3. Seed identification - Scientific and Variety names; Lot Number; Net Weight.
  - 4. Test results showing the percentages of purity, germination, and weed content.
  - 5. Certified weed-free seed.
- D. Prepared seedbeds shall be uniformly broadcast seeded with hand operated canister type seeders.
- E. Seeding shall not occur under conditions that would allow the seed to become wind born.
- F. Seed shall not be incorporated and applied with a hydromulch application.
- G. Immediately following broadcasting, seeded areas shall be lightly hand-raked to place the seed at a

depth of 1/4 to 1/2 inch into the soil.

3.4 HYDROMULCH APPLICATION

- A. Mulching shall be done immediately following seeding to prevent seed loss by wind activity, and to provide favorable conditions for plant growth. Under no circumstances shall seeded areas be left overnight without receiving completed mulch treatments.
- B. The hydromulch shall be applied at a rate of 2,000 pounds per acre to form a uniform groundcover.
- C. Hydromulch application shall not occur when temperatures are below 40 degrees.
- D. All surfaces to be treated shall be lightly sprayed with water immediately prior to application.

END OF SECTION

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## SECTION 03300

### CAST-IN-PLACE CONCRETE

#### PART 1 - GENERAL

- 1.2 RELATED DOCUMENTS
  - 1.2.1 Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.
- 1.3 SUMMARY
  - 1.3.1 Section includes cast-in-place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes, for the following:
    - 1.3.1.1 Footings.
    - 1.3.1.2 Foundation walls.
    - 1.3.1.3 Slabs-on-grade.
  - 1.3.2 Related Sections:
    - 1.3.2.1 Section 02201 – Structural Earthwork.
- 1.4 DEFINITIONS
  - 1.4.1 Cementitious Materials: Portland cement alone or in combination with one of the following: fly ash and ground granulated blast-furnace slag; subject to compliance with requirements.
- 1.5 SUBMITTALS
  - 1.5.1 Product Data: For each type of product indicated.
  - 1.5.2 Design Mixtures: For each concrete mixture. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.
  - 1.5.3 Steel Reinforcement Shop Drawings: Placing drawings that detail fabrication, bending, and placement. Include bar sizes, lengths, material, grade, bar schedules, stirrup spacing, bent bar diagrams, bar arrangement, splices and laps, mechanical connections, tie spacing, hoop spacing, and supports for concrete reinforcement.
  - 1.5.4 Construction Joint Layout: Indicate proposed construction joints required to construct the structure.
    - 1.5.4.1 Location of construction joints is subject to approval of the Architect.
  - 1.5.5 Material Certificates: For each of the following, signed by manufacturers:
    - 1.5.5.1 Cementitious materials.
    - 1.5.5.2 Admixtures.
    - 1.5.5.3 Form materials and form-release agents.
    - 1.5.5.4 Steel reinforcement and accessories.
    - 1.5.5.5 Curing compounds.
    - 1.5.5.6 Bonding agents.
    - 1.5.5.7 Repair materials.
  - 1.5.6 Material Test Reports: For the following, from a qualified testing agency, indicating compliance with requirements:
    - 1.5.6.1 Aggregates. Include service record data indicating absence of deleterious expansion of concrete due to alkali aggregate reactivity.
  - 1.5.7 Field quality-control reports.
- 1.6 QUALITY ASSURANCE
  - 1.6.1 Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
    - 1.6.1.1 Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities".
  - 1.6.2 Testing Agency Qualifications: An independent agency, acceptable to authorities having jurisdiction, qualified according to ASTM C 1077 and ASTM E 329 for testing indicated.
    - 1.6.2.1 Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-1 or an equivalent certification program.
    - 1.6.2.2 Personnel performing laboratory tests shall be ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician - Grade I. Testing Agency

laboratory supervisor shall be an ACI-certified Concrete Laboratory Testing Technician - Grade II.

- 1.6.3 Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from single source, and obtain admixtures from single source from single manufacturer.
  - 1.6.4 ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:
    - 1.6.4.1 ACI 301, "Specifications for Structural Concrete," Sections 1 through 5.
    - 1.6.4.2 ACI 117, "Specifications for Tolerances for Concrete Construction and Materials".
  - 1.6.5 Concrete Testing Service: Engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixtures.
- 1.7 DELIVERY, STORAGE, AND HANDLING
- 1.7.1 Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage.

## PART 2 - PRODUCTS

### 2.1 FORM-FACING MATERIALS

- A. Smooth-Formed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.
  - 1.7.1.1 Plywood, metal, or other approved panel materials.
  - 1.7.1.2 Exterior-grade plywood panels, suitable for concrete forms, complying with DOC PS 1, and as follows:
    - A. Medium-density overlay, Class 1 or better; mill-release agent treated and edge sealed.
- B. Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.
- C. Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4 by 3/4 inch, minimum.
- D. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.
  - 1. Formulate form-release agent with rust inhibitor for steel form-facing materials.
- E. Form Ties: Factory-fabricated, removable or snap-off metal or glass-fiber-reinforced plastic form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.
  - 1. Furnish units that will leave no corrodible metal closer than 1 inch to the plane of exposed concrete surface.
  - 2. Furnish ties that, when removed, will leave holes no larger than 1 inch in diameter in concrete surface.
  - 3. Furnish ties with integral water-barrier plates to walls indicated to receive dampproofing or waterproofing.

### 2.2 STEEL REINFORCEMENT

- A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60, deformed.
- B. Low-Alloy-Steel Reinforcing Bars: ASTM A 706/A 706M, deformed.
- C. Plain-Steel Wire: ASTM A 82/A 82M, as drawn.
- D. Deformed-Steel Wire: ASTM A 496/A 496M.
- E. Plain-Steel Welded Wire Reinforcement: ASTM A 185/A 185M, plain, fabricated from as-drawn steel wire into flat sheets.
- F. Deformed-Steel Welded Wire Reinforcement: ASTM A 497/A 497M, flat sheet.

### 2.3 REINFORCEMENT ACCESSORIES

- A. Joint Dowel Bars: ASTM A 615/A 615M, Grade 60, plain-steel bars, cut true to length with ends square and free of burrs.
- B. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire reinforcement in place. Manufacture bar supports from steel wire, plastic, or precast concrete according to CRSI's "Manual of Standard Practice," of greater compressive strength than concrete and as follows:
  - 1. For concrete surfaces exposed to view where legs of wire bar supports contact forms, use CRSI Class 1 plastic-protected steel wire or CRSI Class 2 stainless-steel bar supports.

## 2.4 CONCRETE MATERIALS

- A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout Project:
  - 1. Portland Cement: ASTM C 150, Type II, gray. Supplement with the following:
    - a. Fly Ash: ASTM C 618, Class F.
    - b. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.
- B. Normal-Weight Aggregates: ASTM C 33, coarse aggregate or better, graded. Provide aggregates from a single source.
  - 1. Maximum Coarse-Aggregate Size: 1 inch nominal.
  - 2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.
- C. Water: ASTM C 94/C 94M and potable.

## 2.5 ADMIXTURES

- A. Air-Entraining Admixture: ASTM C 260.
- B. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.
  - 1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
  - 2. Retarding Admixture: ASTM C 494/C 494M, Type B.
  - 3. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
  - 4. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
  - 5. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
  - 6. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.

## 2.6 CURING MATERIALS

- A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.
  - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
    - a. BASF Construction Chemicals - Building Systems; Confilm.
    - b. Dayton Superior Corporation; Sure Film (J-74).
    - c. Edoco by Dayton Superior; BurkeFilm.
    - d. Euclid Chemical Company, an RPM company; Eucobar.
- B. Moisture-Retaining Cover: ASTM C 171, white burlap-polyethylene sheet.
- C. Water: Potable.
- D. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, dissipating.
  - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
    - a. Euclid Chemical Company, an RPM company; Kurez DR VOX.
    - b. Meadows, W. R., Inc.; 1100-CLEAR.
- E. Clear, Solventborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, 30 percent solids.
  - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
    - a. BASF Construction Chemicals - Building Systems; Kure-N-Seal 30.
    - b. Euclid Chemical Company, an RPM company; Super Rez-Seal.
    - c. Meadows, W. R., Inc.; Sealtight CS-309-30.

## 2.7 RELATED MATERIALS

- A. Expansion- and Isolation-Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber.
- B. Bonding Agent: ASTM C 1059/C 1059M, Type II, non-redispersible, acrylic emulsion or styrene butadiene.
- C. Epoxy Bonding Adhesive: ASTM C 881, two-component epoxy resin, capable of humid curing and bonding to damp surfaces, of class suitable for application temperature and of grade to suit requirements, and as follows:
  - 1. Types IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.

## 2.8 REPAIR MATERIALS

- A. Repair Underlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch and that can be feathered at edges to match adjacent floor elevations.
  - 1. Cement Binder: ASTM C 150, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.
  - 2. Primer: Product of underlayment manufacturer recommended for substrate, conditions, and application.
  - 3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by underlayment manufacturer.
  - 4. Compressive Strength: Not less than 4100 psi at 28 days when tested according to ASTM C 109/C 109M.
- B. Repair Overlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/4 inch and that can be filled in over a scarified surface to match adjacent surfaces.
  - 1. Cement Binder: ASTM C 150, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.
  - 2. Primer: Product of topping manufacturer recommended for substrate, conditions, and application.
  - 3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by topping manufacturer.
  - 4. Compressive Strength: Not less than 5000 psi at 28 days when tested according to ASTM C 109/C 109M.

## 2.9 CONCRETE MIXTURES, GENERAL

- A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.
  - 1. Use a qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures.
- B. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement in concrete as follows:
  - 1. Fly Ash: 25 percent.
  - 2. Ground Granulated Blast-Furnace Slag: 25 percent.
- C. Admixtures: Use admixtures according to manufacturer's written instructions.
  - 1. Use water-reducing, high-range water-reducing or plasticizing admixture in concrete, as required, for placement and workability.
  - 2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
  - 3. Use water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs and parking structure slabs, concrete required to be watertight, and concrete with a water-cementitious materials ratio below 0.50.

## 2.10 CONCRETE MIXTURES FOR BUILDING ELEMENTS

- A. Footings in Contact with Soils: Proportion normal-weight concrete mixture as follows:
  - 1. Minimum Compressive Strength: 3000 psi at 28 days.
  - 2. Maximum Water-Cementitious Materials Ratio: 0.50.
  - 3. Slump Limit: 3 inches, plus or minus 1 inch.
- B. Stemwalls and Upper Concrete Walls: Proportion normal weight concrete mixture as follows:
  - 1. Minimum Compressive Strength: 4000 psi at 28 days.
  - 2. Maximum Water-Cementitious Materials Ratio: 0.45.
  - 3. Slump Limit: 3 inches, plus or minus 1 inch.
  - 4. Air Content: 6 percent, plus or minus 1 percent at point of delivery.

## 2.11 FABRICATING REINFORCEMENT

- A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice".

## 2.12 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M, and furnish batch ticket information.
  - 1. When air temperature is between 85° and 90° F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90° F, reduce mixing and delivery time to 60 minutes.

## PART 3 - EXECUTION

### 3.1 FORMWORK

- A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.
- B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.
- C. Limit concrete surface irregularities, designated by ACI 347 as abrupt or gradual, as follows:
  - 1. Class A, 1/8 inch for smooth-formed finished surfaces.
  - 2. Class B, 1/4 inch for rough-formed finished surfaces.
- D. Construct forms tight enough to prevent loss of concrete mortar.
- E. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.
  - 1. Install keyways, reglets, recesses, and the like, for easy removal.
  - 2. Do not use rust-stained steel form-facing material.
- F. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.
- G. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.
- H. Chamfer exterior corners and edges of permanently exposed concrete.
- I. Form openings, chases, offsets, keyways, reglets, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.
- J. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.
- K. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.
- L. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

### 3.2 EMBEDDED ITEMS

- A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

### 3.3 REMOVING AND REUSING FORMS

- A. General: Formwork for sides of beams, walls, columns, and similar parts of the Work that does not support weight of concrete may be removed after cumulatively curing at not less than 60°F for 24 hours after placing concrete. Concrete has to be hard enough to not be damaged by form-removal operations and curing and protection operations need to be maintained.
  - 1. Leave formwork for other structural elements that supports weight of concrete in place until concrete has achieved its 28-day design compressive strength.
  - 2. Remove forms only if shores have been arranged to permit removal of forms without loosening or disturbing shores.
- B. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-release agent.
- C. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by Architect.

### 3.4 STEEL REINFORCEMENT

- A. General: Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that would reduce bond to concrete.
- C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover.
- D. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.

### 3.5 JOINTS

- A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.
- B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.
  - 1. Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints unless otherwise indicated.
  - 2. Form keyed joints as indicated. Embed keys at least 1-1/2 inches into concrete.
  - 3. Locate horizontal joints in walls and columns at the top of footings stemwalls.
  - 4. Space vertical joints in walls as indicated. Locate joints beside piers integral with walls, near corners, and in concealed locations where possible.
  - 5. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
  - 6. Use epoxy-bonding adhesive at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.

### 3.6 CONCRETE PLACEMENT

- A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.
- B. Do not add water to concrete during delivery, at Project site, or during placement unless approved by Architect in writing.
- C. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301.
  - 1. Do not add water to concrete after adding high-range water-reducing admixtures to mixture.
- D. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.
  - 1. Deposit concrete in horizontal layers of depth to not exceed formwork design pressures and in a manner to avoid inclined construction joints.
  - 2. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.
  - 3. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.
- E. Deposit and consolidate concrete in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.
  - 1. Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
  - 2. Maintain reinforcement in position on chairs during concrete placement.
  - 3. Screed slab surfaces with a straightedge and strike off to correct elevations.
  - 4. Slope surfaces uniformly where required.
- F. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
  - 1. When average high and low temperature is expected to fall below 40°F for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.
  - 2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
  - 3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.
- G. Hot-Weather Placement: Comply with ACI 301 and as follows:
  - 1. Maintain concrete temperature below 90° F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
  - 2. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

### 3.7 FINISHING FORMED SURFACES

- A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defects repaired and patched. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
  - 1. Apply to concrete surfaces not exposed to public view.
- B. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defects. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
  - 1. Apply to concrete surfaces exposed to public view, to be covered with a coating or covering material applied directly to concrete.
- C. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces unless otherwise indicated.

### 3.8 MISCELLANEOUS CONCRETE ITEMS

- A. Filling In: Fill in holes and openings left in concrete structures after work of other trades is in place unless otherwise indicated. Mix, place, and cure concrete, as specified, to blend with in-place construction. Provide other miscellaneous concrete filling indicated or required to complete the Work.

### 3.9 CONCRETE PROTECTING AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot-weather protection during curing.
- B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing.
- C. Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing for the remainder of the curing period.
- D. Cure concrete according to ACI 308.1, by one or a combination of the following methods:
  - 1. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

### 3.10 CONCRETE SURFACE REPAIRS

- A. Defective Concrete: Repair and patch defective areas when approved by Architect. Remove and replace concrete that cannot be repaired and patched to Architect's approval. Where concrete edges curl to an extent that they are either functionally or architecturally unacceptable, the Contactor shall be responsible to provide corrective measures to the approval of the Architect. This requirement shall remain in force throughout the warranty period.
- B. Patching Mortar: Mix dry-pack patching mortar, consisting of one part portland cement to two and one-half parts fine aggregate passing a No. 16 sieve, using only enough water for handling and placing.
- C. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.
  - 1. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than 1/2 inch in any dimension to solid concrete. Limit cut depth to 3/4 inch. Make edges of cuts perpendicular to concrete surface. Clean, dampen with water, and brush-coat holes and voids with bonding agent. Fill and compact with patching mortar before bonding agent has dried. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.
  - 2. Repair defects on surfaces exposed to view by blending white portland cement and standard portland cement so that, when dry, patching mortar will match surrounding color. Patch a test

- area at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike off slightly higher than surrounding surface.
3. Repair defects on concealed formed surfaces that affect concrete's durability and structural performance as determined by Architect.
  - D. Perform structural repairs of concrete, subject to Architect's approval, using epoxy adhesive and patching mortar.
  - E. Repair materials and installation not specified above may be used, subject to Architect's approval.

### 3.11 FIELD QUALITY CONTROL

- A. Testing and Inspecting: Owner will engage a special inspector and qualified testing and inspecting agency to perform field tests and inspections and prepare test reports.
- B. Inspections:
  1. Steel reinforcement placement.
  2. Verification of use of required design mixture.
  3. Concrete placement, including conveying and depositing.
  4. Curing procedures and maintenance of curing temperature.
- C. Concrete Tests: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:
  1. Testing Frequency: Obtain at least one composite sample for each 100 cu. yd. or fraction thereof of each concrete mixture placed each day.
  2. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
  3. Air Content: ASTM C 231, pressure method, for normal-weight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
  4. Concrete Temperature: ASTM C 1064/C 1064M; one test hourly when air temperature is 40° F and below and when 80° F and above, and one test for each composite sample.
  5. Compression Test Specimens: ASTM C 31/C 31M.
    - a. Cast and laboratory cure one set of three standard cylinder specimens for each composite sample.
    - b. Cast and field cure one set of three standard cylinder specimens for each composite sample when field cure test specimens are required.
  6. Compressive-Strength Tests: ASTM C 39/C 39M; test one specimen at 7 days, and one at 28 days, and hold the third specimen until needed.
  7. Test results shall be reported in writing to Architect, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.
  8. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Architect but will not be used as sole basis for approval or rejection of concrete.
  9. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42/C 42M or by other methods as directed by Architect.
  10. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
  11. Correct deficiencies in the Work that test reports and inspections indicate do not comply with the Contract Documents.

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## SECTION 03450

### ARCHITECTURAL PRECAST CONCRETE

#### PART 1 GENERAL

##### 1.1 WORK INCLUDED

- A. Furnish and install architectural precast concrete wall caps and copings, and other miscellaneous ornamental units, including any required anchorages.
- B. Provide all anchor bolts, inserts, embedded plates and other hardware or attachments cast into poured-in-place concrete or welded to supporting structural frame. These items will be installed by the Contractor to the layouts shown on the approved shop drawings.
- C. Related work specified elsewhere:
  - 1. Section 03300, Cast-in-Place Concrete.
  - 2. Section 04220, Concrete Unit Masonry.
  - 3. Section 04400, Stone Masonry.
  - 4. Section 05500, Metal Fabrications

##### 1.2 QUALITY ASSURANCE

- A. Reference Standards: Current edition of the following codes and standards shall apply for the design, fabrication and erection of all members, unless otherwise specified:
  - 1. PCI MNL-117, "Manual for Quality Control for Production of Architectural Precast Concrete Products".
  - 2. PCI MNL-120 "Design Handbook on Precast and Prestressed Concrete".
  - 3. PCI MNL-123, "Manual on Design of Connections for Precast and Prestressed Concrete".
  - 4. American Society for Testing and Materials (ASTM):
    - a. A 36 Structural Steel.
    - b. A 185 Welded Steel Wire Fabric for Concrete Reinforcement.
    - c. A 416 Uncoated Seven-Wire Stress-Relieved Strand for Prestressed Concrete.
    - d. A 615 Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
    - e. C 33 Concrete Aggregates.
    - f. C 150 Portland Cement.
    - g. A 386 Zinc Coating (Hot-Dip) on Assembled Steel Products.
  - 5. AWS D12.1, "Recommended Practices for Welding Reinforcing Steel, Metal Inserts and Connections in Reinforced Concrete Construction".
- B. If the provisions of any of the referenced codes or standards are at variance with the requirements of this Section, the more stringent requirements shall govern.
- C. Wall Caps, Column Caps, and Miscellaneous Ornamental Units: Fabricators of the architectural precast work shall have a minimum of five (5) years successful experience and be normally engaged in work of this scope. Additionally, work of this Section shall only be performed by approved subcontractors subscribing to the plant certification program of the Precast Concrete Institute (PCI). The following fabricators are approved:
  - 1. Jensen Precast Concrete of Sparks, 625 Bergin Way, Sparks, NV 89431. Phone: 775-359-6200. Website: [www.jensenprecast.com](http://www.jensenprecast.com).
  - 2. Architectural Precast, Inc., 4630 E Ann Rd, Las Vegas, NV, 89115-1829. Phone: 702-643-7000. Website: [www.apistone.com](http://www.apistone.com).
  - 3. Additional fabricators requesting approval must make application to the Construction Manager at least two (2) weeks before bid opening.
- D. Erection shall be done by qualified masons having experience in the successful installation of architectural precast work.
- E. Welders Qualifications: AWS D1.1 qualified.
- F. Applicable provisions of the codes, or as adopted by any jurisdiction with authority over this Project.

##### 1.3 DESIGN CRITERIA

- A. General: Design precast concrete units in accordance with ACI 318.
- B. Design precast concrete units and component connections to withstand weight of and forces subjected to precast concrete units. Design to provide for anticipated structure movement. Provide adjustment connections to accommodate misalignment of the structure.
- C. Design precast concrete units and connections to accommodate, by means of expansion joints, movement in structure and between cladding elements and structure without permanent distortion,

- damage to components, wracking of joint connections, or breakage of seals.
- D. Design precast concrete accessories to industry standards for dimensions, structural characteristics, etc., unless more stringent requirements are specified in this Section.
- E. Manufacture precast concrete units to ensure similarity of dimension and finish throughout.
- F. Submit to Construction Manager for review, deviation in design or dimensions required.
- G. Permissible Design Deviations: Design deviations will be permitted only after the Construction Manager approval of the manufacturer's proposed design.

#### 1.4 TESTING

- A. Fabricator shall be responsible for regular testing of concrete and maintaining records of all stressing and casting operations as required herein. Manufacturing and testing procedures shall be in general compliance with "PCI-MNL 117 Manual for Quality Control"
- B. Inspection and testing of concrete mix will be performed by independent testing agent as specified. Testing fees shall be paid as specified in the General and Supplementary Conditions.
- C. Provide free access to work and cooperate with appointed firm.
- D. Submit proposed concrete mix design to inspection and testing firm for review prior to commencement of work.
- E. Tests of cement and aggregates may be performed to ensure conformance with requirements stated herein.
- F. Four (4) concrete test cylinders will be taken for every 100 or less cu. yds. of concrete. Compressive tests shall be conducted at seven (7) days; two at 28 days and one (1) shall be held and disposed of at the direction of the Construction Manager.

#### 1.5 SUBMITTALS

- A. Shop Drawings: Submit shop and erection drawings indicating the following:
  - 1. All dimensions.
  - 2. Location of each item in the completed unit.
  - 3. Reinforcing steel details.
  - 4. Concrete strength required at time of lifting and at 28 days.
  - 5. Admixtures to be used.
  - 6. Connection details.
  - 7. Openings and miscellaneous hardware provided for other trades.
  - 8. Type of finish and location.
  - 9. Identifying marks for each member.
  - 10. Lifting hooks and/or handling points.
  - 11. Sequence of erection and any special handling instruction or bracing required.
- B. Samples: The fabricator shall prepare one (1) sample showing the color and textures of precast units for Construction Manager's approval prior to fabrication of the units. Samples shall be at least 12" x 12" x 1" thick.
- C. Miscellaneous: Submit the following when requested by the Engineer prior to manufacturing precast items:
  - 1. Certified mill tests of reinforcing steel proposed for use on this project.
  - 2. Concrete mix design and test results at time of release and at 28 days for mix proposed for use on this project.
- D. Do not proceed with fabrication until shop drawings have been reviewed and approved by the Construction Manager and General Contractor. The General Contractor shall be responsible to check the shop drawings and to ensure their conformance with the overall structure dimensions and to resolve any conflicts between the precast concrete work, his work, and that of other trades prior to his approval of the shop drawings.

#### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Handle precast units in positions consistent with their shape and design. Lift and support only from support points indicated on approved shop drawings.
- B. Store and handle units in manner to prevent excessive stresses. Handle and erect units in a manner ensuring proper safety and alignment. Where temporary bracing is required, it shall be maintained until there are adequate permanent connections. Temporary bracing shall not damage any part of the structure.
- C. Block and laterally brace precast units during transport and while stored onsite. Provide lateral bracing sufficient to prevent bowing and warping.
  - 1. Blocking and Bracing: Clean, non-staining and that will not prevent uniform curing of exposed surfaces.

- D. Provide edges of units with adequate protection to prevent staining, chipping or spalling of concrete. Damaged panels will be rejected.
- E. Repair any damage suffered during storage, transportation and erection to the satisfaction of the Construction Manager. Repairing procedures must result in the same fire rating as the original member. Clean units after erection when required to permit application of finishes.
- F. The precast concrete contractor shall be responsible for the design of all hooks, brackets and handling gear. Where the erection is by others, the method shall be that approved in writing by this contractor.

## PART 2 PRODUCTS

### 2.1 PRECAST CONCRETE WALL CAPS AND COLUMN CAPS

- A. Concrete Materials: All materials used shall comply with the requirements of the codes and standards listed herein, with the following limitations and exceptions:
  - 1. General: Concrete for caps and wall copings and other ornamental units shall be made with sand and stone aggregate.
  - 2. Compressive Strength: 4,000 psi minimum at 28 days.
  - 3. Absorption, Cold Water Test: 5% maximum.
  - 4. Portland Cement: ASTM C150, Type I, white and/or pigmented additives as required to achieve color match.
  - 5. Aggregate: As required to achieve color match and specified strength.
  - 6. Color Additive: To be selected by the Construction Manager from manufacturer's full line of color(s), (Davis Color, Chromix by L. M. Scofield, Lambert Corporation, or approved substitute).
  - 7. Fly Ash: Not permitted.
- B. Finishes: Texture shall be the manufacturer's light acid etch.
  - 1. Color shall be selected from manufacturer's full line of colors. Design intent is to utilize one (1) color of additive for all precast concrete units throughout the project. Color: Light Tan.
- C. Reinforcing: Non-prestressed reinforcement shall consist of reinforcing steel conforming to ASTM A615, Grade 60, and welded wire mesh conforming to ASTM A185, except that anchors welded to embedded plates shall be deformed bars conforming to ASTM A615, Grade 40.
- D. Cast-In Anchors, Plates and Accessories:
  - 1. As required of stainless steel or galvanized steel.
  - 2. Accessories as specified in Section 03250.
- E. Approved Fabricators: As specified in paragraph 1.02.C above.

### 2.2 FORMWORK

- A. Fabricator shall provide formwork for wall caps and column caps and other miscellaneous precast concrete moldings as required to produce materials of the specified quality. Forms may be fabricated of wood, metal or fiberglass, of sufficient strength, rigidity and quality.

### 2.3 FABRICATION

- A. General: Produce precast concrete units of the highest quality from approved concrete mix designs and in accordance with approved shop drawings. Any changes made in the approved mix design during production must be approved in advance by the Construction Manager.
- B. Sizes shall be accurate with proper allowances for fitting to each other and to other structure materials. All surfaces shall be true and straight-edged with a uniform finish on all exposed surfaces.
- C. Architectural Precast Concrete Units Size(s): Fabricate units as shown on the Drawings:
  - 1. Fabricate units of wall caps and copings, belt courses and other items of continuous runs in lengths not to exceed 4'-0", unless otherwise recommended by the manufacturer and approved by the Construction Manager.
- D. Surfaces shall be dense and firm and shall withstand vigorous cleaning and scrubbing with a stiff fiber brush and diluted muriatic acid (5%) cleaning solution.
- E. Provide chamfers at all exposed edges and corners as detailed on the Drawings.
- F. Wall cap and column cap units shall be fabricated to overhang the masonry walls 1" on each side, or as shown on the Drawings for specific applications. Underside of each overhanging edge shall have a formed drip edge.
- G. Units with imperfections in exposed surfaces such as form joint lines, uneven color,

- honeycombing, cracks, etc. will not be acceptable.
- H. Placement of Reinforcement:
1. Provide structural reinforcement as required by the Construction Manager.
  2. Provide minimum reinforcing protection in accordance with ACI 318.
  3. Place one (1) #5 with 2'-0" projection around all sides of openings.
  4. Wire mesh reinforcement must lap on full mesh spacing at side and end laps and be wired together.

## 2.4 DIMENSIONAL TOLERANCES

- A. Dimensions of precast concrete caps and miscellaneous units shall be as shown on the Drawings. Products shall be fabricated and furnished to the following tolerances, in accordance with PCI MNL-116:
1. Length and cross-section:
    - a. Length:  $\pm 3/4"$ , or  $\pm$  per 10 ft. of length, whichever is greater.
    - b. Cross-sectional dimensions: Less than 24",  $\pm 3/8"$ ; 24" to 36",  $\pm 1/2"$ ; over 36",  $\pm 5/8"$ .
    - c. End squareness:  $1/2"$  max.
  2. Horizontal alignment (sweep):
    - a. Length of sweep  
360 or  $3/4"$  minimum
    - b. Max. of 1" gap between 2 adjacent members due to sweep.
  3. Camber, when applicable:
    - a. Camber deviation from design:  $\pm 1/4"$  per 10 ft. length.
    - b. Camber differential between adjacent members, after installation:  $1/4"$  per 10 ft. length,  $3/4"$  max.

## 2.5 FINISHES

- A. General: Architectural precast concrete units shall be fabricated in accordance with PCI-MNL 117.
- B. Facing mixes may not be used. The units must be consistent throughout their thickness, without cold joint separations or aggregate segregation or migration.
- C. Finishes shall be as specified, and actual finishing techniques shall be developed by the fabricator so as to meet the specifications. Appropriate samples shall be supplied for approval prior to any full scale production.
- D. Unformed surfaces shall be screeded to proper levels and finished according to use as follows:
1. Steel Trowel Finish: For all exposed surfaces of caps and other ornamental units. Troweling shall produce a dense surface, uniform in texture and appearance.
  2. Float Finish: For underside surfaces of cap and coping units, unexposed to view. Finish to a smooth, dense, level surface.
- E. No chipped, cracked, warped or otherwise damaged members shall be installed. Before any members are shipped to the job site, notify the Construction Manager and obtain approval for shipment. Damage may be repaired by the manufacturer and will be deemed acceptable if the structural adequacy and aesthetic appearance is not impaired, subject to Construction Manager's approval.
- F. Openings, Holes, and Attachments:
1. Provide all openings and attachments for fixtures or equipment shown on the Drawings.

## PART 3 EXECUTION

### 3.1 INSPECTION AND PREPARATION

- A. Contractor shall examine lines and levels of the structure scheduled to receive architectural precast concrete units prior to starting erection/installation. Report in writing to Construction Manager any condition that may potentially affect proper installation. Do not commence work until such defects are corrected to the satisfaction of the Installer. Beginning work shall be considered acceptance of substrates.
1. Precast concrete contractor shall bring to the attention of the General Contractor any obvious weakness in the work supporting the precast concrete.
  2. Do not erect units unless bearing surfaces are at proper elevations. Notify the Construction Manager of any discrepancies.
- B. Field verify dimensions affecting the work of this Section prior to fabrication.
- C. Store, handle and protect architectural precast concrete on site as specified in paragraph 1.06

above.

1. Units shall be stored on planking and protected to prevent chipping, staining or weathering before installation in the work. Location of storage to be coordinated with Construction Manager.
  2. Units that are stained, chipped or otherwise damaged during storage or installation shall be rejected.
  3. Repair or replace damaged panels, at the sole discretion of the Construction Manager.
  4. Lift or support members at points that are acceptable to the Manufacturer.
- D. Ensure that embedded plates, angles or other attachment devices supplied by other trades are properly located and installed.

### 3.2 COORDINATION BY CONTRACTOR

- A. Access for Precast Concrete Erection Equipment: The General Contractor shall provide and maintain access and operating space for the equipment of the precast concrete contractor. Such access may consist of, but need not be limited to, roads, ramps, and crossings capable of supporting cranes and trucks normal to erection operations of this type. Foundation and utility excavations shall be backfilled where necessary and in accordance with the schedule of erection mutually agreed on between this contractor and the precast concrete erection contractor.
- B. Coordination of Precast Concrete with Other Trades: The General Contractor shall acquaint other trades with the necessity of providing information required to locate openings, inserts and any other appurtenances required by these trades in the architectural precast concrete.
- C. Enclosure of Precast Concrete: General Contractor shall not enclose any of the precast concrete work until the alignment and connections have been approved by the Construction Manager.
- D. Work Supporting Architectural Precast Concrete: Anchor bolts, embedded plates, and angles shall be supplied by the precast concrete contractor and installed by the General Contractor.
  1. Tolerances in placing anchor bolts are:
    - a. Alignments: 3/8".
    - b. Level: 1/2".

### 3.3 ERECTION

- A. General: Installation of architectural precast concrete shall be performed by the Manufacturer or a competent Erection Contractor who has experience in the erection of this type of material. Members shall be lifted by means of suitable lifting devices at points provided by the Manufacturer. Erection procedures, temporary shoring and bracing, and induced loads during erection shall comply with Manufacturer's recommendations.
  1. Installer shall furnish all necessary hoisting equipment.
- B. Alignment: Members shall be properly aligned and leveled as required by the approved erection drawings. Erect units level, plumb, square, and true within allowable tolerances. Variations between adjacent members shall be reasonably leveled out by jacking, loading, or any other feasible method as recommended by the Manufacturer and acceptable to the Construction Manager.
- C. Field Welding: Field welding shall be done by qualified welders, using equipment and materials compatible to the base metal. Methods shall be in accordance with AWS D1.1, D1.4, and D12.1. Securely fasten units in place by welding, locations and lengths as specified in the approved erection drawings.

### 3.4 ANCHORAGE

- A. All units shall be secured to adjacent materials to prevent any movement of the units during setting. Field anchor bolts, stay bolts, ties, braces, rods, etc. required for fixing the units in place shall be furnished by this contractor. Drawings showing recommended anchorage plan shall be furnished by the precast concrete manufacturer.
- B. Securely fasten units in place by welding where required. Touch-up field welds.
- C. Caps: Precast concrete units shall be furnished to the mason for installation

### 3.5 INSTALLATION OF PRECAST CONCRETE WALL CAPS AND COLUMN CAPS

- A. General: Install precast concrete units in accordance with the manufacturer's written instructions and recommendations. Install units in locations shown on the Drawings.
  1. Installation of precast concrete caps shall be by the masonry subcontractor. Refer to Section 04400.
- B. Anchor accessories in place as detailed on the Drawings or recommended by the manufacturer for the particular application.

- C. Thoroughly clean units with clean water before installation.
- D. Install units without damage to shape or finish. Replace or repair damaged units.
- E. Install units level, plumb, square and true within allowable tolerances. Align and maintain uniform horizontal and vertical joints. Lead buttons or soft wood wedges soaked in water may be used to prevent crushing of mortar. Remove wedges when dry and before points.
- F. Improperly set pieces shall be lifted out, cleaned and reset on a new bed of mortar.
- G. Bed and head joints shall be 1/4" thick, full flush joints pointed up as the work proceeds. Fill all anchor holes.
  - 1. Welded connections: Welding of connections for all precast elements shall be done in accordance with AWS D12.1.
- H. Alignment of Adjacent Units: Members shall be properly aligned and leveled. Install units level, plumb, square, and true within allowable tolerances. Variations between adjacent members shall be reasonably leveled out by jacking, loading, or any other feasible method as recommended by the manufacturer.
- I. Installation Tolerances: Maintain the following joint tolerances for adjacent precast concrete units:
  - 1. Face Width of Joint: +/- 3/16".
  - 2. Step in Face: Maximum 1/4".
  - 3. Jog in Alignment of Edges: Maximum 1/4".
- J. Grouting: Grout all joints at bearing locations of units to provide continuous support.

### 3.6 CLEANING

- A. Clean weld marks or other marks, debris or dirt from exposed surfaces of units. Execute a final clean-down and remove dirt and stains that are a direct result of the erection process.
- B. Anti-graffiti Coating: Apply anti-graffiti coating as specified in Section 04400.

### 3.7 DAMAGE AND REPAIR

- A. Minor cracking, chips, and spalls less than 1/4" in any dimension which occur during delivery, handling, storage, and installation will be permitted if they are not detrimental to the final appearance, in the sole opinion of the Construction Manager. No unsightly imperfections or structural defects will be permitted unless satisfactorily repaired.
- B. Contractor shall ensure that due care is exercised by other trades and shall be responsible for any subsequent damage or soiling to the precast concrete units from these sources.
- C. Contractor shall protect the installed precast concrete stair treads for the duration of the construction period. Means and materials shall be at the discretion of the Contractor.

END OF SECTION

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## SECTION 04220

### CONCRETE UNIT MASONRY

#### PART 1 - GENERAL

- 1.8 RELATED DOCUMENTS
  - 1.8.1 Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- 1.9 SUMMARY
  - 1.9.1 Section Includes:
    - 1.9.1.1 Concrete masonry units.
    - 1.9.1.2 Mortar and grout.
    - 1.9.1.3 Steel reinforcing bars.
    - 1.9.1.4 Embedded flashing.
    - 1.9.1.5 Miscellaneous masonry accessories.
  - 1.9.2 Related Sections:
    - 1.9.2.1 Stone masonry work covered under Section 04400.
- 1.10 DEFINITIONS
  - 1.10.1 CMU(s): Concrete masonry unit(s).
  - 1.10.2 Reinforced Masonry: Masonry containing reinforcing steel in grouted cells.
- 1.11 PERFORMANCE REQUIREMENTS
  - 1.11.1 Provide structural unit masonry that develops indicated net-area compressive strengths at 28 days.
- 1.12 SUBMITTALS
  - 1.12.1 Product Data: For each type of product indicated.
  - 1.12.2 Shop Drawings: For the following:
    - 1.12.2.1 Masonry Units: Show sizes, profiles, coursing, and locations of special shapes.
    - 1.12.2.2 Reinforcing Steel: Detail bending and placement of unit masonry reinforcing bars. Comply with ACI 315, "Details and Detailing of Concrete Reinforcement". Show elevations of reinforced walls.
  - 1.12.3 Samples for Initial Selection:
    - 1.12.3.1 Colored mortar.
  - 1.12.4 Samples for Verification: For each type and color of the following:
    - 1.12.4.1 Pigmented and colored-aggregate mortar. Make Samples using same sand and mortar ingredients to be used on Project.
  - 1.12.5 Material Certificates: For each type and size of the following:
    - 1.12.5.1 Masonry units.
      - A. Include material test reports substantiating compliance with requirements.
      - b. For masonry units used in structural masonry, include data and calculations establishing average net-area compressive strength of units.
    - 1.12.5.2 Cementitious materials. Include brand, type, and name of manufacturer.
    - 1.12.5.3 Preblended, dry mortar mixes. Include description of type and proportions of ingredients.
    - 1.12.5.4 Grout mixes. Include description of type and proportions of ingredients.
    - 1.12.5.5 Reinforcing bars.
    - 1.12.5.6 Masonry veneer ties and other metal accessories.
  - 1.12.6 Mix Designs: For each type of mortar and grout. Include description of type and proportions of ingredients.
    - 1.12.6.1 Include test reports for mortar mixes required to comply with property specification. Test according to ASTM C 109/C 109M for compressive strength, ASTM C 1506 for water retention, and ASTM C 91 for air content.
    - 1.12.6.2 Include test reports, according to ASTM C 1019, for grout mixes required to comply with compressive strength requirement.
- 1.13 QUALITY ASSURANCE
  - 1.13.1 Testing Agency Qualifications: Qualified according to ASTM C 1093 for testing indicated.

1.13.2 Masonry Standard: Comply with ACI 530.1/ASCE 6/TMS 602 unless modified by requirements in the Contract Documents.

#### 1.14 DELIVERY, STORAGE, AND HANDLING

1.14.1 Store masonry units on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied. If units become wet, do not install until they are dry.

1.14.2 Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.

1.14.3 Store aggregates where grading and other required characteristics can be maintained and contamination avoided.

1.14.4 Deliver preblended, dry mortar mix in moisture-resistant containers or waterproof sheeting. Store preblended, dry mortar mix on elevated platforms, under cover, and in a dry location or in covered weatherproof sheeting.

1.14.5 Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.

#### 1.15 PROJECT CONDITIONS

1.15.1 Protection of Masonry: During construction, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.

1.15.1.1 Extend cover a minimum of 24 inches down both sides of walls and hold cover securely in place.

1.15.2 Do not apply uniform loads for at least 12 hours and concentrated loads for at least three days after building masonry walls or columns.

1.15.3 Stain Prevention: Prevent grout, mortar, and soil from staining the face of masonry to be left exposed or painted. Immediately remove grout, mortar, and soil that come in contact with such masonry.

1.15.3.1 Protect base of walls from rain-splashed mud and from mortar splatter by spreading coverings on ground and over wall surface.

1.15.3.2 Protect sills, ledges, and projections from mortar droppings.

1.15.3.3 Protect surfaces of sign frames, as well as similar products with painted and integral finishes, from mortar droppings.

1.15.3.4 Turn scaffold boards near the wall on edge at the end of each day to prevent rain from splashing mortar and dirt onto completed masonry.

1.15.4 Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions. Comply with cold-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602, and 2006 IBC.

1.15.4.1 Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40° F and higher and will remain so until masonry has dried, but not less than 7 days after completing cleaning.

1.15.5 Hot-Weather Requirements: Comply with hot-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602, and 2006 IBC.

## PART 2 - PRODUCTS

### 2.1 MASONRY UNITS, GENERAL

A. Defective Units: Referenced masonry unit standards may allow a certain percentage of units to contain chips, cracks, or other defects exceeding limits stated in the standard. Do not use units where such defects will be exposed in the completed Work.

### 2.2 CONCRETE MASONRY UNITS

A. Shapes: Provide shapes indicated and as follows, with exposed surfaces matching exposed faces of adjacent units unless otherwise indicated.

1. Provide special shapes for special conditions. Use open end units wherever possible.

2. Provide square-edged units for outside corners unless otherwise indicated.

B. CMUs: ASTM C 90.

1. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 1900 psi.

2. Density Classification: Lightweight.

3. Size (Width): Manufactured to dimensions 3/8 inch less than nominal dimensions.
4. Exposed Faces: Provide color and texture matching the range represented by Architect's sample.

### 2.3 MORTAR AND GROUT MATERIALS

- A. Portland Cement: ASTM C 150, Type II. Provide natural color or white cement as required to produce mortar color indicated.
- B. Hydrated Lime: ASTM C 207, Type S.
- C. Portland Cement-Lime Mix: Packaged blend of portland cement and hydrated lime containing no other ingredients.
- D. Mortar Pigments: Natural and synthetic iron oxides and chromium oxides, compounded for use in mortar mixes and complying with ASTM C 979. Use only pigments with a record of satisfactory performance in masonry mortar.
- E. Colored Cement Product: Packaged blend made from portland cement and hydrated lime and mortar pigments, all complying with specified requirements, and containing no other ingredients.
  1. Formulate blend as required to produce color indicated or, if not indicated, as selected from manufacturer's standard colors.
  2. Pigments shall not exceed 10 percent of portland cement by weight.
- F. Aggregate for Mortar: ASTM C 144.
  1. For mortar that is exposed to view, use washed aggregate consisting of natural sand or crushed stone.
  2. Colored-Mortar Aggregates: Natural sand or crushed stone of color necessary to produce required mortar color.
- G. Aggregate for Grout: ASTM C 404.
- H. Water: Potable.

### 2.4 REINFORCEMENT

- A. Uncoated Steel Reinforcing Bars: ASTM A 615/A 615M, Grade 60.

### 2.5 MISCELLANEOUS ANCHORS

- A. Anchor Bolts: Headed steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts and, where indicated, flat washers; of dimensions indicated.

### 2.6 EMBEDDED FLASHING MATERIALS

- A. Metal Flashing: Provide metal flashing complying with Division 07 Section "Sheet Metal Flashing and Trim" and as directed by the Architect.
- B. Flexible Flashing: As directed by the Architect.
- C. Solder and Sealants for Sheet Metal Flashings: As directed by the Architect.
- D. Adhesives, Primers, and Seam Tapes for Flashings: Flashing manufacturer's standard products or products recommended by flashing manufacturer for bonding flashing sheets to each other and to substrates.

### 2.7 MASONRY TIES & ACCESSORIES

- A. Galvanized (zinc) Coating: Where specified hereinafter, conform to ASTM A153 Class B-2, 1.50 oz./sq.ft. minimum coating weight.
- B. Veneer ties will be at 16" o.c. each way, maximum and within 12" of all corners, wall ends, and edges of openings.
- C. Furnish all other specialty ties as detailed for special conditions.

### 2.8 MORTAR AND GROUT MIXES

- A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures unless otherwise indicated.
  1. Do not use calcium chloride in mortar or grout.
  2. Use portland cement-lime mortar unless otherwise indicated.
- B. Preblended, Dry Mortar Mix: Furnish dry mortar ingredients in form of a preblended mix. Measure quantities by weight to ensure accurate proportions, and thoroughly blend ingredients before delivering to Project site.
- C. Mortar for Unit Masonry: Comply with ASTM C 270, Proportion Specification. Provide the following type of mortar.
  1. For all masonry, use Type M.

- D. Pigmented Mortar: Use colored cement product or select and proportion pigments with other ingredients to produce color required. Do not add pigments to colored cement products.
  - 1. Pigments shall not exceed 10 percent of portland cement by weight.
  - 2. Mix to match Architect's sample.
  - 3. Application: Use pigmented mortar for exposed mortar joints where directed by the Architect.
- E. Colored-Aggregate Mortar: Produce required mortar color by using colored aggregates and natural color or white cement as necessary to produce required mortar color.
  - 1. Mix to match Architect's sample.
  - 2. Application: Use colored aggregate mortar for exposed mortar joints where directed by the Architect.
- F. Grout for Unit Masonry: Comply with ASTM C 476.
  - 1. Use grout of type indicated or, if not otherwise indicated, of type (fine or coarse) that will comply with Table 1.15.1 in ACI 530.1/ASCE 6/TMS 602 for dimensions of grout spaces and pour height.
  - 2. Proportion grout in accordance with ASTM C 476, Table 1 or paragraph 4.2.2 for specified 28-day compressive strength indicated, but not less than 2500 psi.
  - 3. Provide grout with a slump of 8 to 11 inches as measured according to ASTM C 143/C 143M.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
  - 1. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of work.
  - 2. Verify that foundations are within tolerances specified.
  - 3. Verify that reinforcing dowels are properly placed.
- B. Before installation, examine rough-in and built-in construction to verify actual locations of piping connections.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION, GENERAL

- A. Build chases and recesses to accommodate items specified in this and other Sections.
- B. Leave openings for equipment to be installed before completing masonry. After installing equipment, complete masonry to match the construction immediately adjacent to opening.
- C. Use full-size units without cutting if possible. If cutting is required to provide a continuous pattern or to fit adjoining construction, cut units with motor-driven saws; provide clean, sharp, unchipped edges. Allow units to dry before laying unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.

### 3.3 TOLERANCES

- A. Dimensions and Locations of Elements:
  - 1. For dimensions in cross section or elevation do not vary by more than plus 1/2 inch or minus 1/4 inch.
  - 2. For location of elements in plan do not vary from that indicated by more than plus or minus 1/2 inch.
  - 3. For location of elements in elevation do not vary from that indicated by more than plus or minus 1/4 inch in a story height or 1/2 inch total.
- B. Lines and Levels:
  - 1. For bed joints and top surfaces of bearing walls do not vary from level by more than 1/4 inch in 10 feet.
  - 2. For vertical lines and surfaces do not vary from plumb by more than 1/4 inch in 10 feet.
  - 3. For lines and surfaces do not vary from straight by more than 1/4 inch in 10 feet.
- C. Joints:
  - 1. For bed joints, do not vary from thickness indicated by more than plus or minus 1/8 inch, with a maximum thickness limited to 1/2 inch.
  - 2. For head and collar joints, do not vary from thickness indicated by more than plus 3/8 inch or minus 1/4 inch.

### 3.4 LAYING MASONRY WALLS

- A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint

thicknesses. Avoid using less-than-half-size units, particularly at corners, and, where possible, at other locations. Coordinate with Architect for all masonry layouts and requirements.

- B. Bond Pattern for Masonry: Unless otherwise indicated, lay masonry in running bond; do not use units with less than nominal 8-inch horizontal face dimensions at corners.
- C. Stopping and Resuming Work: Stop work by racking back units in each course from those in course below; do not tooth. When resuming work, clean masonry surfaces that are to receive mortar before laying fresh masonry.
- D. Built-in Work: As construction progresses, build in items specified in this and other Sections. Fill in solidly with masonry around built-in items.
- E. Fill space between frames and masonry solidly with mortar unless otherwise indicated.
- F. Fill cores in hollow CMUs solid with grout.

### 3.5 MORTAR BEDDING AND JOINTING

- A. Lay hollow CMUs as follows:
  - 1. With face shells and head joints fully bedded in mortar.
  - 2. With webs fully bedded in mortar in grouted masonry, including starting course on footings.
- B. Lay solid masonry units with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place. Do not deeply furrow bed joints or slush head joints.
- C. Tool all joints slightly concave when thumbprint hard, using a jointer larger than joint thickness unless otherwise indicated.
- D. Cut joints flush for masonry walls to receive plaster or other direct-applied finishes (other than paint) unless otherwise indicated.

### 3.6 REINFORCED UNIT MASONRY INSTALLATION

- A. Temporary Formwork and Shores: Construct formwork and shores as needed to support reinforced masonry elements during construction.
  - 1. Construct formwork to provide shape, line, and dimensions of completed masonry as indicated. Make forms sufficiently tight to prevent leakage of mortar and grout. Brace, tie, and support forms to maintain position and shape during construction and curing of reinforced masonry.
  - 2. Do not remove forms and shores until reinforced masonry members have hardened sufficiently to carry their own weight and other loads that may be placed on them during construction.
- B. Placing Reinforcement: Comply with requirements in ACI 530.1/ASCE 6/TMS 602.
- C. Grouting: Do not place grout until entire height of masonry to be grouted has attained enough strength to resist grout pressure.
  - 1. Comply with requirements in ACI 530.1/ASCE 6/TMS 602 for cleanouts and for grout placement, including minimum grout space and maximum pour height.
  - 2. Limit height of vertical grout pours to not more than 60 inches.
- D. Install reglets, ties, accessories and nailers for flashing and other related construction where they are shown to be built into masonry.

### 3.7 FIELD QUALITY CONTROL

- A. Testing and Inspecting: Owner will engage special inspectors to perform tests and inspections and prepare reports. Allow inspectors access to work areas, as needed to perform tests and inspections. Retesting of materials that fail to meet specified requirements shall be done at Contractor's expense.
- B. Inspections: Level 1 special inspections according to the "International Building Code".
  - 1. Begin masonry construction only after inspectors have verified proportions of site-prepared mortar.
  - 2. Place grout only after inspectors have verified compliance of grout spaces and of grades, sizes, and locations of reinforcement.
  - 3. Place grout only after inspectors have verified proportions of site-prepared grout.
- C. Testing Prior to Construction: One set of tests.
- D. Testing Frequency: One set of tests for each 5000 sq. ft. of wall area or portion thereof.
- E. Concrete Masonry Unit Test: For each type of unit provided, according to ASTM C 140 for compressive strength.
- F. Mortar Test (Property Specification): For each mix provided, according to ASTM C 780. Test mortar for mortar air content and compressive strength.
- G. Grout Test (Compressive Strength): For each mix provided, according to ASTM C 1019.

### 3.8 REPAIRING, POINTING, AND CLEANING

- A. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise

- damaged or that do not match adjoining units. Install new units to match adjoining units; install in fresh mortar, pointed to eliminate evidence of replacement.
- B. Pointing: During the tooling of joints, enlarge voids and holes, except weep holes, and completely fill with mortar. Point up joints, including corners, openings, and adjacent construction, to provide a neat, uniform appearance. Prepare joints for sealant application, where indicated.
  - C. In-Progress Cleaning: Clean masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.
  - D. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:
    - 1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
    - 2. Test cleaning methods on sample wall panel; leave one-half of panel uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of masonry.
    - 3. Protect adjacent stone and nonmasonry surfaces from contact with cleaner by covering them with liquid strippable masking agent or polyethylene film and waterproof masking tape.
    - 4. Wet wall surfaces with water before applying cleaners; remove cleaners promptly by rinsing surfaces thoroughly with clear water.
    - 5. Clean concrete masonry by cleaning method indicated in NCMA TEK 8-2A applicable to type of stain on exposed surfaces.

### 3.9 MASONRY WASTE DISPOSAL

- A. Salvageable Materials: Unless otherwise indicated, excess masonry materials are Contractor's property. At completion of unit masonry work, remove from Project site.
- B. Excess Masonry Waste: Remove excess masonry waste and legally dispose of off Owner's property.

END OF SECTION

## SECTION 04400

### STONE MASONRY

#### PART 1 - GENERAL

##### 1.1 WORK INCLUDED

- B. Furnish and install stone veneer as shown on the Drawings. This work consists of furnishing and placing grouted natural thin stone veneer in accordance with these Specifications and in conformity with the lines, grades, and dimensions as shown on the Drawings.
- C. Related work specified elsewhere:
  - 5. Section 03300, Cast-in-Place Concrete
  - 6. Section 03450, Architectural Precast Concrete
  - 7. Section 05500, Metal Fabrications

##### 1.2 QUALITY ASSURANCE

- A. Manufacturer shall have a minimum of five (5) yeas of successful experience in the manufacturer of natural thin veneer stone of a similar type to that specified.
- B. Installer shall have five (5) years successful experience installing stone on projects of similar scale and complexity.

##### 1.3 SUBMITTALS

- A. Submit name of installer and stone supplier for approval by the Construction Manager.
- B. Samples: Submit samples of each specified stone material for approval before delivery to the site. Samples shall include shapes, sizes and kinds in sufficient number to show full range of size, color and texture of each type of stone specified. Final approval shall be by the Construction Manager.
- C. Sample Panel: Prior to the construction of any stone walls, a four square foot section of the stone wall is to be installed and approved by the Construction Manager. If the panel is approved, it may remain in place and be incorporated in the final product. If rejected, it is to be rebuilt until an acceptable sample panel is approved. The sample panel is to remain on site until the work of this Section is complete and will be used as a standard of comparison for the balance of work.

##### 1.4 DELIVERY, STORAGE AND HANDLING

- A. Deliver material to the site on platforms or pallets. Keep stone completely covered and free from frost, ice, and snow. Handle stone carefully to avoid chipping, breakage, contact with soil or contaminating materials. Store mortar materials in dry place. Damaged materials shall not be used.

##### 1.5 ENVIRONMENTAL CONDITIONS

- A. Maintain materials and surrounding air temperature to minimum 50° F prior to, during and 48 hours after completion of stone work.
- B. During freezing or near-freezing weather, provide adequate equipment or cover to maintain a minimum temperature of 50° F and to protect stone work completed or in progress.
- C. Protect partially completed stone masonry against weather when work is not in progress by covering top of walls with strong, waterproof, non-staining membrane. Extend membrane at least 2' down both sides of walls and anchor securely in place.
- D. Cold Weather Installation:
  - 1. Do not use frozen materials or materials mixed or coated with ice or frost.
  - 2. Do not use anti-freeze compounds, calcium chloride or substances containing calcium chloride in mortar or grout.
  - 3. Do not build on frozen work. Remove and replace work damaged by frost or freezing.
  - 4. Do not heat water above 106° F.
  - 5. When mortar or grout materials have been combined, temperature of the mixture shall not be less than 70° F nor more than 100° F.
  - 6. Materials shall be preconditioned and protected as follows:
    - a. When air temperature is below 40° F and above 32° F, heat mixing water. Protect masonry from rain or snow for 24 hours by means of waterproof covers.
    - b. When air temperature is below 32° F and above 20° F, heat both sand and mixing

- water. Maintain a temperature of at least 40° F on both sides of walls by means of suitable covers or enclosures for 24 hours.
- c. When air temperature is 20° F and below, heat sand, mixing water, and stone and provide heated enclosures. A temperature of at least 40° F shall be maintained within enclosures for 48 hours.
  - d. Periods required for protection and maintenance of specified temperatures may be reduced to 1/2 of those specified herein before if Type III Portland cement is used with approval.
- E. Hot Weather Installation:
1. During very hot weather and drying wind, use a very light fog spray of grout bedding areas several times during the first 24 hours to prevent premature drying of grout.

## PART 2 - PRODUCTS

### 2.1 STONE MATERIALS

- A. Stone Veneer for Gateway Sign Structures: Natural thin veneer stone.
1. Approved Manufacturers / Patterns / Colors:
    - a. Stone Solutions, LLC 22104 N 20<sup>th</sup> Avenue, Phoenix, Arizona. Phone: 480-391-7625. Website: [www.stonesolutionsllc.com](http://www.stonesolutionsllc.com).
      - i. Pattern / Color: "Elk Lodge"
    - b. Robinson Rock a division of Robinson Brick Company. 1845 West Dartmouth Avenue Denver, CO 80110 Toll-Free: (800) 477-9002. Website: [www.robinsonbrick.com](http://www.robinsonbrick.com).
      - i. Pattern / Color: "Suttermill"
    - c. Manufacturers providing materials of same design, function, quality, durability, and performance are acceptable.
  2. Color: Representative of the natural thin veneer stone approved by the Construction Manager.
  3. Size: Representative of the natural thin veneer stone approved by the Construction Manager.
  4. The stone shall be angular, generally consisting of rectangular shapes and shall be graded proportional to the photos and samples provided by the manufacturer during the submittal process. The approved color and size range of stone will be used for the construction of the stone veneer for each of the three sign locations.
  5. Control of gradation will be by visual inspection.
  6. The stone shall be free from segregation, seams, cracks, and other structural defects or imperfections tending to destroy its resistance to the weather.
  7. The Construction Manager retains the right to modify this mix ratio after review of the sample panel.
- B. 10" Sandstone Trim. The 10" sandstone trim for the sign base shall be full-depth natural sandstone free from segregation, seams, cracks, and other structural defects or imperfections tending to destroy its resistance to the weather.
1. Color: Buff
- C. Deductive Bid Alternate A: Manufactured Stone Veneer
1. Approved Manufacturers / Patterns / Colors:
    - a. Coronado Stone Products, 11191 Calabash Avenue, Fontana, California, 92337. Email: [sales@coronado.com](mailto:sales@coronado.com). Phone: 800-847-8663
      - i. Pattern / Color: "French Country Villa – Carmel Mountain"
    - b. Eldorado Stone, 1370 Grand Avenue, San Marcos, California, 92708. Website: [eldoradostone.com](http://eldoradostone.com). Phone: 800-925-1491
      - i. Pattern / Color: "Summerhouse – Cypress Ridge"
    - c. Manufacturers providing materials of same design, function, quality, durability, and performance are acceptable.
- D. During freezing or near-freezing weather, provide adequate equipment or cover to maintain a minimum temperature of 50° F and to protect stone work completed or in progress.

### 2.2 MORTAR AND GROUT MATERIALS

- A. Portland Cement: ASTM C150, Type 1, white.
- B. Hydrated Lime: ASTM C207, Type S for new construction.
- C. Aggregate Sand: ASTM C144.

- D. Coarse Aggregate for Grout: ASTM C404, less than 3/8".
- E. Water: ASTM C270, clean and suitable for domestic consumption.
- F. Mortar Coloring:
  - 1. Stone Masonry: Color to be selected from manufacturer's full line of standard mortar colors. Design intent shall be to match the predominant stone color.
- G. Admixtures: Pozzolan with approval; calcium chloride not permitted.

### 2.3 MORTAR AND GROUT MIXES

- A. Mortar Mixes: ASTM C270, Type S mortar with hydrated lime for all new masonry construction. Minimum compressive strength of 1,800 psi at 28 days:
  - 1. 1 part Portland Cement, Type 1.
  - 2. 1/4 to 1/2 part hydrated lime.
  - 3. 2-1/4 to 3-1/2 parts damp, loose sand.
- B. Masonry Grout Mix: Minimum compressive strength of 3,000 psi at 28 days:
  - 1. 1 part Portland Cement, Type 1.
  - 2. 2-1/4 to 3 parts damp, loose sand.
  - 3. 1 to 2 parts coarse aggregate.
  - 4. Pozzolan as per manufacturer's recommendations.
  - 5. Air entrainment shall be not more than 5% by volume.
- C. Mixtures may change as per manufacturer's recommendations to meet requirements.

### 2.4 STONE MASONRY ACCESSORIES

- A. Anchors: Furnish and set all anchors, ties and dowels.
- B. Stone Masonry Veneer Ties and Reinforcing:

### 2.5 ANTI-GRAFFITI COATING

- A. Type: clear-drying, water-based silicone emulsion for protecting masonry surfaces from graffiti attacks without altering the natural appearance. Approved manufactures:
  - 1. Sure Klean Weather Seal Blok-Guard and Graffiti Control II by Prosoco Inc., Lawrence, KS, (785) 865-4200, as the basis of design.
  - 2. Chemprobe Technologies, Inc., (800) 760-6776.
  - 3. Huls America, Inc., Somerset, NJ, (800) 828-0919.
  - 4. Okon, Inc., Lakewood, CO (303) 232-3571.
  - 5. Manufacturers providing materials of same design, function, quality, durability, and performance are acceptable.

## PART 3 - EXECUTION

### 3.1 INSPECTION

- B. The stone veneer installer shall examine the areas and conditions under which the stone veneer is to be installed and notify the General Contractor and Construction Manager in writing of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to the masonry installer.

- C. Verify dimensions before proceeding with the Work and layout out the wall(s) for approval by the Construction Manager prior to beginning work. Obtain field measurements for work required to be accurately fitted to other construction. Be responsible for the accuracy of such measurements and precise fitting and assembly of finished work.

### 3.2 PREPARATION, COORDINATION AND WORKMANSHIP

- B. Ensure items built-in by other trades for this work are properly located and sized.
- C. Establish all lines, levels and coursing. Protect from disturbance. Place stone in accordance with lines and levels indicated on the Drawings, sample photos, and the approved sample panel.
- D. Ensure that courses are uniform. Make vertical and horizontal joints equal and of uniform thickness.
- E. Tooth and fit stone.
- F. Cutting and fitting of stone, including that required to accommodate the work of other Sections, shall be done by stone mechanics.
  - 1. Perform job site cutting of stone units with proper power tools to provide straight, true and unchipped edges.
- G. Tolerances:
  - 1. Maximum variation from stone unit to adjacent stone unit to be 1/32".
- H. Coursing, Tooling and Joints: Refer to paragraphs 3.04 and 3.05

### 3.3 BATCH CONTROL

- A. Measure and batch materials either by volume or weight such that the required proportions for mortar can be accurately controlled and maintained.
- B. Mix mortar ingredients for a minimum of five (5) minutes in a mechanical batch mixer. Do not use grout which has begun to set or if more than 2-1/2 hours has elapsed since initial mixing. Re-temper mortar during 2-1/2 hour period as required to restore workability.
- C. Use mortar within two (2) hours of mixing at temperatures over 80° F, and 2-1/2 hours at temperatures under 50° F.

### 3.4 JOINTS

- A. General: Lay coursed units with hidden joints, unless otherwise indicated, except for minor variations required to maintain bond alignment.
- B. Rake out mortar in preparation for application of caulking or sealants where shown.
- C. Remove excess mortar and smears upon completion of work.
- D. Point out or replace defective mortar to match adjacent work.
- E. Clean soiled surfaces using a non-acidic solution which will not harm adjacent surfaces. Consult masonry manufacturer for acceptable cleaners.

### 3.5 INSTALLATION OF STONE MASONRY

- A. Lay, level and align corner units first. Lay stone masonry to match the approved sample panel.
- B. Lay first course of stone masonry in full bed of mortar. Lay subsequent courses in mortar bedding properly jointed with other work. Fully bond corners and intersections.
- C. Joint width shall match the approved sample panel.
- D. Do not shift or tap stone units after mortar has taken initial set. Where adjustment must be made, remove mortar and replace.

### 3.6 INSTALLATION OF VENEER TIES

- A. General: Install corrugated masonry veneer tie to concrete core at regular intervals not to exceed 16" o.c. both ways over the face of the masonry.

### 3.7 MORTAR BEDDING AND JOINTS

- A. Head joints shall be well buttered for thickness equal to 1/2 face dimension of unit and shall be shoved tightly so that mortar bonds well to both units.
- B. Mortar protrusions extending more than 3/8" into cells or cavities to be reinforced and/or filled, or into air space for veneer masonry, shall be removed.
- C. Joint Width: As specified above.

### 3.8 TOOLING

- A. Exposed Joints: Tool joints as scheduled. Rake out mortar in preparation for application of caulking or sealants when required.
  - 1. Exterior Face of Exterior Veneer: Full joints.
- B. Concealed Joints: Cut joints flush, unless otherwise shown.
- C. Joints which are not tight at the time of tooling shall be raked out, pointed and then tooled.

### 3.9 INSTALLATION OF CONTROL AND EXPANSION JOINTS

- A. Locate vertical control, expansion and isolation joints in stone masonry as shown on the Drawings or per "C" below. Joints shall be continuous through depth of the masonry work, unless otherwise detailed.
- B. Maintain control joint voids clear of mortar, grout and debris. Rake out mortar in preparation for application of caulking and sealants.
- C. Control Joint Spacing: If location of control joints is not shown, place vertical joints maximum 32' o.c. for stone masonry, except as specified herein:
  - 1. Masonry Veneer: Locate vertical control joints in continuous runs of masonry veneer so ratio of horizontal run to vertical height of veneer does not exceed 4:1, or 20'-0", whichever is greater.
  - 2. Masonry Veneer: Locate control joints within 16" maximum of all bonded external corners.
  - 3. Masonry Veneer: Provide at least one (1) control joint in each wall plane.
  - 4. Locate joints at points of natural weakness in supporting structure, at wall openings and at control joints located in the floor slab when walls are supported on the slab.

### 3.10 CLEANING AND PROTECTION

- A. General: All new stone masonry shall be thoroughly cleaned upon completion of the work.
- B. Remove and replace any chipped or broken stone units. Remove excess mortar and smears upon completion of work. Point or replace defective mortar to match adjacent work.
- C. Clean soiled surfaces exposed to view using a non-acidic solution which will not harm stone or adjacent materials. Consult manufacturer for acceptable cleaners. Use non-metallic tools in cleaning operations. Leave surfaces prepared for further sealers or coatings, if specified.

### 3.11 APPLICATION ANTI-GRAFFITI COATINGS

- A. Ensure that stone units have been properly cleaned and dried prior to applying the anti-graffiti coating. Protect adjacent materials, surfaces, and plant material from drips or overspray.
- B. Ensure proper precautions are taken for handling products near sources of heat or open flames.
- C. Prior to full application, a test panel of approximately 2' x 2' shall be treated to determine the degree of color change in the masonry and precise application procedures.
- D. Apply anti-graffiti coating at consistency and rate of application in accordance with manufacturer's instructions and recommendations.
- E. Apply anti-graffiti coating to all exterior exposed stone masonry surfaces, unless otherwise noted or scheduled to receive other finishes.
- F. Clean excess anti-graffiti coating from stone units and adjacent surfaces.

### 3.12 FIELD QUALITY CONTROL

- A. General: Installation of stone masonry units, mortar and grout, special curing and workmanship of joints shall be in accordance with the standards approved in the sample panel.
- B. All stone masonry units shall be sound and free of cracks or other defects that may interfere with the proper placing of the unit or impair the strength or performance of the construction.
- C. Face or faces that are exposed shall be free of chips, cracks or other imperfections to the satisfaction of the Construction Manager, except that chips not larger than 1/4" will be considered acceptable.
- D. Contractor shall promptly remove any rejected stone units or portions of the work and replace to match the quality of the approved sample panel.

END OF SECTION

## SECTION 05500

### METAL FABRICATIONS

#### 2 GENERAL

##### 1.1 DESCRIPTION

- A. Drawings and general provisions of the Contract Documents including General, Supplemental and other Conditions and Division 1, "General Requirements" Sections, apply to the work specified in this Section.
- B. The extent of the miscellaneous metal work is indicated on the drawings, which includes, whether specifically specified herein or not, all items fabricated from iron and steel shapes, plates, bars, strips and pipes which are not a part of structural steel or other metal systems in other sections of these specifications.
- C. Related Sections
  - 2.1.1.1.C.1 Division 3 Section "Cast-in-Place Concrete" for installing anchor bolts, steel pipe sleeves, wedge-type inserts and other items indicated to be cast into concrete.
  - 2.1.1.1.C.2 Division 4 Section "Stone Veneer" & "Concrete Unit Masonry" for installing other items indicated to be built into masonry.
- 3. Coordinate with all applicable sections of these specifications for related work where miscellaneous metals work is to be used.

##### 1.2 QUALITY ASSURANCE

- A. Standard Specifications: Comply with the provisions of the following codes, standards and specifications, except as otherwise shown or specified:
  - 1. AISC "Specification for the Design, Fabrication, and Erection of Structural Steel for Buildings", and including "Commentary of the AISC Specifications".
  - 2. AISC "Specification for the Design of Cold-Formed Steel Structural Members".
  - 3. AWS "Structural Welding Code".
- B. Qualifications for Welding Work
  - 1. Qualify welding processes and welding operators in accordance with the AWS "Standard Qualification Procedure".

##### 1.3 SUBMITTALS

- A. Manufacturer's Data
  - 1. Submit manufacturer's specifications, dimension diagrams, anchor details and installation instructions for products to be used in the fabrication of miscellaneous metal work, including paint products.
- B. Shop Drawings
  - 1. Submit **complete**, checked shop drawings.
  - 2. Include shop drawings for the fabrication and erection of all assemblies of miscellaneous metal work, which are not completely shown by the manufacturer's data sheets.
  - 3. Include all details, elevations, welding and other connections, zinc-coating and shop painting information and dimensions; coordinate with connecting and adjacent work; show anchorage and accessory items.
  - 4. Include plans and elevations at not less than 1" to 1'-0" scale, and include details of sections and connections at not less than 3" to 1'-0" scale.
  - 5. Provide setting drawings, templates, and directions for installation of anchor bolts and other anchorages to be installed by other trades.
  - 6. Shop drawings are interpretations of and are supplemental to the design drawings and specifications. Their intent is to demonstrate to Architect that this Contractor has understood the design concept, and to provide detailed information necessary for the fabrication, assembly, and installation of the products and materials specified. Neither the shop drawings nor comments placed on them by the Architect shall be construed as being change orders.

##### 1.4 JOB CONDITIONS

- A. Field Measurements
  - 1. Take field measurements prior to preparation of shop drawings and fabrication, where possible, to ensure proper fitting of the work. However, do not delay job progress; allow for trimming and fitting wherever the taking of field measurements before fabrication might delay

- the work.
- B. Inserts & Anchorages
  1. Furnish inserts and anchoring devices which must be set in concrete and/or welded to building components for the installation of miscellaneous metal work. Coordinate delivery with other work to avoid delay.
- C. Shop Assembly
  1. Pre-assemble items in the shop to the greatest extent possible, so as to minimize field splicing and assembly of units at the project site.
  2. Disassemble units only to the extent necessary for shipping and handling limitations.
  3. Clearly mark units for re-assembly and coordinated installation.

### 3 PRODUCTS

#### 2.1 MATERIALS

- A. Materials – General
  1. Metal Surfaces, General: For the fabrication of miscellaneous metal work which will be exposed to view, use only materials which are smooth and free of surface blemishes including pitting, seam marks, roller marks, rolled trade names and roughness. Remove such blemishes by grinding, or by welding and grinding, prior to cleaning, treating and application of surface finishes including zinc coatings.
  2. Steel Plates, Shapes and Bars: ASTM A36.
  3. Steel Plates to be Bent or Cold-Formed: ASTM A283, Grade C.
  4. Cold-Finished Steel Bars: ASTM A108, grade as selected by fabricator.
  5. Hot-Rolled Carbon Steel Sheets and Strips: ASTM A568 and ASTM A569; pickled and oiled.
  6. Cold-Rolled Carbon Steel Sheets: ASTM A 366.
  7. Galvanized Carbon Steel Sheets: ASTM A653, with hot-dip galvanized coat complying with ASTM A924, G90.
  8. Steel Pipe: ASTM A53, type as selected; Grade A; black finish; standard weight (schedule 40), except where otherwise shown or specified as stronger.
  9. Steel Tubing: ASTM A500, Grade B.
  10. Stainless Steel: Type 304, ASTM A167, with AISI 2D finish, deal soft, fully annealed.
  11. Aluminum: Furnish extruded shapes of 6061-T6 alloy, of gauges, shapes and sizes required, unless otherwise specifically specified herein.
- B. Anchors
  1. Threaded-Type Concrete Inserts: Galvanized ferrous castings, internally threaded to receive machine bolts; malleable iron ASTM A27; hot-dip galvanized.
  2. Wedge-Type Concrete Inserts: Box-type ferrous castings, designed to accept bolts having special wedge-shaped heads; malleable iron ASTM A47, or cast steel ASTM A27; hot-dip galvanized.
  3. Slotted-Type Concrete Inserts: 1/8" thick pressed steel plate, ASTM A283; box-type welded construction with slot design to receive square head bolt and with knockout cover; hot-dip galvanized.
- C. Fasteners
  1. General: Provide zinc-coated fasteners for exterior use or where built into exterior walls.
  2. Standard Bolts and Nuts: ASTM A307, Grade A, regular hexagon head.
  3. Lag Bolts: Hex head type complying with Federal Spec FF-B-561.
  4. Machine Screws: Cadmium plated steel complying with Federal Spec FF-S-111.
  5. Plain Washers: Round, general assembly grade carbon steel complying with Federal Spec FF-W-92.
  6. Lock Washers: Helical spring type carbon steel complying with Federal Spec FF-W-84.
- D. Zinc Coating
  1. Except as further specified below and where specifically noted in this Section ferrous metal items are to be zinc-coated or galvanized; provide by the "hot-dip" method, in accordance with ASTM A123, of the following coating weight per square foot of actual surface:
 

Steel under 1/16"	:	1.1 oz. average, 1.8 oz. min.
Steel 1/16" to under 1/8"	:	1.5 oz. average, 1.8 oz. min.
Steel 1/8" to under 1/4"	:	2.0 oz. average, 1.8 oz. min.
Steel 1/4" and heavier	:	2.3 oz. average, 2.0 oz. min.
  2. Galvanize bolts and similar threaded fasteners in accordance with ASTM A153, Class A, B, C and D, as applicable.
  3. Steel pipe shall be galvanized in accordance with ASTM A53.

4. Steel sheet in coils and cut lengths shall be galvanized in accordance with ASTM A924, G-60 or G-90 specifications, as applicable.
  5. Furnish certificate from plating firm attesting to conformance with Specifications for steel plates and shapes.
- E. Metal Primer Paint
1. Zinc-Coated (Galvanized) Material: Not required, except furnish zinc-rich primer for re-galvanizing welds in galvanized steel, complying with Steel Structures Painting Council (SSPC) Painting System Guide PS12.01.
  2. All Other Ferrous Metals - Concealed in the Completed Work: Furnish Tnemec Company, Inc. "FD88 Azeroon Primer", or approved, lead-free, high solids primer, meeting or exceeding performance requirements of Federal Specification TT-P-86G, Type I. At fabricator's option, primer as specified below for 'exposed' applications may be used for 'concealed' work.
  3. All Other Ferrous Metals - Exposed in the Completed Work: Furnish Tnemec "Series 37 Chem-Prime" or Sherwin Williams "Kem Kromik Universal Metal Primer", or approved, chromate-free rust inhibitive universal alkyd-phenolic primer compatible with high performance primer and finish coats as specified.
- F. Grout for Installation of Metal Fabrication
1. For general use, furnish Master Builders "Masterflow 928 Grout", or approved, "flowable" consistency, with a minimum compressive strength in 28 days of 7000 psi.

## 2.2 FABRICATION - GENERAL

- A. General
1. Use materials of the size and thicknesses shown or, if not shown, of the required size and thickness to produce adequate strength and durability in the finished product for the intended use. Work to the dimensions shown or accepted on shop drawings, using proven details of fabrication and support. Use the type of materials shown or specified for the various components of the work.
  2. Form exposed work true to line and level with accurate angles and surfaces and straight sharp edges. Ease exposed edges to a radius of approximately 1/32" unless otherwise shown. Form bent-metal corners to the smallest radius possible without causing grain separation or otherwise impairing the work; punch and shear leaving clean and true surfaces.
  3. Weld corners and seams continuously and in accordance with the recommendations of AWS. Grind exposed welds smooth and flush, to match and blend with adjoining surfaces.
  4. Form exposed connections with hairline joints which are flush and smooth, using concealed fasteners wherever possible. Use exposed fasteners of the type shown or, if not shown, use Phillips flathead (countersunk) screws or bolts.
  5. Provide holes, cuts and connections, where shown, for work of other trades. Provide for anchorage of the type shown, coordinated with the supporting structure and the progress schedule. Fabricate and space anchoring devices as shown and as required to provide adequate support for the intended use of the work.
  6. Use hot-rolled steel bars for work fabricated from bar stock, unless work is indicated to be fabricated from cold-finished or cold-rolled stock.
  7. Detail joints and fastenings for ample strength and stiffness as shown or approved; conceal fastenings wherever possible.
  8. Form joints to exclude water, where exposed to elements.
- B. Shop Painting
1. Zinc-coated (galvanized) material: Not required unless specifically noted otherwise.
  2. All other ferrous metals:
    - a. Remove all mill scale, rust, loose rust, oil, grease, dirt and foreign matter. Clean and prepare surfaces in exterior work in accordance with SSPC Specification SP6. Clean and prepare surfaces in interior work in accordance with SSPC Specification SP3.
    - b. Apply one brush or airless spray coat primer coating of applicable type as specified above, as applicable, applied to all exposed surfaces after fabrication, dry film thickness as specified above.

## 2.3 FABRICATION – MISCELLANEOUS STEEL ITEMS

- A. Items
1. Furnish all miscellaneous metal fabrication items shown on Drawings. Fabricate accurately.

## 4 EXECUTION

### 3.1 PREPARATION

- A. Coordinate setting drawings, diagrams, templates, instructions and directions for the installation of anchorages, such as concrete inserts, anchor bolts and miscellaneous items having integral anchors, which are to be embedded in concrete construction. Coordinate the delivery of such items to the project site.

### 3.2 SURFACE CONDITIONS

- A. Prior to installation of work in this Section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where installation of the work of this Section may properly commence
- B. Verify that miscellaneous metal items have been fabricated for installation in strict accordance with the original design and the approved shop drawings.
- C. In the event of discrepancy, immediately notify the Architect. Do not proceed with installation of miscellaneous metal items in areas of discrepancy until all such discrepancies have been fully resolved.

### 3.3 MANUFACTURED ITEMS

- A. Immediately after erection, clean the field welds, bolted connections, and abraded areas of shop rimming. Paint the exposed areas with same material used for shop priming, to the same required thickness.

### 3.4 INSTALLATION – FABRICATED ITEMS

- A. Installation - General
  - 1. Fastening to in-place construction: Provide anchorage devices and fasteners where necessary for securing miscellaneous metal item to in-place construction; including threaded fasteners for concrete inserts, toggle bolts, through-bolts, lag bolts and other connectors as required.
  - 2. Cutting, fitting & placement:
    - a. Perform all cutting, drilling, and fitting required for installation of the miscellaneous metal items. Set the work accurately in location, alignment and elevation, plumb, level, true and free of rack, measured from established lines and levels.
    - b. Provide temporary bracing or anchors in formwork for items which are to be built into concrete, masonry or similar construction.
    - c. Fit exposed connections accurately together to form tight hairline joints. Weld connections which are not to be left as exposed joints, but cannot be shop welded because of shipping size limitations.
    - d. Grind joint smooth and touch-up shop paint coat.
    - e. Do not weld, cut or abrade the surfaces of units which have been hot-dip galvanized after fabrication, and are intended for bolted field connections.
- B. Fabricated Items
  - 1. Install all steel items as specified above and as otherwise shown on Drawings.
  - 2. Install as detailed or required for rigidity and permanence.
  - 3. Grind all welds smooth in fabrication work to be left exposed in completed work.
- C. Touch-Up Painting
  - 1. Provide cleaning and touch-up painting of field welds, bolted connections and abraded areas of the shop paint on miscellaneous metal items.

END OF SECTION

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SECTION 16010

ELECTRICAL GENERAL PROVISIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The Drawings and General provisions of the Contract including the "General Conditions", "Supplementary Conditions", and "General Requirements" of the Contract as written and referred to here are adopted and made part of Division 16.
- B. The Contract Agreement, Bidding documents, and all Addenda issued prior to Contract Agreement execution form a part of these specifications and apply to all Contracts or Subcontracts relating to the electrical systems.

1.2 SUMMARY

- A. The work under this Division shall consist of all labor, materials, equipment, services and related accessories, etc., necessary and required to complete all work as shown or inferred on the Drawings and in the Specifications (Contract Documents).
- B. Provide fully packaged solar signage system with solar PV Panel, Pole Mount, LED fixtures, Batteries, Battery Cabinets, Fuses and interconnections.
- C. Provide external conduit from system to the LED fixtures as shown on E3 through E5
- D. Provide Pole Base for 14' pole (10' A.F.G.) with a wind rating of 120 MPH.
- E. Provide all final connections as required by the manufacturer's installation manual.

1.3 WORK INCLUDED IN THIS DIVISION

- A. Electrical work includes, but is not limited to
  - 1. Provisions for electrical services and electrical work located on or crossing through project property, above or below grade, obstructing construction of project or conflicting with completed project or any applicable code.
  - 2. Alterations and additions to existing electrical systems.
  - 3. Provide equipment package, disconnects, conduit, wire, control coordination, and/or other equipment forming part of system.
- A. Control wiring for mechanical systems, except where specifically indicated to be provided by Electrical Contractor. See Division 15.

1.4 RELATED WORK SPECIFIED ELSEWHERE

- A. Classification of Excavation: Division 2 – Site work.
- B. Concrete Work: Division 3.
- C. Painting: Division 9.

1.5 REFERENCES

NEC:	National Electrical Code (latest edition adopted by local authorities unless otherwise noted).
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NFPA:	National Fire Protection Association.
OSHA:	Occupational Safety and Health Administration.
UL:	Underwriters Laboratories, Inc.
NEMA:	National Electrical Manufacturer's Association.
IEEE:	Institute of Electrical and Electronic Engineers.
ACI:	American Concrete Institute.
ADA:	American Disabilities Act.
ANSI:	American National Standards Institutes.
ASTM:	American Society for Testing Materials.
AWS:	American Welding Society.
FM:	Factory Mutual Insurance Association.
IBC:	International Building Code
IES:	Illumination Engineering Society.
ISA:	Instrument Society of America.
LPI	Lightning Protection Institute.
NACE:	National Association of Corrosion Engineers.
NETA:	International Electrical Testing Association.
UL:	Underwriters Laboratories.
NECA:	National Electrical Contractors Association
NETA:	National Electrical Testing Association.

## 1.6 ADOPTED CODES

- A. 2006 International Building Code (IBC) Published by the International Code Council (ICC).
- B. 2005 National Electrical Code (NEC) published by the National Fire Protection Association (NFPA)
- C. 2006 International Fire Code (IFC) published by the International Code Council.
- D. National Fire Codes (NFPA Standards) published by the National Fire Protection Association (NFPA) as referenced in the 2006 International Fire Code.
- E. 2006 International Energy Conservation Code (IECC) published by the International Code Council. ASHRAE/IESNA Standard 90.1-2004 is incorporated by reference.
- F. All applicable provisions of the Nevada Revised Statutes (NRS) and the Nevada Administrative Code (NAC), including those listed below.
- G. The most current regulations of the State Fire Marshal, Nevada Department of Public Safety, Carson City, Nevada (NAC Chapter 477, State Fire Marshal).
- H. The most current edition of the Americans with Disabilities Act (ADA) published by the United States Department of Justice including the Americans with Disabilities Act Accessibility Guidelines (ADAAG)
- I. Other codes, regulations, and standards referenced in the body of this document.
- J. Local codes and ordinances do not apply to projects constructed on state-owned land, except for zoning requirements pursuant to Nevada Revised Statutes Section 278.580.

## 1.7 DEFINITIONS

Provide:	Furnish, install, connect and test until complete.
Wire:	Furnish all necessary wiring, connect and test until complete.
Install:	Furnish, set in place, wire and test until complete.
Work:	Materials completely installed, connected, and tested until complete.
AWG:	American Wire Gage.
Equal:	Acceptable equal as determined by the Engineer.

## 1.8 REQUIREMENTS OF REGULATORY AGENCIES

- A. Obtain and pay for all permits and inspections required for the work. Comply with all ordinances pertaining to work described herein. Pay all expenses arising from the procurement of these certificates and include in the base Contract Price.
- B. Install work under this Division per drawings, specifications, latest adopted edition of the National Electrical Code, (NFPA-70) including local amendments and interpretations, Local adopted Building Codes, and any special codes having jurisdiction over specific portions of work within complete installation. In event of conflict, install work per most stringent code requirements determined by Engineer. This does not relieve the Contractor from furnishing and installing work shown or specified which may exceed the requirements of such ordinances, laws, regulations and codes.
- C. All materials, products, devices, fixtures, forms or types of construction included in this project shall meet or exceed the published requirements of National Electrical Code (NEC), American National Standards Institute (ANSI), Institute of Electrical and Electronics Engineers (IEEE) and National Electrical Manufacturers Associations (NEMA). All equipment shall bear the Underwriter's Laboratories (UL) label or equivalent from approved independent testing laboratory.
- D. Arrange, pay fees for and complete work to pass required tests by agencies having authority over work. Deliver to Engineer copies of the Certificates of Inspection and approval issued by authorities and provide original copy of each certificate to Owner.
- E. When required by law or regulations, the governmental agency having jurisdiction for inspections shall be given reasonable notice and opportunity to inspect the work. Any work that is enclosed or covered up before such inspection and test shall be uncovered at the Contractor's expense; after it has been inspected, the Contractor shall restore the work to its original condition at his own expense.

## 1.9 INSURANCE

- A. The Contractor shall procure and maintain, at his expense, such insurance as required by law and/or specified in the General Conditions.

## 1.10 DRAWINGS AND SPECIFICATIONS

- A. Drawings and specifications are complementary. Work called for by one is binding as if called for by both. Any discrepancies between drawings and specifications shall be brought to the attention of the Engineer for clarification during the bidding period. No allowance shall subsequently be made to the Contractor by reason of his failure to have brought said discrepancies to the attention of the Consultant during the bidding period or by reason of any error on the Contractor's part.
- B. Drawings are schematic and diagrammatic in nature. Drawings show general run of circuits and approximate location of equipment. The contractor shall review drawings of all trades to assure coordination prior to placement of work. Right is reserved to change location of equipment and devices, and routing of conduits within 10 feet, without extra cost to Owner (prior to rough-in).
- C. Use dimensions in figures, shop drawings, etc. and actual site measurements in preference to scaled dimensions. Do not scale drawings for exact sizes or locations – use dimensioned details or actual field conditions. Verify item mounting heights as required by project conditions prior to rough-in.

- D. The architectural drawings shall take precedence over all other drawings in matters of dimensions. Discrepancies between different drawings or between drawings and specifications, or regulations and codes governing the installation shall be brought to the attention of the Engineer in writing for determination.
- E. Layout equipment as shown on drawings as close as possible. Verify access requirements for equipment actually furnished, and adjust layout to comply with NEC 110. Right is reserved to change layout within 10 feet without additional cost (prior to rough-in).
- F. The Contractor is responsible to field measure and confirm the mounting heights and location of electrical equipment with respect to counters, doorways, and other architectural, mechanical or structural work. Do not scale distances off the electrical drawings: Use actual building dimensions.
- G. Execution of Contract is evidence that Contractor has examined all existing conditions, drawings and specifications related to work, and is informed to extent and character of work. Later claims for labor and materials required due to difficulties encountered, which could have been foreseen had examination been made, will not be recognized.
- H. All work called for in this Section of the plans and specifications shall be performed under this Section, regardless of whether such work may also have been called for in other Section(s). Discrepancies in or conflicts among the various parts of the contract drawings shall not relieve Contractor of his obligation to perform.
- I. No attempt has been made to establish the required sections or splits of equipment relative to the size of access into the space, building, etc. Contractor shall establish all said splits, sections, etc. necessary to install equipment complete without undue disassembly of equipment or demolition of building parts at site of work.
- J. Charges for extra work are not allowed unless work is authorized by written order from the Owner's Representative approving charges for work.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. All material shall be new, and have a UL label where available. If UL label is not available, material shall be manufactured in accordance with applicable NEMA, IEEE and Federal Standards. Use UL labeled components in assemblies that do not have overall UL label. All equipment shall comply with the terms "listed and labeled" as defined in the NEC 70, Article 100. Submit letter stating compliance with these requirements.
- B. Utilize one of the manufacturers listed to furnish all of the major equipment (i.e., transformers, bus duct, switchgear, circuit breakers, etc.) required for this project.

## PART 3 - EXECUTION

### 3.1 VISITS TO SITE

- A. Visit site, and survey existing conditions affecting work prior to bid. Include necessary materials and labor to accomplish the electrical work, including relocation of existing services and utilities on building site in bid. No consideration shall be given to future claims due to existing conditions. Any discrepancies or interference's shall be reported immediately to the Engineer.

### 3.2 WORKMANSHIP

- A. All work performed shall be first class work in every aspect. The work shall be performed by mechanics skilled in their respective trades, who shall at all times be under the supervision of competent persons. All work shall be installed to comply with NECA's "Standard of Installation."
- B. Work under this Division shall be first class with emphasis on neatness and workmanship. All work shall be installed square and plumb and concealed where possible. Work that is deficient, defective,

poorly laid out, not perfectly aligned, or that is not consistent with the requirements generally accepted in the trade for "first class work" will not be acceptable.

- C. In addition to the materials specified elsewhere, furnish and install all other miscellaneous items necessary for the completion of the work to the extent that all systems are complete and operative.
- D. All work under this Section shall be performed in cooperation with the work performed under all other Sections of the Specifications for the Project in order to avoid interference with other work and to secure the proper installation of all work. Refer the Drawings and Specifications covering the work to be performed under all Sections, so that the relation and extent of the work of this Section with respect to the work of all other Sections is understood. Give right of way to raceways and piping systems installed at a required slope.
- E. Install work using competent mechanics, under supervision of foreman, all duly certified by local authorities. The installation shall be subject to the Engineer's observation, and final acceptance. The Engineer may reject unsuitable work.
- F. Conduit systems must be complete prior to installation of wiring.

### 3.3 CHANGE ORDERS

- A. Additional work may be required on the project which is outside the scope of the contract. Such additional work will be described in Supplemental Instructions and/or Clarifications, to be estimated and priced by the Contractor, and accepted by the Owner, prior to commencing work. Proposals shall include a list of quantities of all material being used with unit costs broken down into material and labor costs per unit.
- B. Material costs and labor units shall not exceed the latest edition of RS Means Electrical Cost Data.
- C. See the General Conditions of the Specifications for acceptable charges.

### 3.4 GUARANTEE

- A. Furnish the Owner a written guarantee, stating that if workmanship and/or material executed under this Division is proven defective within one (1) year after final acceptance by the Owner, such defects and other work damaged will be repaired and/or replaced. Submit with Operations and Maintenance Manuals.
- B. Obtain from the various manufacturers or vendors guarantees or warranties for their particular equipment or components, and deliver them to the Owner. All guarantees and warranties provided shall be referenced to this project.
- C. In event that systems are placed in operation in several phases at the Owner's request, guarantee will begin on date each system or item of equipment is accepted for service by the Owner. Provide O&M manuals for all equipment when equipment is accepted for service by the Owner.
- D. All guarantees and warranties shall include labor and material at the site of installation for the duration of the guarantee period.

### 3.5 OBSERVATIONS OF WORK AND DEMONSTRATION OF OPERATION (ACCEPTANCE)

- A. At all observations of work, open panel covers, junction box covers, pull box covers, device covers, and other equipment with removable plates for observation. Provide sufficient personnel to expedite cover removal and replacement.
- B. Contractor to demonstrate operation of new equipment and/or systems to satisfaction of Owner/Engineer. Contractor to have manufacturer available for demonstration of equipment and/or systems where requested by Owner/Engineer. Furnish affidavit signed by Owner's representative indicating that demonstration of operation has been performed.

### 3.6 COOPERATION AND COORDINATION

- A. Carefully coordinate work with other contractors and subcontractors. Refer conflicts between trades to Engineer. Provide necessary information to other trades for such coordination. Such information shall include Shop Drawings, Product Data and all other required data.
- B. Whenever such information is not provided in a timely manner or whenever such information is incorrect, this contractor shall bear all costs for providing or correcting affected work of related trades with no change to the Contract Price or Construction Schedule.
- C. Work to be installed as progress of project will allow. Schedule of work determined by General Contractor, Owner, and/or Architect/Engineer.

### 3.7 PROTECTING

- A. Provide warning lights, bracing, shoring, rails, guards and covers necessary to prevent damage or injury. All persons working around electrical equipment shall have electrical shock and flash protection per OSHA 1910.301-309 & 331-335.
- B. Do not leave exposed or unprotected, electrical items carrying current. Protect visitors and workers from exposure to contact with electrically energized surfaces, parts, etc. in accordance with OSHA standards.

### 3.8 DELIVERY, STORAGE AND HANDLING

- A. Deliver equipment and materials to job site in original, unopened, labeled container. Products shall be properly identified with names, model numbers, types, grades, compliance labels and other information needed for identification. Store to prevent damage and injury. Store materials to prevent corroding. Store finished materials and equipment to prevent staining and discoloring. Store materials affected by condensation in warm dry areas. Provide heaters. Contractor shall verify the availability of on site storage space, if no on site storage space is available then the contractor shall cover the cost for off site storage. Materials stored at the project site that becomes soiled with construction dirt, concrete, or moisture shall be removed from the site and replaced with new. Do not install soiled material.
- B. Protect work and materials from damage by weather, entrance of water or dirt. Cap and mark conduit during installation.
- C. Avoid damage to materials and equipment in place. Repair, or remove and replace damaged work and materials.
- D. Protection and safekeeping of products stored on premises is responsibility of Contractor supplying products.
- E. Schedule of deliveries and unloading to prevent traffic congestion blocking of access or interference with work. Arrange deliveries to avoid larger accumulations of materials than can be suitably stored at site.
- F. Install equipment per manufacturer's recommendations. Conflicts between contract documents and these recommendations shall be referred to Engineer for remedy.
- G. Electrical or electronic equipment that has been damaged, exposed to weather or is, in the opinion of the Engineer or Architect, otherwise unsuitable because of improper fabrication, storage or installation shall be removed and replaced by this Contractor at his expense.

### 3.9 ANCHORS

- A. Provide anchors for all equipment, raceways, hangers, etc. to safely support weight of item involved plus 100% for dead loads. Live loads shall be considered in addition to dead loads.
- B. Anchors to consist of expansion type devices similar to "Redhead" or lead expansion anchors. Plastic anchors are not acceptable.
- C. Use preset anchor steel inserts in concrete slabs. Provide preset anchor size and type for anticipated or specified rod/bolt size and live/dead load.

3.10 CLEANING AND PAINTING

- A. Clean equipment furnished in this Division after completion of work. Clean wipe the interior of all conduits, pull-boxes, junction boxes, outlet boxes, and panelboard back boxes, soiled with dirt and debris prior to installation of wiring.
- B. Touch-up or re-paint damaged painted finishes as determined by the Engineer.
- C. Remove debris, packing cartons, scrap, etc., from site daily.

3.11 SPARE PARTS

- A. Where spare parts are specified in the Technical Sections, furnish spare parts to Owner with itemized receipt. Contractor is responsible to deliver parts and have receipt signed by Owner's representative. Turn over receipt with as-built documents.

3.12 TRAINING

- A. Training for operation and maintenance of new systems or modifications to existing systems is specified in Technical sections. Contractor shall submit with record documents an itemized receipt signed by Owner's representative that all specified training has been received.

END OF SECTION

SECTION 16020  
ELECTRICAL SUBMITTALS

PART 1 - GENERAL

1.1 DESCRIPTION OF SUBMITTAL CATEGORIES

- A. The required submittals are defined below and specified in each section.
1. Requests for substitutions are written requests to use materials, equipment, etc., different from that specified.
  2. Shop Drawings include fabrication, layout, wiring diagrams, erection, setting, coordination, drawings and diagrams and performance data.
  3. Samples are units of work, materials or equipment items, showing the workmanship, pattern, trim and similar qualities proposed.
  4. Manufacturer's Data is standard printed product information concerning the standard portions of the manufacturer's products.
  5. Certifications are written statements, executed specifically for the project application by an authorized officer of the contracting firm, manufacturer, or other firm as designated, certifying to compliance with the specified requirements.
  6. Test Reports are specific reports prepared by independent testing laboratories, showing the results of specified testing.
  7. Industry Standards are printed copies of the current standards in the industry.
  8. Manufacturer's Product Warranties are manufacturer's standard printed commitment in reference to a specific product and normal application, stating that certain acts of restitution will be performed by the manufacturer if the product fails under certain conditions and times limits.
  9. Operating Instructions are the written instructions by the manufacturer, fabricator or installer of equipment or systems, detailing the procedures to be followed by the Owner's in operation, control and shut-down.
  10. Maintenance Manuals are the compiled information provided for the Owner's maintenance of each system of operating equipment.
  11. Maintenance Materials (spare parts) are extra stock of parts or materials for the Owner's initial use in maintaining the equipment and systems in operation.
  12. Record Drawings are accurate representations of the installed systems and wiring as recorded on a daily "as-installed" basis.
  13. Guarantees are signed commitments to the Owner that certain acts of restitution will be performed if certain portions of work fail within certain conditions and time limits.
  14. Product Data includes manufacturer's data pertaining to the products, materials and equipment of the work.
  15. Method of Procedures are detailed sequences of work required during interruption of service and/or connection to energized parts of systems requiring special sequences or protections.
  16. Training – Materials and sign-off of completion.

17. Identification nomenclature – See section 16040.

## PART 2 - PRODUCTS

### 2.1 PROPOSED MATERIAL MANUFACTURERS

- A. Submit to Consultant within 7 days after award of contract a complete list of proposed material manufacturers. List does not preclude submission of shop drawings. Acceptance of manufacturer on list does not constitute acceptance of specific material or equipment. If shop drawings are submitted with non approved substitutions, the contractor will pay the expense incurred by the consultant to review the shop drawings of any re-submittal.

## PART 3 - EXECUTION

### 3.1 SUBSTITUTIONS

- A. See General Conditions of the specifications for information regarding substitutions. Specified catalog numbers are used for description of equipment and standard of quality only. Equivalent material will be given consideration only if adequate comparison data including samples if requested by Engineer are provided. Alternate products shall meet or exceed design criteria and shall require engineer's approval.

### 3.2 SUBMITTAL FORM AND PROCEDURES

#### A. Shop and Erection Drawings

1. Submit shop drawings for material and equipment furnished under Division 16 of specifications, to Consultant for review within 30 days after award of contract. Shop drawings shall be submitted on timely basis to allow adequate lead time for review, re-submission if necessary, manufacture and delivery to allow access of material to project at correct time based on schedule established by Consultant/Contractor. Provide index with thumb tabs collated with Table of Contents for sections. Include complete descriptive data with dimensions, operating data and weight for each item of equipment. Carefully examine shop drawings to assure compliance with drawings and specifications prior to submittal to Consultant. Shop drawings and submittals shall bear the stamp of approval of the Electrical Contractor as evidence that they have checked the drawings. Drawing submitted without this stamp of approval will not be considered and will be returned for proper re-submission. All shop drawings shall be submitted as a single one time complete package. Partial packages shall not be reviewed.
2. Submit minimum 6 copies. Architect/Engineer will retain minimum 3 copies and return balance to Contractor.
3. Clearly mark each shop drawing item to correspond to drawings and specifications. Any drawings not clearly marked will be rejected.
4. Review of shop drawings does not relieve Contractor of responsibility for errors and omissions in shop drawings. Contractor is responsible for dimensions and sizes of equipment. Inform Engineer in writing of equipment differing from that specified.

#### B. "Record" Drawings

1. One complete set of prints will be furnished to the Contractor to indicate actual location of conduit systems, outlets, and equipment. Keep set of prints on job and record day to day changes to Contract drawings with red pencil. Provide "Record" drawings as specified in the General Conditions or Division 1 of the specifications at the completion of job.

#### C. Maintenance Materials

1. Submit a list of all warranties and guarantees.

2. Submit with final close out documents a signed receipt for all maintenance materials (spare parts) specified. See Technical Sections for required materials.
- D. Product Warranties and Guarantees
1. Submit fully executed Product Warranties and Contractor Guarantees to the Owner with final close out documents.
- E. Maintenance Manuals
1. Submit to Consultant three (3) sets of data prepared by manufacturer for each item and/or device of electrical equipment furnished in this contract completely describing and identifying equipment. Data to include serial numbers, catalog/model numbers, parts lists, and description of operation, final shop drawings, wiring diagrams, all electrical ratings, set-up and maintenance procedures and other literature required for maintenance of equipment. See Technical Sections for other required information.
- F. Summary of Project Closeout Items for Owner
1. Certificates of inspection and approval from authorities having jurisdiction.
  2. Executed Guarantees and Product Warranties.
  3. "Record" drawings.
  4. Final shop drawings.
  5. Final Erection drawings.
  6. Receipt for maintenance materials (spare parts).
  7. Maintenance manuals.
  8. Receipt for keys.
  9. Completed test reports.
  10. Signed off observation and punch lists.
  11. Lien waivers.

### 3.3 SPECIFIC SUBMITTAL REQUIREMENTS

- A. Shop Drawings shall include, but not be limited to the following:
1. Shall be drawn to accurate scale except where diagrammatic representations are specifically indicated.
  2. Shall show clearance dimensions of critical locations and show dimensions of spaces required for operation and maintenance of equipment.
  3. Shall show conduit and conductor connections and other service connections.
  4. Shall show interfaces with other work including structural support.
  5. Shall include complete descriptive data, with dimensions, operating data and weight.
  6. Shall indicate deviation from the contract documents.
  7. Shall explain deviations.
  8. Shall show short circuit current ratings for all electrical equipment.

9. Shall show how deviations coordinate with portions of the work, currently or previously submitted.
- B. Review of shop drawings shall not relieve Contractor of responsibility for errors or omissions in shop drawings. Any equipment that will not fit into space shown on drawings shall be called to the attention of the Engineer in writing.
- C. Samples: Submit samples where requested by Engineer. Engineer's review of sample submittals
1. Shall be limited to general type, pattern and finish.
  2. Shall not include testing and inspection of the submitted samples.
  3. Shall not indicate complete compliance with specified requirements. Complete compliance with specifications is the exclusive responsibility of the Contractor.
- D. Manufacturer's Data
1. Where pre-printed data covers more than one distinct item, mark copy to *clearly* indicate which item is to be provided.
  2. Contractor shall delete portions of data not applicable.
  3. Contractor shall mark data showing portion of operating range required for project application.
  4. Elaboration of standard data describing a non-standard product shall be processed as a shop drawing.
  5. For each product Contractor shall include the following information summarized into a single sheet document for each product.
    - a) Manufacturer's production specifications including catalog/model number.
    - b) Manufacturer's Serial Number.
    - c) Installation or fabrication instructions.
    - d) Source of supply.
    - e) Sizes, weights, speeds and operating capacities.
    - f) All electrical ratings, including temperature rating of terminals.
    - g) Conduit and wire connection sizes and locations.
    - h) All thermal ratings.
    - i) Statements of compliance with required standard and governing regulations.
    - j) Cooling requirements and makeup and/or ventilating air requirements.
    - k) Performance data, where applicable.
    - l) All sound ratings.
    - m) Other information needed to confirm compliance.
    - n) Manufacturers recommended parts list.
    - o) Other information required by Technical Sections.

- E. Certifications: Contractor shall submit with notarized execution.
- F. Test Reports: Submit notarized test reports signed and dated by firm performing test.
- G. Manufacturer's Product Warranties: Contractor shall submit product warranties in accordance with the technical sections. Where published warranty includes deviation from required warranty, product is disqualified from use on project, unless manufacturer issues a specific project warranty.
- H. Operating Instructions required
  - 1. Submit manufacturer's operating instructions for each item of electrical equipment.
  - 2. Submit supplement with additional project application instructions where necessary.
  - 3. Submit specific operating instructions for each electrical system that involves multiple items of equipment.
  - 4. Submit instructions for charging, start-up, control or sequencing of operation, phase or seasonal variations, shut-down, safety and similar operations.
  - 5. All operating instructions shall be typewritten in completely explained and easily understood English language.
- I. Maintenance Manual Requirements
  - 1. Provide emergency instructions including addresses and telephone numbers for service sources.
  - 2. Provide regular system maintenance procedures.
  - 3. Indicate proper use of tools and accessories.
  - 4. Provide wiring and control diagram for each system.
  - 5. Provide manufacturer's data for each operational item in each system.
  - 6. Provide manufacturer's product warranties, and guarantee relating to the system and equipment items in the system.
  - 7. Provide Final Shop and Erection drawings relating to the system.
  - 8. Bind each operating and maintenance manual in one or more vinyl-covered, 2" 3-ring binders, plus pocket-folders for folded drawings. Index with thumb tab collated with Table of Contents for sections. Mark the back spine and front cover of each binder with system identification and volume number.
- J. Maintenance Materials: Deliver all materials to the Owner in fully identified containers or packages suitable for storage. Obtain receipt for all delivered materials signed by the Owner's Representative.
- K. Guarantees: Where indicated as "Certified", provide guarantee which, in addition to execution by an authorized officer of each guarantor, is attested to by the Secretary of each guarantor and bears the corporate seal. Submit draft of each guarantee prior to execution.

END OF SECTION

## SECTION 16035

### GROUNDING

#### PART 1 - GENERAL

##### 1.1 SUMMARY

- A. Related Documents
  - 1. Drawings and general provisions of the contract, including General and Special Conditions and the requirements of Division 1 Specifications, apply to this section.
  - 2. The Contract Agreement, Bidding Documents, and all Addenda issued prior to Contract Agreement execution form a part of these specifications and apply to all Contracts or Subcontracts relating to the electrical systems.

##### 1.2 REFERENCES

- A. National Electrical Contractors Association (NECA)
  - 1. NECA SI - Standard of Installation.
- B. National Electrical Manufacturers Association (NEMA)
- C. National Fire Protection Association (NFPA)
  - 1. NFPA 70 - National Electrical Code.

#### PART 2 - PRODUCTS

##### 2.1 GROUNDING AND BONDING

- A. Grounding System Resistance: One Ohm or less per Design and Construction Standards.
- B. Rod Electrodes
  - 1. Material: Copper.
  - 2. Diameter: 5/8 inch.
  - 3. Length: 10 feet.
- C. Active Electrodes
  - 1. Description: Metallic-salt-filled copper-tube electrode.
  - 2. Shape: As required to pass test.
  - 3. Length: As required to pass test.
  - 4. Connector: U-bolt pressure plate.
- D. Mechanical Connectors: Bronze.
- E. Wire
  - 1. Material: Stranded Copper.
  - 2. Foundation Electrodes: size as indicated on plans, 30 feet in length.
  - 3. Grounding Electrode Conductor: Size to meet NFPA 70 requirements or as indicated on plans, which ever is greater.
- F. Grounding Well Components
  - 1. Well Pipe: 8 inch NPS by 24 inch long clay tile concrete pipe with belled end.
  - 2. Well Cover: Cast iron with legend "GROUND" embossed on cover.

## PART 3 - EXECUTION

### 3.1 INSTALLATION - Grounding and Bonding

- A. Install rod electrodes at locations indicated. Install additional rod electrodes as required to achieve specified resistance to ground.
- B. Provide grounding well pipe with cover at each rod location. Install well pipe top flush with finished grade or surface.
- C. Provide grounding electrode conductor and connect to reinforcing steel in foundation footing where indicated.
- D. Provide bonding and grounding in conformance with NFPA 70.
- E. Provide isolated grounding conductor for circuits supplying electronic cash registers, data systems, and communications systems.
- F. Equipment Grounding Conductor: Provide separate, insulated conductor within each feeder and branch circuit raceway. Terminate each end on suitable lug, bus, or bushing.
- G. Testing and Inspection
  - 1. Inspect and test in accordance with NETA ATS, except Section 4.
  - 2. Perform inspections and tests listed in NETA ATS, Section 7.13.

END OF SECTION

## SECTION 16040

### ELECTRICAL IDENTIFICATION

#### PART 1 - GENERAL

##### 1.1 DESCRIPTION OF WORK

- A. Provide and install required identification for the systems and equipment shown on the drawings and/or specified. The extent of identification is specified herein and in individual technical sections of work.
- B. Coordinate with Consultant and Owner for proper equipment identification nomenclature. Nameplates must be approved by Consultant prior to ordering and installation.
- C. Types of electrical identification include:
  - 1. Conduit labeling.
  - 2. Buried cable and conduit warnings.
  - 3. Cable/conductor identification.
  - 4. Operational instructions and warnings.
  - 5. Danger signs.
  - 6. Equipment/system identification labels and signs.
  - 7. Junction box labeling.

##### 1.2 RELATED WORK

- A. Painting of conduit and color coded painting of conduit if required. See Division 9.

##### 1.3 SUBMITTALS

- A. Manufacturer's Data
  - 1. Product specifications and installation instructions for each material and device.
- B. Samples
  - 1. Provide for each color, lettering style and other graphic representation.
- C. Labels
  - 1. Provide a list of labels with actual designations as they will be printed.

#### PART 2 - PRODUCTS

##### 2.1 ELECTRICAL IDENTIFICATION MATERIAL

Conform to ANSI A13.1, Table 3 for minimum size of legend letters and minimum length of color field for each raceway or cable size. Use colors prescribed by ANSI A13.7, NFPA 70 and these specifications.

- A. Color-Coded Conduit Markers
  - 1. Manufacturer's standard preprinted, flexible or semi-rigid, permanent, plastic-sheet conduit markers, extending 360 degrees around conduits. Attach with adhesive, adhesive lap joint of marker, matching adhesive plastic tape at each end of marker, or pre-tensioned snap-on. Lettering to indicate voltage, function of conductors in conduit and shall be 8" minimum length (i.e. ac power, dc power, fire alarm).
  - 2. Colors: Orange markers with black letters.
- B. Color-Coded Plastic Tape
  - 1. Manufacturer's standard self-adhesive vinyl tape, minimum 3 mils thick by 1-1/2" wide.
  - 2. Color: Orange.
- C. Underground Plastic Line Marker
  - 1. Manufacturer's standard permanent, bright-colored, continuous-printed plastic tape, for direct-burial service; minimum 6" wide x 4 mils thick. Printing to indicate type service of cable; with large (minimum 2-1/2") high letters.
  - 2. Color: Red with black lettering
- D. Cable/Conductor Identification Bands
  - 1. Manufacturer's standard vinyl self-adhesive self laminating cable/conductor markers, wrap-around type; pre-numbered plastic coated, or write-on type with clear plastic self-adhesive cover flap, lettered to show circuit identification. Similar to Panduit "Instacode" or accepted equivalent by T&B, or Tyton.
- E. Self-Adhesive Plastic Signs
  - 1. Manufacturer's standard, self-adhesive, pre-printed, flexible vinyl signs for operational instructions or warnings. Sizes suitable for application and visibility, with proper wording for application.
  - 2. Color: Orange or Yellow with black lettering.
- F. Danger Signs
  - 1. Manufacturer's standard "DANGER" signs, baked enamel finish on 20 gage steel; standard red, black and white graphics; 14" x 10" unless 10" x 7" is largest which can be applied, or where larger size is needed for visibility use recognized explanation wording (as examples: HIGH VOLTAGE, KEEP AWAY, BURIED CABLE, DO NOT TOUCH SWITCH, DANGER-STARTS AUTOMATICALLY).
  - 2.
- G. Engraved Signs (Nameplates)
  - 1. Use 1/8" thick melamine plastic laminate, complying with FS LP-387, sizes as indicated, engrave with standard letter style of sizes and wording indicated (1/4" letters minimum).
  - 2. Color: Black field with white letters for normal power service;  
Red field, white letters for emergency/standby service;  
Orange field, white letters for UPS service
  - 3. Fasteners: Self adhesive backing or double stick tape.
- H. Permanent Polyester Tape:

- purposes that are tapes adhere to all
1. Use Permanent Metalized Polyester Tapes for Industrial resistant to oil, solvents and chemicals, these durable surface.
  2. DYMO #18485, Black on Silver, 3/8" wide.
- I. Lettering and Graphics
3. Coordinate names, abbreviations and other designations used with those shown or specified. Provide numbers, lettering, and wording as indicated or required for identification and operation/maintenance.

## PART 3 - EXECUTION

### 3.1 APPLICATION AND INSTALLATION

#### A. General Installation Requirements

1. Install after completion of painting.
2. Comply with governing regulations and requests of governing authorities for identification of electrical work.

#### B. Conduit Identification

1. Use adhesive marking tape labels, Brother or Kroy labels 1" high x 12" long (min.), at 20 foot intervals to identify all conduits run exposed or located above accessible ceilings. Conduits located above non-accessible ceiling or in floors and walls shall be labeled within 3 feet of becoming accessible. Labels for multiple conduits shall be aligned. Use the following colors:
  - a. Above 600 Volts: Black letters on orange background indicating feeder identification and voltage. Feeders within walls: provide identification on wall surfaces directly external to the conduits. Alternate identification labels with "DANGER - HIGH VOLTAGE" warning signs of the same color.
  - b. 600 Volt and Below Normal: White letters on black background indicating feeder identification and voltage. Not required unless otherwise noted.
  - c. 600 Volt and Below Emergency: White or black letters on red background indicating feeder identification and voltage. Not required unless otherwise noted
  - d. 600 Volt and Below UPS: Black letters on yellow background indicating feeder identifications, circuit number and voltage. Not required unless otherwise noted
  - g. Ground: White or black letters on green background indicating "GROUND" and equipment and designation.
2. Where conduits enter or exit a panelboard, pull or junction box, switchboard, or other distribution equipment, conduit labels shall include circuit number in addition to feeder identification and voltage.
3. For overhead conduits, place identification such that it can be read standing on the floor below.

#### C. Underground Cable Identification

1. During back-filling of underground cable, install continuous underground marker, directly over buried line 6" to 8" below finished grade. Where multiple lines are buried in common trench not exceeding 24" width, install a single line marker. Install additional line markers for each

increment of 24" width, i.e., 36" wide trench - 2 markers; 54" wide trench, 3 markers. Install multiple markers evenly spaced.

2. Install line marker for every buried duct bank and/or conduits 3" diameter or larger.
- D. Danger Signs
1. Provide as required by codes.
- E. Engraved Plastic Laminated Signs
1. Install on each major unit of electrical equipment in the building. Provide single line of text, 1/4" high lettering on 1" high sign (1-1/2" high where 2 lines required). Matching terminology and numbering as indicated in contract documents.
  2. Provide signs for each unit of the following categories:
    - a. Electrical cabinets and enclosures: Indicate cabinet designation, voltage, phase and feeder origin.
    - b. Access panel/doors to electrical facilities: Indicate room name and use.
    - c. Feeder cables inside pull and junction boxes and inside all switchgear at terminals indicating source and destination: Fasten with nylon ties.
    - d. All equipment furnished in this Division of the specifications: Indicate equipment designation, voltage, phase and feeder origin.
- F. Install signs where indicated or most visible. Secure with at least two cadmium-plated screws. Where substrate cannot receive screws, use industrial epoxy cement to secure signs. Self-adhesive or double stick tape is acceptable. Secure with cadmium plated screws on porous surfaces.
- G. Junction, Pull and Connection boxes. Identification of systems and circuits shall indicate system voltage and identity of contained circuits on outside of box cover. Color code shall be same as conduits for pressure sensitive labels. Use self-adhesive marking tape labels at exposed locations and indelible black marker at concealed boxes. All fire alarm boxes shall have covers painted red. All temperature control boxes shall have covers painted blue.
- H. Branch Circuit Conductors shall be identified in each junction box and pull box with wire markers as manufactured by T & B, Panduit, 3M or Ideal to indicate panel/circuit number.
- I. Junction Boxes in branch circuit wiring shall be labeled with panel and circuit numbers. Junction boxes for special systems shall be labeled with system name and other identification as directed; for example, "fire alarm-zone 1". Where boxes are installed flush mounted in finished areas or surface mounted in unfinished areas, labeling shall be with engraved plastic nameplate as specified herein. Where boxes are installed above accessible ceilings, labeling may be neat hand written lettering with indelible marker.

END OF SECTION

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## SECTION 16110

### RACEWAYS

#### PART 1 - GENERAL

##### 1.1 DESCRIPTION OF WORK

- A. Installation of raceway systems for all work in Division 16 including required fittings and supports.
- B. All conductors above slab shall be installed in metallic conduit. Each length of conduit shall bear the manufacturers trademark or stamping indicating size.

##### 1.2 RELATED WORK

- A. Section 16130: Outlet boxes, Junction Boxes, Wiring Bodies and Wiring Gutters.

##### 1.3 SUBMITTALS

- A. Product data for fittings and conduit.

#### PART 2 - PRODUCTS

##### 2.1 RIGID METAL GALVANIZED STEEL CONDUIT (RMC)

- A. (RMC) to conform to Federal Specification WW-C-581E, NEC Article 346, ANSI Standard C80.1 and U.L. Standard No. 6 for rigid metallic conduit, except hot dipped galvanized after threading. Minimum size concealed in concrete or below grade shall be 3/4". Minimum size shall be 1/2 inch.
- B. Acceptable RMC Manufacturers
  - 1. Allied Tube and Conduit Corporation
  - 2. LTV Steel Tubular Productions Co.
  - 3. Midwest Electric-Cooper Industries
  - 4. Wheatland Tube Company
  - 5. Western Tube and Conduit Corp.
  - 6. Triangle Wire and Cable Inc.
- C. Fittings, ells, couplings, etc., galvanized threaded type meeting above standards. Threadless fittings shall not be used.
- D. Terminate rigid conduit in dry locations with two steel locknuts, one inside, one outside of the cabinet, junction box or outlet box and an insulated bushing. Bushings shall be malleable iron or steel with smooth insulating ring molded into edge of bushing to prevent damage to cable. Insulated bushings shall be 150 degree C self-extinguishing thermoplastic. Provide grounding bushings on 1 1/2" conduit and larger. Construction of bushings shall be similar to steel bushings described above except provide lugs for grounding connection.
- E. Acceptable Bushing Manufacturers
  - 1. Appleton
  - 2. Thomas & Betts
  - 3. OZ/Gedney
  - 4. Midwest
  - 5. Steel City
- F. Where conduits are installed underground, the threaded joints shall be sealed with a conductive joint sealing compound.
  - 1. Deliver conduit with thread protectors.

##### 2.2 RIGID INTERMEDIATE GRADE CONDUIT (IMC)

- A. IMC to conform to Federal Specification WWC-581 and NEC 345, UL Standard No. 1242; hot dipped galvanized or accepted equivalent. Minimum size shall be 1/2 inch.
- B. Acceptable IMC Manufacturers
  - 1. Allied Tube and Conduit Corporation
  - 2. Triangle Wire and Cable Incorporation
  - 3. ETP - Berger Industries
  - 4. Western Tube and Conduit Corporation
  - 5. LTV Steel Tubular Products Company
  - 6. Wheatland Tube Company
- C. All fittings, ells, couplings, etc., constructed to same standards as rigid steel conduit. Fittings - threaded type with all threads engaged.
- D. Conduit terminations same as rigid steel conduit.

### 2.3 FLEXIBLE STEEL CONDUIT

- A. "Greenfield", continuous spirally wound and inter-locked, threadless, galvanized steel conforming to U.L. Standard No. 1, NEC 357, and CSA Standards for flexible steel conduit. Finish shall be zinc-coated steel.
- B. Acceptable Flexible Steel Conduit Manufacturers
  - 1. Anaconda Metal Hose
  - 2. Midwest Conduit and Cable Company
  - 3. Electri Flex Company
  - 4. MWS Incorporation
  - 5. International Metal Hose Company
  - 6. Steelflex Electro Corporation
- C. Connectors and fittings galvanized steel, threadless type with insulated throats, U.L. approved for grounding means.
- D. Acceptable Connector Manufacturers
  - 1. Thomas & Betts Corporation
  - 2. Steel City-Midland Ross
  - 3. Midwest-Cooper Industries
  - 4. ETP-Berger Industries
  - 5. Appleton Electric Company
  - 6. Raco Incorporation

### 2.4 LIQUID TIGHT FLEXIBLE STEEL CONDUIT

- A. Constructed similar to flexible steel conduit above, except with polyvinyl chloride jacket and conforming to UL Standard 360.
- B. Acceptable Liquid Tight Flexible Conduit Manufacturers
  - 1. Anaconda Metal Hose Company
  - 2. Electri-Flex Company
  - 3. International Metal Hose Company
- C. Fitting Assembly - sealing type, with steel gland, nylon ring and ground cone inside locknut. All fittings with insulated throat, U.L. approved for grounding means.
- D. Acceptable Fitting Manufacturers

1. Thomas & Betts Corporation
2. Raco
3. Midwest
4. Steel City
5. Appleton Electric Company
6. ETP-Berger Industries

## 2.5 PLASTIC CONDUIT, PVC

- A. Polyvinyl chloride compound, rated for direct burial, ultraviolet resistant, and conforming to UL Standard 651, NEC 347, Federal Specification W-C-1094A, Schedule 40. Minimum size shall be  $\frac{3}{4}$ " diameter.
  1. Acceptable PVC Conduit manufactured by
    - a) Carlon
    - b) Queen City Plastics
    - c) Certainteed Corporation
    - d) Pacific Western Extruded Plastics
    - e) Georgia Pipe Company
    - f) Hubbell Incorporation
    - g) Cantex Incorporation
    - h) Triangle
  2. Fittings same material as conduit and installed with watertight joint compound recommended by manufacturer.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Coordinate layout and installation of raceway systems with other construction elements to ensure adequate headroom, working clearance, and access. All conduit shall be concealed including in block walls.
- B. Use rigid steel conduit (threaded only) for
  1. All medium voltage feeders. Medium Voltage feeders located underground outside the building may be PVC encased in concrete per the Electrical Site Plan.
  2. Circuits run underground where indicated on plans. (Paint with asphaltum)
  3. 90 degree elbows up through concrete slab and to transitions above grade.
  4. Circuits in hazardous locations.
  5. Circuits exposed to physical damage and heavy moisture both indoors and outdoors.
  6. Sleeves.
  7. All motor circuits where subject to physical damage or below 10' AFF.
  8. Service entrance conduits installed exposed or concealed in walls or above ceilings.
- C. Intermediate grade metal conduit, (threaded only), may be used in lieu of rigid steel conduit where allowed by NEC.
- D. Use flexible conduit, "greenfield" for
  1. Connection to vibrating equipment in dry locations between rigid conduit and connection box on equipment.

2. Final connections to equipment in dry locations.
  3. Final connections to equipment requiring adjustments.
  4. Final connections to recessed lighting fixtures from conduit system.
  5. Connection to distribution transformers.
  6. Connection to bus duct plug-in switches.
  7. Maximum length 6'.
- E. Use Liquidtight flexible conduit in damp or wet locations for same circuit categories listed for flexible conduit above. Engineer will determine "damp or wet" locations if questionable.
- F. Use Electrical Metallic Tubing, EMT, for
1. Branch circuits in dry non-corrosive, non-hazardous locations.
  2. Telephone circuits.
  3. Auxiliary systems and controls.
  4. EMT shall not be used for service feeders from the power company equipment to main switchboards or from standby AC plants to generator distribution equipment.
  5. EMT shall not be installed underground and shall not be encased in concrete.
- G. Use PVC conduit for
1. Individual ground wires where under slab.
  2. Exterior underground branch circuits.
  3. Exterior underground feeders.
  4. Exterior underground signal and communication systems.
  5. Sleeves.
  6. In base material for slab on grade conditions.
  7. In block and formed concrete construction.
  8. In chlorine rooms.
  9. For lightning protection down conductors concealed in wall.
  10. Where specifically shown on drawings.
- H. Comply with NEC for minimum size conduit and installation requirements. Minimum size 1/2" diameter for branch circuits, minimum size 3/4" diameter for homeruns. Minimum size for PVC conduit shall be 3/4" in diameter. Conduits shall be installed complete end-to-end prior to installing conductors.
- I. Run conduit concealed where possible. Run concealed conduit above dropped or furred ceiling in an orderly manner. Multiple conduits shall be grouped and run parallel. Run all conduit tight against structure where possible. Conduit shall be run parallel or at right angles to walls, ceilings, and structural members. Do not attach conduits to ceiling suspension system channels or suspension

- wires. Conduit must be installed high enough above lay in ceiling to permit removal of ceiling panels and light fixtures.
- J. Paint conduit threads exposed to moisture with exterior grade, rust preventive silver paint after installation.
  - K. Furnish offsets required to meet field conditions. Make bends in conduit in accordance with the National Electrical Code, except make minimum radius of 6 times conduit diameter or 6" whichever is greater. Bend IMC conduit without deforming. Do not exceed 270° total bends in any conduit run without pullbox or acceptable conduit body.
  - L. Empty conduits, shall be equipped with nylon cords with blocks attached at both ends to facilitate future pulling of wires.
  - M. Make connections to equipment away from wall with rigid or IMC conduit extensions exposed from ceiling to floor, anchored with floor flange and/or angle frame as required. Make connections to equipment with flexible conduit from tee conduit body in conduit riser.
  - N. Vibrating equipment and equipment requiring adjustment, i.e.: motors, transformers, etc: make final connections with liquid-tight flexible metal conduit.
  - O. Isolate conduit connections to equipment on roof from roof penetration of conduit with short section of liquid-tight flexible conduit between roof penetration and equipment to prevent leak in roof penetration due to equipment vibration.
  - P. Use liquid-tight flexible conduit where exposed to moisture, oil, etc.
  - Q. Install conduit to avoid hot water pipes. Maintain 9" clearance of such pipes, unless closer crossings are unavoidable. Maintain minimum 3" clearance from covering of pipe crossed.
  - R. Support EMT within twelve inches of each outlet, junction box, cabinet or fitting and every eight-foot there after. Combination box/conduit hangers are not allowed.
    - 1. Acceptable Individual conduit hanger manufacturers
      - a) Appleton
      - b) Minerallac
      - c) OZ Mfr. Co.
      - d) Erico-Products
      - e) Steel City
      - f) Thomas & Betts
  - S. Support for multiple conduit runs shall consist of trapeze type hangers as required. Galvanized bolts or rods shall be 1/2" minimum diameter and anchored to structure. Provide support system clamp for each conduit on hangers. Support systems shall utilize 1-5/8" x 1-5/8" x 12 gage multi-purpose steel channels, complete with all necessary hardware, clamps, etc. all channel hardware shall be galvanized and/or plated to prevent corrosion. Channel sizes and quantity, and number of support rods shall be increased to support increased weights. Design each assembly to carry the combined weight of conduit and wire, assembly itself plus 100 pounds. Provide space for 25 percent additional conduit of the same size. See Section 16010 for anchor requirements.
    - 1. Acceptable Manufacturers of channel support Systems
      - a) B-Line
      - b) Kindorf
      - c) Superstrut
      - d) Unistrut
  - T. Terminate rigid steel and IMC conduits entering sheet metal boxes with double locknuts and bushings. Terminate EMT conduits entering boxes with steel connector and single locknut. Terminate all conduits exposed to moisture with watertight hubs designed for particular type conduit used on all sides of box.

- U. Where ground conductor installed in conduits, 3" and larger, provide grounding bushings, and bond full size ground wire to bushings, and from bushing to box or cabinet. Bond with bolt, nut, lock washer, and appropriate lug. Where ground wires are run in smaller conduits, provide non-grounding bushing and bond to outlet and junction boxes with bolt, nut, lock washer and appropriate lug. Provide all service entrance raceways with grounding bushing and bond to ground bus with conductor sized per Table 250-66 of N.E.C.
- V. Conduit work in hazardous areas, or areas with large temperature differential: Use rigid steel or IMC conduit with conduit seal fittings, poured with hardening compound after conductors are pulled-in conduit. Seals shall be installed per NEC.
  - 1. Acceptable seal manufacturers
  - 2. Crouse-Hinds
  - 3. Appleton
  - 4. Killark
  - 5. OZ/Gedney
- W. PVC Conduit Installation
  - 1. Above ground: Allow for expansion and contraction.
  - 2. Below grade: Encase in 3" sand fill. Backfill free of large rocks and debris unless noted otherwise on drawings.
  - 3. Make elbows, bends, etc., with heated bender when factory bends are not available.
  - 4. Make cuts with hacksaw and deburr ends.
  - 5. Make joints as follows
    - a) Clean outside of conduit to depth of socket, and inside of socket with PVC cleaner. Apply solvent cement to interior of socket and exterior of conduit, Insert conduit in socket and rotate 1/4 to 1/2 turn and allow to dry.
  - 6. For all power wiring, install insulated ground wire, sized per NEC table 250-122 unless shown larger.
- X. Identify all major underground conduit and duct bank runs. See Section 16040.
- Y. Identify all exposed electrical feeder conduits 2" and larger. See Section 16040.
- Z. Where PVC conduit is used for individual ground conductor, do not use metallic supports that completely encircle conduit.
- XX. After installation of all conductors in underground conduits, seal both ends of conduit with non-hardening inert compound similar to "Duxseal". Cap all spare conduits with manufactured conduit caps made for the purpose.
- YY. Do not install conduit under boiler pads or other heavy equipment such as compressors or chillers.

### 3.2 CLEANING

- A. Upon completion of installation of system, including outlet fittings and devices, inspect exposed finish. Remove burrs, dirt, and construction debris and repair damaged finish, including chips, scratches and abrasions.

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SECTION 16120

CONDUCTORS (LOW VOLTAGE, 600 VOLTS)

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

- A. Furnish and install 600 volt conductors and associated splices, connectors and terminations for lighting, power, and auxiliary systems.

1.2 STANDARDS

- ICEM S-68-516
- NEMA WC-8
- UL No. 44, 83 and 854
- NEC Article 310
- NEMA WC-3
- NEMA WC-5
- NEMA WC-7
- NEMA WC-26

1.3 PREINSTALLATION MEETING

Preinstallation (or Preconstruction) Conference: Conduct conference at Project site to comply with requirements of Division 1, Section 01310 "Project Management and Coordination" (coordination with telecommunications system).

PART 2 - PRODUCTS

2.1 CONDUCTORS

- A. 98% conductivity copper; lighting and receptacle circuits shall be minimum #12 AWG(American Wire Gauge) minimum. Conductors shall be solid for #10 AWG and smaller and stranded for #8 or larger. All power and control wiring shall be ASTM Class B stranded.
- B. Conductors furnished with NEC, 600 volt, insulation as follows:

Dry locations:	#10 AWG and smaller - type THW-2, THWN-2, THHN-2 or XHHW-2 (do not intermix in circuits)
	# 8 AWG and larger -type RHH-2/RHW-2/USE, (cross linked polyethylene) THWN-2 or XHHW-2
Wet locations:	#10 AWG and smaller - type XHHW-2
	#8 AWG and larger - type RHH-2/RHW-2/USE (cross linked polyethylene) type XHHW-2

- C. Voltage rating, manufacturer, type and conductor AWG size indication shall be continuously factory-applied the entire length of each conductor. Minimally, the cable shall be marked in accordance with the NEC and any other local codes.
- D. All instrument cable shall consist of twisted shielded pair or triads. The shield shall be aluminum mylar with a stranded copper drain wire. Control cable insulation shall be XHHW-2 or THHN-2.
- E. Cables installed in a cable tray shall be UL listed for tray installation. Tray cable insulation shall be XHHW-2 or RHH-2/RHW-2/USE, and rated CT or TC by NEC.
- F. Minimum conductor size for power circuits shall be #12 AWG; wiring for controls and auxiliary systems shall be stranded #14 AWG minimum, except that current transformer leads shall be #10 AWG; minimum conductor size for distributed control and security systems shall be #16 AWG.

- G. Color Code as follows and/or per local ordinances. Conductors #10 AWG and smaller with colored insulation. Conductors #8 AWG and larger not available in colors, color coded with colored pressure sensitive tape. Apply minimum 2" of tape to each individual phase or neutral conductor in half lapped pattern. Conductors shall be identified with color coded tape at all locations accessible including all splices and terminations. The equipment ground conductor shall be taped green for its entire exposed length. Color-code as follows:

Phase	120/208 Volts	277/480 Volts	Isolated Ground
A	Black	Brown	Contrasting Stripe
B	Red	Orange	Contrasting Stripe
C	Blue	Yellow	Contrasting Stripe
Neutral	White	Gray	Contrasting Stripe
Equip. Ground	Green	Green	Contrasting Stripe

- H. If an existing color code is already consistently established in the facility, all color coding of new conductors shall match the existing color code, if approved by the local authorities.

- I. Acceptable Manufacturers of copper conductors

1. Pirelli
2. Phelps Dodge
3. Okonite
4. Capital Cable
5. Triangle
6. Rome
7. General Cable
8. Southwire
9. Cablec
10. Essex

## 2.2 ARMOR CABLE (AC) SYSTEM

- A. Type AC cable may not be used on this project.

## 2.3 CONNECTORS AND SPLICES

- A. Provide UL-listed factory-fabricated wiring connectors of size, ampacity rating, material, type and class for application and for service indicated. Select connectors to comply with Project's installation requirements and as specified in Part 3 "Applications" of this Article.

- B. For Conductors #10 AWG and Smaller: Wire and cable connectors shall be solderless, twist on, 600 volts, 105°C., shall comply with UL 486A/C standards. Connectors coded for easy selection compatible with wiring to be spliced. Install connectors as recommended by manufacturer. Use proper crimping tool where crimp sleeves are used.

1. Acceptable Connector Manufacturers

- a) 3M- "Scotchlock"
- b) Buchanan - "B Cap"
- c) Thomas & Betts - "Stak-On"
- d) Ideal - "Wing Nuts"

- C. Compression Splices: Splice conductors #8 and larger with solid copper barrel, type fittings applied with an appropriate hydraulic tool. Splices used only where approved. Splice fittings: Burndy "Hydent". Insulate splices with 600 volt, 105°C, "heat shrink", "cold shrink" covers, or taped insulation consisting of rubber, friction and vinyl tapes applied per manufacturer for 600 volt, 105°C covering.

1. Acceptable Splice and Tape Manufacturers
- a) Burndy

- b) Thomas & Betts
  - c) IlSCO
  - d) Anderson
  - e) Blackburn
  - f) Oz/Gedney
- D. Connectors and/or Terminations for Conductors #6 AWG and larger: Tin plated, 98% copper, dual crimp long barrel compression lugs with two bolt holes, insulated with molded covers to accommodate 1/2" bolts. Apply with hydraulic tool recommended by manufacturer.
- 1. Acceptable Manufacturers and Products
    - a) O-Z Gedney
    - b) Burndy Engineering Company "Hylugs"
    - c) Thomas and Betts, "Color Keyed"
    - d) Anderson
- E. Use pulling lubricant which will not be detrimental to insulation of conductors indicated by published user information.
- 1. Acceptable Manufacturers of Lubricant
    - a) Ideal Industries
    - b) Panduit Corp.
    - c) OZ/Gedney
    - d) Plymouth/Bishop
    - e) American Polywater Corp.
    - f) Thomas & Betts
- F. Insulate all live joints to 600 volts with strip rubber, friction tape, and electrical vinyl tape installed in accordance with manufacturers recommendations.
- 1. Acceptable Tape Manufacturers
    - a) 3M
    - b) Plymouth

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Install wiring complete with connections to equipment.
- B. Install wiring so conductors are not in tension in completed system.
- C. Form wiring neatly and group in circuit. Tie grouped conductors with nylon ties, T&B "Tyrap" or approved equivalent.
- D. Each conduit run shall be run complete end to end before conductors are installed.
- E. Use pulling lubricant to decrease pulling tension for all feeder cables, and all difficult cable pulls of any type or size. Pull all conductors into raceway at the same time.
- F. Provide cable supports, at locations required by NEC and/or as shown. Supports with malleable screwed conduit fitting and non-conductive wedges drilled for the size conductors installed. Provide supports rated for all types of insulation and all voltage. Cable supports shall be O.Z./Gedney type "R" or accepted equivalent. Furnish pullbox, sized per NEC for each cable support.
- G. Bond circuit ground wires where installed to all devices, equipment, outlet and junction boxes, and grounding bushings (where provided) with a full size conductor and lugged type connection.
- H. Securely fasten non-ferrous identifying tapes, pressure sensitive labels or engraved nameplates to all cables, feeders and power cables exposed in vaults, inside pull boxes, exposed in manholes, exposed in switchboard, termination compartments, etc. See Section 16040 for nameplates and labels.
- I. Join and terminate copper conductors individually. Do not mix voltages in the same raceway.

- J. Provide lugs where not furnished as part of equipment - furnish as specified above, to connect all conductors.
- K. Mark all branch circuit conductors at panel terminations including neutrals with pressure sensitive numbers to correspond to circuit numbers connected. See Section 16040 for labels.
- L. Connect circuits and feeders as shown on drawings. Drawings are diagrammatic and do not show every detail required in the wiring system. Detail wiring accomplished per NEC.
- M. All conductors making up parallel feeders to be same size, same type, and same insulation, all cut same length. Bond each group of conductors making up a phase or neutral at both ends in an approved manner. Parallel conductors shall not be run in the same raceway.
- N. DO NOT COMBINE CIRCUITS into more than three circuits per homerun unless specifically approved by the Consultant.
- O. Neutral conductors shall not be used for equipment grounding.
- P. Provide a separate neutral and grounding conductor for all GFI circuits or GFI devices to ensure an adequate ground-fault return path.
- Q. Use #10 AWG for all 20 amp, 120 volt homerun circuits that exceed 75 feet from center of load and 150 feet for 277 volt circuits.

END OF SECTION

## SECTION 16128

### RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS

#### PART 1 - GENERAL

##### 1.1 SUMMARY

- A. Section includes conduit and tubing, surface raceways, wire ways, outlet boxes, pull and junction boxes, and handholes.
- B. Related Sections:
  - 1. Section 16150 - Equipment Wiring Connections.
  - 2. Section 16060 - Grounding and Bonding for Electrical Systems.
  - 3. Section 16075- Identification for Electrical Systems.
  - 4. Section 16131 - Electrical Cabinets and Enclosures.
  - 5. Section 16140 - Wiring Devices.

##### 1.2 REFERENCES

- A. American National Standards Institute:
  - 1. ANSI C80.1 - Rigid Steel Conduit, Zinc Coated.
  - 2. ANSI C80.3 - Specification for Electrical Metallic Tubing, Zinc Coated.
- B. ANSI C80.5 - Aluminum Rigid Conduit - (ARC). Electrical Manufacturers Association:
  - 1. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum).
  - 2. NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit and Cable Assemblies.
  - 3. NEMA OS 1 - Sheet Steel Outlet Boxes, Device Boxes, Covers, and Box Supports.
  - 4. NEMA OS 2 - Nonmetallic Outlet Boxes, Device Boxes, Covers, and Box Supports.
  - 5. NEMA RN 1 - Polyvinyl Chloride (PVC) Externally Coated Galvanized Rigid Steel Conduit and Intermediate Metal Conduit.
  - 6. NEMA TC 2 - Electrical Polyvinyl Chloride (PVC) Tubing and Conduit.
  - 7. NEMA TC 3 - PVC Fittings for Use with Rigid PVC Conduit and Tubing.

##### 1.3 SYSTEM DESCRIPTION

- A. Raceway and boxes located as indicated on Drawings, and at other locations required for splices, taps, wire pulling, equipment connections, and compliance with regulatory requirements. Raceway and boxes are shown in approximate locations unless dimensioned. Provide raceway to complete wiring system.
- B. Underground More than 5 feet outside Foundation Wall: Provide thickwall nonmetallic conduit. Provide precast concrete boxes or nonmetallic handhole.

- C. Underground Within 5 feet from Foundation Wall: Provide thickwall nonmetallic conduit. Provide precast concrete boxes or nonmetallic boxes.
- D. Under Slab on Grade: Provide thickwall nonmetallic conduit. Provide cast metal or nonmetallic boxes.
- E. Outdoor Locations, Above Grade: Provide rigid steel conduit and electrical metallic tubing. Provide cast metal or nonmetallic outlet, pull, and junction boxes.
- F. Wet and Damp Locations: Provide rigid steel conduit and electrical metallic tubing. Provide cast metal or nonmetallic outlet, junction, and pull boxes. Provide flush mounting outlet box in finished areas.
- G. Concealed Dry Locations: Provide electrical metallic tubing. Provide sheet-metal boxes. Provide flush mounting outlet box in finished areas. Provide hinged enclosure for large pull boxes.
- H. Exposed Dry Locations: Provide rigid steel conduit and electrical metallic tubing. Provide sheet-metal boxes. Provide flush mounting outlet box in finished areas. Provide hinged enclosure for large pull boxes.

#### 1.4 DESIGN REQUIREMENTS

- A. Minimum Raceway Size: 1/2 inch unless otherwise specified.

#### 1.5 SUBMITTALS

- A. General Conditions: Submittal procedures.
- B. Product Data: Submit for the following:
  - 1. Flexible metal conduit.
  - 2. Liquidtight flexible metal conduit.
  - 3. Nonmetallic conduit.
  - 4. Flexible nonmetallic conduit.
  - 5. Raceway fittings.
  - 6. Conduit bodies.
  - 7. Surface raceway.
  - 8. Pull and junction boxes.
  - 9. Handholes.
- C. Manufacturer's Installation Instructions: Submit application conditions and limitations of use stipulated by Product testing agency specified under Regulatory Requirements. Include instructions for storage, handling, protection, examination, preparation, and installation of Product.

#### 1.6 CLOSEOUT SUBMITTALS

- A. General Conditions: Closeout procedures.
- B. Project Record Documents:

1. Record actual routing of conduits larger than 2 inch. Record actual locations and mounting heights of outlet, pull, and junction boxes.

#### 1.7 DELIVERY, STORAGE, AND HANDLING

- A. General Conditions: Product storage and handling requirements.
- B. Protect conduit from corrosion and entrance of debris by storing above grade. Provide appropriate covering.
- C. Protect PVC conduit from sunlight.

#### 1.8 COORDINATION

- A. General Conditions: Coordination and project conditions.
- B. Coordinate installation of outlet boxes for equipment connected under Section 16150 Equipment Wiring Connections.
- C. Coordinate mounting heights, orientation and locations of outlets mounted above counters, benches, and backsplashes.

### PART 2 - PRODUCTS

#### 2.1 METAL CONDUIT

- A. Rigid Steel Conduit: ANSI C80.1.
- B. Intermediate Metal Conduit (IMC): Rigid steel.
- C. Fittings and Conduit Bodies: NEMA FB 1; all steel fittings.

#### 2.2 PVC COATED METAL CONDUIT

- A. Product Description: NEMA RN 1; rigid steel conduit with external PVC coating, 40 mil thick.
- B. Fittings and Conduit Bodies: NEMA FB 1; steel fittings with external PVC coating to match conduit.

#### 2.3 FLEXIBLE METAL CONDUIT

- A. Product Description: Interlocked steel construction.
- B. Fittings: NEMA FB 1.

#### 2.4 LIQUIDTIGHT FLEXIBLE METAL CONDUIT

- A. Product Description: Interlocked steel construction with PVC jacket.
- B. Fittings: NEMA FB 1.

## 2.5 ELECTRICAL METALLIC TUBING (EMT)

- A. Product Description: ANSI C80.3; galvanized tubing.
- B. Fittings and Conduit Bodies: NEMA FB 1; steel, compression or set screw type.

## 2.6 NONMETALLIC CONDUIT

- A. Product Description: NEMA TC 2; Schedule 40 PVC.
- B. Fittings and Conduit Bodies: NEMA TC 3.

## 2.7 SURFACE METAL RACEWAY

- A. Product Description: Sheet metal channel with fitted cover, suitable for use as surface metal raceway.
- B. Fittings, Boxes, and Extension Rings: Furnish manufacturer's standard accessories; match finish on raceway.

## 2.8 OUTLET BOXES

- A. Sheet Metal Outlet Boxes: NEMA OS 1, galvanized steel.
  - 1. Luminaire and Equipment Supporting Boxes: Rated for weight of equipment supported; furnish 1/2 inch (13 mm) male fixture studs where required.
- B. Cast Boxes: NEMA FB 1, Type FD, cast ferrous alloy. Furnish gasketed cover by box manufacturer.
- C. Wall Plates for Finished Areas: As specified in Section 16140 Wiring Devices.
- D. Wall Plates for Unfinished Areas: As specified in Section 16140 Wiring Devices.

## 2.9 PULL AND JUNCTION BOXES

- A. Sheet Metal Boxes: NEMA OS 1, galvanized steel.
- B. Hinged Enclosures: As specified in Section 16131 Electrical Cabinets and Enclosures.
- C. Surface Mounted Cast Metal Box: NEMA 250, Type 4; flat-flanged, surface mounted junction box:
  - 1. Material: Galvanized cast iron.
  - 2. Cover: Furnish with ground flange, neoprene gasket, and stainless steel cover screws.
- D. In-Ground Pre-Cast Concrete Box: recessed cover box for flush mounting:
  - 1. Material: Pre-Cast Concrete.
  - 2. Cover: Provide traffic rated in areas of vehicle travel. Provide pre-cast concrete in landscape and pedestrian travel areas.
  - 3. Cover Legend: "ELECTRIC" or "COMMUNICATION" depending on use.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. General Conditions: Coordination and project conditions.
- B. Verify outlet locations and routing and termination locations of raceway prior to rough-in.

### 3.2 INSTALLATION

- A. Ground and bond raceway and boxes in accordance with Section 16060 Grounding and Bonding for Electrical Systems.
- B. Fasten raceway and box supports to structure and finishes in accordance with Section 16070 Hangers and Supports for Electrical Systems.
- C. Identify raceway and boxes in accordance with Section 16075 Identification for Electrical Systems.
- D. Arrange raceway and boxes to maintain headroom and present neat appearance.

### 3.3 INSTALLATION - RACEWAY

- A. Raceway routing is shown in approximate locations unless dimensioned. Route to complete wiring system.
- B. Arrange raceway supports to prevent misalignment during wiring installation.
- C. Support raceway using coated steel or malleable iron straps, lay-in adjustable hangers, clevis hangers, and split hangers.
- D. Group related raceway; support using conduit rack. Construct rack using steel channel specified in Section 16070 Hangers and Supports for Electrical Systems; provide space on each for 25 percent additional raceways.
- E. Do not support raceway with wire or perforated pipe straps. Remove wire used for temporary supports
- F. Do not attach raceway to ceiling support wires or other piping systems.
- G. Route raceway installed above accessible ceilings parallel and perpendicular to walls.
- H. Route conduit in and under slab from point-to-point.
- I. Maintain 12 inch (300 mm) clearance between raceway and surfaces with temperatures exceeding 104 degrees F (40 degrees C).
- J. Cut conduit square using saw or pipe cutter; de-burr cut ends.
- K. Bring conduit to shoulder of fittings; fasten securely.
- L. Join nonmetallic conduit using cement as recommended by manufacturer. Wipe nonmetallic conduit dry and clean before joining. Apply full even coat of cement to entire area inserted in fitting. Allow joint to cure for minimum 20 minutes.
- M. Install conduit hubs or sealing locknuts to fasten conduit to sheet metal boxes in damp and wet locations and to cast boxes.

- N. Install no more than equivalent of three 90 degree bends between boxes. Install conduit bodies to make sharp changes in direction, as around beams. Install factory elbows for bends in metal conduit larger than 2 inch (50 mm) size.
- O. Avoid moisture traps; install junction box with drain fitting at low points in conduit system.
- P. Install fittings to accommodate expansion and deflection where raceway crosses seismic, control and expansion joints.
- Q. Install suitable pull string or cord in each empty raceway except sleeves and nipples.
- R. Install suitable caps to protect installed conduit against entrance of dirt and moisture.
- S. Surface Raceway: Install flat-head screws, clips, and straps to fasten raceway channel to surfaces; mount plumb and level. Install insulating bushings and inserts at connections to outlets and corner fittings.
- T. Close ends and unused openings in wireway.
- U. Exterior buried conduit shall be scheduled 40 PVC with PVC coated RGS 90 degree bands when penetrating through floor slabs.
- V. FMC shall be used for final connection to lighting fixtures not to exceed 72 inches. FNC of aluminum FMC shall not be used FMC shall not be used except as noted above without prior approval of the engineer.
- W. Liquid-tite FMC shall be used for final connection to motors.
- X. MC shall not be used.

#### 3.4 INSTALLATION - BOXES

- A. Install wall mounted boxes at elevations to accommodate mounting heights as indicated on Drawings.
- B. Adjust box location up to 10 feet prior to rough-in to accommodate intended purpose.
- C. Orient boxes to accommodate wiring devices oriented as specified in Section 16140 Wiring Devices.
- D. Install pull boxes and junction boxes above accessible ceilings and in unfinished areas only.
- E. In Accessible Ceiling Areas: Install outlet and junction boxes no more than 6 inches (150 mm) from ceiling access panel or from removable recessed luminaire.
- F. Locate flush mounting box in masonry wall to require cutting of masonry unit corner only. Coordinate masonry cutting to achieve neat opening.
- G. Do not install flush mounting box back-to-back in walls; install with minimum 6 inches (150 mm) separation. Install with minimum 24 inches (600 mm) separation in rated walls.
- H. Secure flush mounting box to interior wall and partition studs. Accurately position to allow for surface finish thickness.
- I. Install stamped steel bridges to fasten flush mounting outlet box between studs.
- J. Install flush mounting box without damaging wall insulation or reducing its effectiveness.
- K. Install adjustable steel channel fasteners for hung ceiling outlet box.

- L. Do not fasten boxes to ceiling support wires or other piping systems.
- M. Support boxes independently of conduit.
- N. Install gang box where more than one device is mounted together. Do not use sectional box.
- O. Install gang box with plaster ring for single device outlets.

### 3.5 INTERFACE WITH OTHER PRODUCTS

- A. Install conduit to preserve fire resistance rating of partitions and other elements, using materials and methods specified.
- B. Route conduit through roof openings for piping and ductwork or through suitable roof jack with pitch pocket. Coordinate location with roofing installation specified.
- C. Locate outlet boxes to allow luminaires positioned as indicated on Drawings.
- D. Align adjacent wall mounted outlet boxes for switches, thermostats, and similar devices.

### 3.6 ADJUSTING

- A. General Conditions: Testing, adjusting, and balancing.
- B. Adjust flush-mounting outlets to make front flush with finished wall material.
- C. Install knockout closures in unused openings in boxes.

### 3.7 CLEANING

- A. General Conditions: Final cleaning.
- B. Clean interior of boxes to remove dust, debris, and other material.
- C. Clean exposed surfaces and restore finish.

END OF SECTION

## SECTION 16131

### ELECTRICAL CABINETS AND ENCLOSURES

#### PART 1 - GENERAL

##### 1.1 SUMMARY

- D. Section includes hinged cover enclosures, cabinets, terminal blocks, and accessories.
- E. Related Sections:
  - 1. Section 16060 - Grounding and Bonding for Electrical Systems.
  - 2. Section 16128 - Raceway and Boxes for Electrical Systems.

##### 1.2 REFERENCES

- F. National Electrical Manufacturers Association:
  - 1. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum).
  - 2. NEMA ICS 4 - Industrial Control and Systems: Terminal Blocks.

##### 1.3 SUBMITTALS

- G. General Conditions: Submittal procedures.
- H. Product Data: Submit manufacturer's standard data for enclosures, cabinets, and terminal blocks.
- I. Manufacturer's Installation Instructions: Submit application conditions and limitations of use stipulated by product testing agency specified under Regulatory Requirements. Include instructions for storage, handling, protection, examination, preparation, and installation of product.

##### 1.8 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing Products specified in this section with minimum three years documented experience.

##### 1.5 EXTRA MATERIALS

- B. General Conditions: Spare parts and maintenance products.
- C. Furnish two of each key.

#### PART 2 - PRODUCTS

##### 2.1 HINGED COVER ENCLOSURES

- D. Construction: NEMA 250, Type 1 or 3R as indicated/required steel enclosure.
- E. Covers: Continuous hinge, held closed by flush latch operable by screwdriver.
- F. Furnish interior fire retardant plywood panel for mounting terminal blocks and electrical components; finish with white enamel.
- G. Enclosure Finish: Manufacturer's standard enamel.

## 2.2 CABINETS

- H. Boxes: Galvanized steel with removable end walls.
- I. Box Size: As indicated on drawings.
- J. Fronts: Steel, flush or surface type with concealed trim clamps, door with concealed hinge, and flush lock. Finish with gray baked enamel.
- K. Furnish metal barriers to form separate compartments wiring of different systems and voltages.

## 2.3 TERMINAL BLOCKS

- L. Terminal Blocks: NEMA ICS 4.
- M. Power Terminals: Unit construction type with closed back and tubular pressure screw connectors, rated 600 volts.
- N. Signal and Control Terminals: Modular construction type, suitable for channel mounting, with tubular pressure screw connectors, rated 300 volts.
- O. Furnish ground bus terminal block, with each connector bonded to enclosure.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- P. Install enclosures and boxes plumb. Anchor securely to wall and structural supports at each corner in accordance with Section 16070 Hangers and Supports for Electrical Systems.
- Q. Install cabinet fronts plumb.

### 3.2 CLEANING

- R. General Conditions: Final cleaning.
- S. Clean electrical parts to remove conductive and harmful materials.
- T. Remove dirt and debris from enclosure.
- U. Clean finishes and touch up damage.

END OF SECTION

SECTION 16520  
EXTERIOR LIGHTING

PART 1 - GENERAL

1.1 SUMMARY

V. Section includes exterior luminaires, poles, and accessories.

1.2 REFERENCES

W. American National Standards Institute:

1.3 SUBMITTALS

X. General Conditions: Submittal procedures.

Y. Shop Drawings: Indicate dimensions and components for each luminaire not standard Product of manufacturer.

Z. Product Data: Submit dimensions, ratings, and performance data.

1.9 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years documented experience.

1.5 DELIVERY, STORAGE, AND HANDLING

B. General Conditions: Product storage and handling requirements.

1.6 COORDINATION

C. General Conditions: Coordination and project conditions.

D. Furnish bolt templates and pole mounting accessories to installer of pole foundations.

PART 2 - PRODUCTS

2.1 LUMINARIES

E. Product Description: Complete exterior luminaire assemblies, with features, options, and accessories as scheduled.

F. Refer to General Conditions for product options.

PART THREE - EXECUTION

3.1 EXAMINATION

G. General Conditions: Coordination and Project conditions.

H. Verify foundations are ready to receive fixtures.

### 3.2 INSTALLATION

- I. Install concrete bases for pv pole per detail provided at locations as indicated on Drawings, in accordance with Division 3.
- J. Install poles plumb. Install shims to adjust plumb. Grout around each base.
- K. Install lamps in each luminaire.
- L. Bond and ground luminaries, metal accessories and metal poles in accordance with Section 16060 Grounding and Bonding.

### 3.3 FIELD QUALITY CONTROL

- M. General Conditions: Field inspecting, testing, adjusting, and balancing.
- N. Operate each luminaire after installation and connection. Inspect for improper connections and operation.
- O. Measure illumination levels to verify conformance with performance requirements.
- P. Take measurements during night sky, without moon or with heavy overcast clouds effectively obscuring moon.

### 3.4 ADJUSTING

- Q. General Conditions: Testing, adjusting, and balancing.
- R. Aim and adjust luminaries to provide illumination levels and distribution as indicated on Drawings.

### 3.5 CLEANING

- S. General Conditions: Final cleaning.
- T. Clean photometric control surfaces as recommended by manufacturer.
- U. Clean finishes and touch up damage.

### 3.6 PROTECTION OF FINISHED WORK

- V. General Conditions: Protecting finished work.
- W. Relamp luminaries having failed lamps at Substantial Completion.

END OF SECTION



Revised: May 26, 2011

**STATE & FEDERAL WAGES  
DESIGNATED HOURLY MINIMUM WAGE RATES  
CARSON CITY**

The prevailing wage rates as determined by the Office of the Labor Commissioner (10/1/2010) and the U.S. Department of Labor (Decision No. NV100065 dated (5/20/2011) have been examined. The higher of the two wage rates for similar classifications has been designated as the wage rate for this contract. Workers subject to prevailing wage provisions of NRS 338 and the Davis Bacon Act are to be paid not less than the wage indicated.

\*Pursuant to NAC 338.040(3), "After a contract has been awarded, the prevailing rates of wages in effect at the time of the opening of bids remain in effect for the duration of the project."

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**PREVAILING WAGE RATES INCLUDE THE BASE RATE AS WELL AS ALL APPLICABLE FRINGES**

**NRS 338.010(21) "Wages" means:**

(a) The basic hourly rate of pay; and

(b) The amount of pension, health and welfare, vacation and holiday pay, the cost of apprenticeship training or other similar programs or other bona fide fringe benefits which are a benefit to the workman.

**NRS 338.035 Discharge of part of obligation of contractor or subcontractor engaged on public work to pay wages by making certain contributions in name of workman.** The obligation of a contractor engaged on a public work or a subcontractor engaged on a public work to pay wages in accordance with the determination of the Labor Commissioner may be discharged in part by making contributions to a third person pursuant to a fund, plan or program in the name of the workman.

<b>CRAFT</b>	<b>RATE</b>
<b>AIR BALANCE TECHNICIAN</b>	<b>ADD SHEET METAL ZONE RATE</b>
Air Balance-Journeyman	48.35
Air Balance-Foreman	51.46
Air Balance-General Foreman	54.57
 <b>ALARM INSTALLER</b>	
Alarm Installer-Journeyman	26.47

**BOILERMAKER**

Boilermaker	65.94
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**BRICKLAYER****ADD ZONE RATE**

Bricklayer-Journeyman	32.68
Bricklayer-Foreman	33.93
Bricklayer-General Foreman	35.68

**CARPENTER****ADD ZONE RATE**

Carpenter-Journeyman	38.80
Carpenter-Foreman	41.55

**CEMENT MASON****ADD ZONE RATE**

Cement Mason-Journeyman	34.40
Cement Mason-Foreman	36.40

**ELECTRICIAN COMMUNICATION  
TECHNICIAN**

Communication Technician-Installer	29.36
Communication Technician	32.46
Communication-Senior Technician	34.86

**ELECTRICIAN-LINE**

Electrician-Groundman	40.50
Electrician-Lineman	59.90
Electrician-Foreman	65.16
Electrician-General Foreman	70.45
Heavy Equipment Operator	49.49

**ELECTRICIAN-NEON SIGN**

Electrician-Neon Sign	45.52
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**ELECTRICIAN-WIREMAN**

Wireman	50.78
Cable Splicer	54.58
Wireman-Foreman	54.58
Wireman-General Foreman	58.38

**ELEVATOR CONSTRUCTOR**

Elevator Constructor-Journeyman Mechanic	78.21
Elevator Constructor-Mechanic in Charge	85.48

**FENCE ERECTOR**

Fence Erector	37.69
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<b>FLAGPERSON</b>	<b>ADD LABORER ZONE RATE</b>
Flagperson	27.95
<b>FLOOR COVERER</b>	
Floor Coverer-Journeyman	36.34
Floor Coverer-Foreman	38.93
<b>GLAZIER</b>	
Glazier	22.42
<b>HIGHWAY STRIPER</b>	<b>ADD LABORER ZONE RATE</b>
Highway Striper	33.57
<b>HOD CARRIER-BRICK MASON TENDER</b>	<b>ADD ZONE RATE</b>
Brick Mason-Journeyman	30.10
Brick Mason-Foreman	30.60
<b>HOD CARRIER-PLASTER TENDER</b>	<b>ADD ZONE RATE</b>
Plasterer Tender-Journeyman	34.26
Plasterer-Gun Tender	35.26
Plasterer Tender-Foreman	35.62
<b>IRON WORKER</b>	
Ironworker-Journeyman	56.74
Ironworker-Foreman	60.04
Ironworker-General Foreman	63.40
<b>LABORER</b>	<b>ADD ZONE RATE</b>
<b>SEE GROUP CLASSIFICATIONS</b>	
Landscaper	25.66
Furniture Mover	27.16
Group 1	30.82
Group 1A	27.95
Group 2	30.92
Group 3	31.07
Group 4	31.32
Group 4A	32.57
Group 5	31.62
Group 6	
Nozzlemen, Rodmen	31.62
Gunmen, Materialmen	31.32
Reboundmen	30.97
Gunite Foremen	32.02
<b>MECHANICAL INSULATOR</b>	
Mechanical Insulator-Mechanic	54.56
Mechanical Insulator-Foreman	57.06
Mechanical Insulator-General Foreman	58.56

**MILLWRIGHT**

Millwright	25.01
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**OPERATING ENGINEER  
SEE GROUP CLASSIFICATIONS**

**ADD ZONE RATE**

Group 1	43.08
Group 1A	45.84
Group 2	46.37
Group 3	46.64
Group 4	47.38
Group 5	47.68
Group 6	47.85
Group 7	48.10
Group 8	48.69
Group 9	49.01
Group 10	49.36
Group 10A	49.55
Group 11	49.79
Group 11A	51.43
Group 11B	52.24
Foreman	51.43

Add 7% to base rate for "Second" Shift

Add 12.5% to base rate for "Special" shift

**OPERATING ENGINEER-STEEL  
FABRICATOR & ERECTOR  
SEE GROUP CLASSIFICATIONS**

**ADD ZONE RATE**

Group 1	58.38
Group 1 Truck Crane Oiler	52.21
Group 1 Oiler	50.25
Group 2	56.87
Group 2 Truck Crane Oiler	51.96
Group 2 Oiler	50.04
Group 3	55.63
Group 3 Truck Crane Oiler	51.74
Group 3 Oiler	49.82
Group 3 Hydraulic	51.41
Group 4	53.90
Group 5	52.80

Add 7% to base rate for "Second" Shift

Add 12.5% to base rate for "Special" Shift

**OPERATING ENGINEER -PILEDRIIVER  
SEE GROUP CLASSIFICATIONS**

**ADD ZONE RATE**

Group 1	57.85
Group 1 Truck Crane Oiler	52.39

# ATTACHMENT A

Group 1 Oiler	50.47
Group 2	56.31
Group 2 Truck Crane Oiler	52.18
Group 2 Oiler	50.27
Group 3	54.86
Group 3 Truck Crane Oiler	51.96
Group 3 Oiler	50.04
Group 4	53.35
Group 5	52.24
Group 6	51.13
Group 7	50.17
Group 8	49.21

Add 7% to base for "Second" Shift

Add 12.5% to base for "Special" Shift

**PAINTER**

Brush/Roller Painter	32.74
Spray Painter/Paperhanger	33.59
Sandblaster	33.24
Structural Steel & Steeplejack	33.74
Swing Stage	34.74
Special Coating Application-Brush	33.24
Special Coating Application-Spray	33.74
Special Coating Application-Spray Steel	33.99
Foreman	\$1.00 above highest Journeyman

**PILEDRIIVER**

Piledriver-Journeyman	58.47
Piledriver-Foreman	62.05

**PLASTERER**

**ADD ZONE RATE**

Plasterer-Journeyman	34.77
Plasterer-Foreman	37.02

**PLUMBER/PIPEFITTER**

Plumber-Journeyman	45.20
Plumber-Foreman	48.16
Plumber-General Foreman	51.12

**REFRIGERATION**

Refrigeration-Journeyman	41.58
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**ROOFER** (Does not include sheet metal roofs)

Roofer	20.45
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**SHEET METAL WORKER**

**ADD ZONE RATE**

Sheet Metal-Journeyman	48.35
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Sheet Metal-Foreman	51.46
Sheet Metal-General Foreman	54.57
<b>SPRINKLER FITTER</b>	
Sprinkler Fitter-Journeyman	53.45
Sprinkler Fitter-Foreman	56.20
Sprinkler Fitter-General Foreman	58.45
<b>SURVEYOR</b>	<b>ADD OPERATING ENG. ZONE RATE</b>
Surveyor	46.64
<b>TAPER</b>	
Taper	36.28
<b>TILE SETTER/TERRAZZO WORKER/MARBLE MASON-FINISHER</b>	<b>ADD ZONE RATE</b>
Tile, Terrazzo and Marble Finisher	24.77
<b>TILE SETTER/TERRAZZO WORKER/MARBLE MASON</b>	<b>ADD ZONE RATE</b>
Tile Setter-Journeyman	32.87
Tile Setter-Foreman	34.12
Tile Setter-General Foreman	35.87
Terrazzo/Marble Mason-Journeyman	34.37
Terrazzo/Marble Mason-Foreman	35.62
Terrazzo/Marble Mason-General Foreman	37.37
<b>TRAFFIC BARRIER ERECTOR</b>	<b>ADD LABORER ZONE RATE</b>
Traffic Barrier Erector	30.82
<b>TRUCK DRIVER</b>	<b>ADD ZONE RATE</b>
Truck Driver	21.61
<b>WELL DRILLER</b>	
Well Driller	54.49
<b>LUBRICATION AND SERVICE ENGINEER (MOBILE AND GREASE RACK)</b>	<b>ADD OPERATING ENG. ZONE RATE</b>
Lubrication and Service Engineer (mobile and grease rack)	47.85
<b>SOIL TESTER (CERTIFIED)</b>	
Soil Tester (Certified)	56.62
<b>SOILS AND MATERIALS TESTER</b>	
Soils and Materials Tester	56.62

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## Job Descriptions for Recognized Classes of Workmen

Regarding job descriptions for public works projects, please take notice of the following:

1. Pursuant to NAC 338.0095(1)(a), "A workman employed on a public work must be paid based on the type of work that the workman actually performs on the public work and in accordance with the recognized class of the workman."
2. The work description for a particular class is not intended to be jurisdictional in scope nor to be construed as limiting or prohibiting any worker from performing the work of one or more classes.
3. Any person who believes that a type of work is not classified, or who otherwise needs clarification pertaining to the recognized classes or job descriptions, shall contact the Labor Commissioner, in writing, for a determination of the applicable classification and pay rate for a particular type of work.
4. The job descriptions set forth or referenced herein supercede any and all descriptions previously agreed upon by the Labor Commissioner in any settlement agreements or stipulations arising out of contested matters.
5. The following specific provisions, where applicable, shall prevail over any general provisions of the job descriptions:
  - Amendments to the prevailing wage determinations;
  - Group Classifications and/or descriptions recognized by the Labor Commissioner and included with wage determinations for a particular type of work in a particular county.

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**AIR BALANCE TECHNICIAN**, includes but is not limited to:

Inspecting, testing, programming, documenting, adjusting and balancing heating, cooling and ventilating systems using specialized tools and testing equipment to attain performance standards specified in the design of the systems.

**ALARM INSTALLER**, includes but is not limited to:

1. Installing or testing electrical protective signaling systems used to provide notification of fire, burglary or other irregularities on the premises of the subscriber of the system;
2. Installing of wiring and signaling units;
3. Repairing electrical protective signaling systems
4. Starting up, programming and documenting systems;

**BOILERMAKER**, includes but is not limited to:

1. Constructing, assembling, maintaining and repairing stationary steam boilers and boiler house auxiliaries;
2. Aligning structures or plate sections to assemble boiler frame tanks or vats;
3. Assisting in the testing of assembled vessels, directing cleaning of boilers and boiler furnaces;
4. Inspecting and repairing boiler fittings, including, without limitation, safety valves, regulators, automatic-control mechanisms, water columns and auxiliary machines.

**BRICKLAYER**, includes but is not limited to:

1. Laying materials, including without limitation, brick, structural tile and blocks of concrete, cinder, glass, gypsum and terra cotta, but not including stone, to construct or repair walls, partitions, arches, sewers, and other structures;
2. Laying and aligning bricks, blocks or tiles to build or repair structures for high temperature equipment, including, without limitation, cupola, kilns, ovens and furnaces; and
3. Fastening or fusing brick or other building materials to structures with wire clamps, anchor holes, torches or cement.
4. Pointing-cleaning-caulking of all types of masonry; caulking of window frames encased in masonry on brick, stone or cement structures, including grinding and cutting out on such work and sand blasting, steam cleaning and gunite work.
5. Pointing, cleaning and weatherproofing of buildings, grain elevators and chimneys built of stone, brick or concrete, including grinding and cutting out, sand blasting and gunite work on the same.

**CARPENTER**, includes but is not limited to:

1. Laying out, constructing, erecting, fabricating, installing and repairing structures and fixtures of wood, plywood, or alternative materials, doors and hardware and the fastening of the same, inclusive of garage or overhead door openers, cabinets, framework, floors, and acoustical ceiling systems using carpenter's hand tools and power tools;
2. Installing or erecting metal studs, drywall, lathing, wall partitions, prefabricated EFIS panels or any other system of panels that is attached to the interior or exterior of any building or structure, insulation and all types of ceilings;
3. Pre-cast concrete and concrete form work which includes but is not limited to: setting of templates, layout, fabrication, constructing, placing, erection, rigging and hoisting, stripping and removing of all forms which are to be reused;
4. Plywood decking, including, without limitation, stacking and installation of the plywood and the plywood decking;
5. Cutting, setting, removing of beam sides and soffits, bracing, and pads;
6. Constructing all wood panel forms and frame wall;
7. Building, erecting and disassembling self-supporting scaffolds that are more than 14 feet in height;
8. Laying out, cutting, joining, fitting of Foam Architectural Elements if same are attached mechanically; and
9. Shaping, cutting and planing by any means if done by hand or machine.

**CEMENT MASON**, includes but is not limited to:

1. Smoothing and finishing surfaces of poured concrete floors, walls, sidewalks and curbs to specified textures;
2. Patching holes with fresh concrete or an epoxy compound;
3. Molding expansion joints and edges through the use of edging tools, jointers and straightedges;
4. Setting of curb and gutter forms one board high;

**ELECTRONIC COMMUNICATION TECHNICIAN**, includes but is not limited to:

1. Pulling cable, installing and trimming devices, terminating loops, circuits, or other data gathering points;
2. Termination of main control panels, racks, or other head end equipment, as well as testing of all circuits from the field devices to the main control panels and/or equipment;
3. Utilizing test equipment for the purpose of troubleshooting and verifying the integrity of the circuits in question;

4. Using hand tools to assemble and install data communication lines and equipment computer systems, antennas and towers;
5. Disassembling equipment to adjust, repair or replace parts using hand tools;
6. Starting up, programming and documenting systems;
7. Measuring, cutting, splicing, connecting, soldering and installing wire and cable associated with communication systems

**ELECTRICIAN LINEMAN**, includes but is not limited to:

1. Erecting and repairing wood poles and prefabricated light duty metal towers, cable and related equipment to construct overhead transmission and distribution power lines used to conduct electrical energy between generating stations, substations and consumers;
2. Directing and assisting electrician ground men in attaching cross arms, insulators, lightning arresters, switches, wire conductors and auxiliary equipment to poles and towers in preparation of erecting the poles or towers;
3. Climbing erected poles or towers and installing equipment such as transformers
4. Strings wire conductors between erected poles with assistance of ground helpers and adjusts slack in conductors to compensate for contraction and elongation of conductors due to temperature variations, using winch.

**ELECTRICIAN GROUNDMAN**, includes but is not limited to:

1. Working under the direct supervision of linemen, including the operation of jackhammers and man hauls;
2. Loading and unloading of materials and equipment used by electrician lineman.
3. Does not include climbing poles, towers or other structures or working in the proximity of energized lines or equipment;

**ELECTRICIAN-NEON SIGN**, includes but is not limited to:

1. Installing, servicing and repairing plastic, neon and illuminated signs;
2. Ascending ladders or operating hydraulic or electric hoist to install, service, or examine sign to determine cause of malfunction;
3. Wiring, rewiring or removing defective parts and installing new parts using electrician's tools;
4. Removing sign or part of sign for repairs, such as structural fabrication, scroll repair, or transformer repair;

**ELECTRICIAN WIREMAN**, includes but is not limited to:

1. Laying out plans, installing, testing and repairing wiring, electrical fixtures, apparatus and control equipment;
2. Measuring, cutting, bending, threading, assembling and installing electrical conduit by using tools including, without limitation, a hacksaw, pipe threader, or conduit bender;
3. Pulling wiring through conduit;
4. Splicing wires;
5. Connecting wiring to lighting fixtures and power equipment;
6. Installing control and distribution apparatus, including, without limitation, switches, relays and circuit breakers, and fastening such apparatus into place;
7. Connecting power cables to equipment, including, without limitation, electric ranges and motors, and installing grounding leads;
8. Testing the continuity of a circuit to ensure electrical compatibility and safety of components using testing instruments, including, without limitation, an ohmmeter, a battery and buzzer, and an oscilloscope;
9. As necessary, cutting and welding steel structural members;

**ELEVATOR CONSTRUCTOR**, includes but is not limited to:

1. Assembling, installing, repairing and maintaining electric and hydraulic freight and passenger elevators, escalators and dumbwaiters;
2. Cutting pre-fabricated sections of framework, rails and other elevator components to specified dimensions, using acetylene torch, power saw, and disc grinder;
3. Installing cables, counterweights, pumps, motor foundations, escalator drives, guide rails, elevator cars, and control panels, using hand tools;

**FENCE ERECTOR**, includes but is not limited to:

1. Erecting or repairing chain link, wooden, tortoise, wire/wire mesh, or temporary fencing;
2. Mixing and pouring concrete around bases of posts and tamping soil into post hole to embed post;
3. Digging post holes with a spade, post hole digger or power driven auger;
4. Aligning posts through the use of lines or by sighting;
5. Verifying vertical alignment of posts with a plumb bob or spirit level;

**FLAG PERSON**, includes but is not limited to:

1. Directing movement of vehicular traffic through construction projects;
2. Distributing traffic control signs and markers along site in designated pattern;
3. Informing drivers of detour routes through construction sites;

**FLOOR COVERER**, includes but is not limited to:

1. Applying blocks, strips or sheets of shock-absorbing, sound-deadening or decorative covering to floors and walls, including carpets or rugs;
2. Measuring and cutting covering materials, such as rubber, linoleum, astro-turf, or cork tile and foundation material such as felt, using rule, straightedge, linoleum knife and snips;
3. Spreading adhesive cement over floor to cement foundation material to floor for sound-deadening, and to prevent covering from wearing at the board joints;
4. Rolling finished floors to smooth the floor and press cement into base and covering;
5. Fitting of devices for the attachment of carpet, linoleum, rubber and all resilient floor coverings and the fitting of metal edges, corners and caps used in the installation of the foregoing materials and all other preparatory work;

**GLAZIER**, includes but is not limited to:

1. Installing, setting, cutting, preparing, or removal of glass, or materials used in lieu thereof, including, without limitation, in windows, doorways, showers, bathtubs, skylights and display cases;
2. Installing glass on surfaces, including, without limitation, fronts of buildings, interior walls and ceilings;
3. Installing pre-assembled framework for windows and doors designed to be fitted with glass panels, including stained glass windows by using hand tools;
4. Loading and arranging of glass on trucks at the site of the public work;

**HIGHWAY STRIPER**, includes but is not limited to:

1. Painting highways, streets and parking surfaces by using manually propelled or mechanically propelled machines, brushes, rollers or spray guns;
2. Installing any device or application of any material used in lieu of paint for traffic direction, including, without limitation, buttons, tapes, plastics, rumble bars and other similar materials;

**HOD CARRIER-BRICK MASON TENDER**, includes but is not limited to:

1. Tending to or assisting brick masons, bricklayers and stonemasons;

2. Mixing, packing, wheeling and tempering mortar and fire clay;
3. Mixing, supplying and holding materials or tools;
4. Mixing, handling and conveying all other materials used by brick masons, bricklayers and stone masons;
5. Building scaffolds, trestles, boxes and swinging staging used exclusively by bricklayers and stone masons;
6. Hanging cables and placing putlogs;
7. Carrying bricks and mortar in a hod;
8. Cleaning work area and equipment of bricklayers and stone masons

**HOD CARRIER-PLASTERER TENDER**, includes but is not limited to:

1. Serving Plasterers in any capacity;
2. Handling materials after the materials are delivered as used by a Plasterer;
3. Building and handling all necessary trestle, scaffolding and planking of scaffolding for the exclusive use of Plasterers;
4. Building mortar boxes, mortar boards and stands.

**IRONWORKER**, includes but is not limited to:

1. Performing duties, as part of a crew, to raise, place and unite girders, columns and other structural steel members to form completed structures or structure frameworks;
2. Setting up hoisting equipment for raising and placing structural steel members;
3. Fastening steel members to cable of hoist, using chains, cable or rope;
4. Forcing steel members into final position using turnbuckles, crowbars, jacks, hand tools;
5. Aligning rivet holes in steel members with corresponding holes in previously placed steel members by driving drift pins to handle of wrench through holes;
6. Bolting aligned steel members to keep them in position until the steel members can be permanently riveted, bolted or welded into place;
7. Cutting and welding steel members;
8. Installing and repairing gates, iron doors, flagpoles, iron fences and roof decking;
9. Installing corrugated sheets when attached to steel frames;
10. Stud welding of all iron, steel and metal to structural steel;
11. Handling and setting of steel and metal joists;
12. Loading, unloading, hoisting, handling, signaling, placing and erecting of pre-stressed and pre-cast materials;
13. Handling, racking, sorting, cutting, bending, hoisting, placing, burning, welding and tying all material used to reinforce concrete construction;

**LABORER**, includes but is not limited to:

Perform tasks involving physical labor at building, highway, and heavy construction projects, tunnel and shaft excavations, and demolition sites. May operate hand and power tools of all types: air hammers, earth tampers, cement mixers, small mechanical hoists, and a variety of other equipment and instruments. May clean and prepare sites, dig trenches, set braces to support the sides of excavations, erect scaffolding, clean up rubble and debris, and remove asbestos, lead, and other hazardous waste materials. May assist other craft workers.

**MARBLE MASON**, includes but is not limited to:

1. Cutting, tooling, and setting marble slabs in floors and walls of buildings and renovating and polishing marble slabs previously set in buildings;
2. Trimming, facing and cutting marble to a specific size using a power saw, cutting and facing equipment, and hand tools
3. Drilling holes in marble slabs and attaching brackets;
4. Spreading mortar on the bottom and sides of a marble slab and on the side of adjacent marble slabs;

5. Setting blocks in positions, tamping a marble slab into place and anchoring bracket attachments with wire;
6. Filling joints between marble slabs with grout and removing excess grout with a sponge;
7. Cleaning and beveling cracks and chips on marble slabs using hand tools and power tools;
8. Heating cracked or chipped areas of a marble slab with a blowtorch and filling the defect with a composition mastic that matches the grain of the marble slab; and
9. Polishing marble slabs and other ornamental stone to a high luster by using hand tools and power tools.

**MECHANICAL INSULATOR**, includes but is not limited to:

1. Covering and lining structures with cork, canvas, tar paper, magnesia and related materials;
2. Installing blown-on insulation on pipe and machinery;
3. Lining of mechanical room surfaces and air handling shafts;
4. Filling and damming of fire stops and penetrations including, but not limited to, electrical and mechanical systems;
5. Foam applications for the purpose of thermal, acoustical, or fire protective purposes, including RTV foams or equivalents, applied to mechanical or electrical systems;
6. Duct lining and duct wrapping, direct application and installation of fire protection of grease ducts, exhaust systems, or any other ductwork for acoustical or thermal purposes;
7. Insulation of field joints on pre-insulated underground piping and the pouring of Gilsilite or its equivalent;
8. The application of material, including metal and PVC jacketing, on piping, fittings, valves, flanges, boilers, ducts, plenums, flues, tanks, vats, equipment and any other hot or cold surface for the purpose of thermal control;

**MILLWRIGHT**, includes but is not limited to:

1. Installing machinery and equipment according to layout plans, blueprints and other drawings in industrial establishments by using hoists, lift trucks, hand tools and power tools;
2. Dismantling machines by using hammers, wrenches, crowbars and other hand tools;
3. Assembling and installing equipment, including, without limitation, shafting, conveyors, monorails and tram rails, by using hand tools and power tools;
4. Constructing foundations for machines by using hand tools and building materials, including, without limitation, wood, cement and steel;
5. Assembling machines and bolting, welding, riveting or otherwise fastening them to a foundation or other structure by using hand tools and power tools; and
6. Repairing and lubricating machines and equipment (at the site of the public work) assembled and used by millwrights.

**OPERATING ENGINEER**, includes but is not limited to:

Operate one or several types of power construction equipment, such as motor graders, bulldozers, scrapers, compressors, pumps, derricks, shovels, tractors, or front-end loaders to excavate, move, and grade earth, erect structures, or pour concrete or other hard surface pavement.

**PAINTER**, includes but is not limited to:

1. All painting of walls, equipment, buildings, bridges and other structural surfaces by using brushes, rollers and spray guns;
2. Application of wall coverings/wall paper;
3. Removing old paint to prepare surfaces before painting the surface;

4. Mixing colors or oils to obtain desired color or consistency;
5. Sanding surfaces between coats and polishing final coat to a specified finish;
6. Cutting stencils and brushing and spraying lettering and decorations on surfaces;
7. Washing and treating surfaces with oil, turpentine, mildew remover or other preparations;
8. Filling cracks, holes and joints with caulk, putty, plaster or other filler by using caulking gun or putty knife;

**PILEDRIVER**, includes but is not limited to:

1. Operating pile drivers mounted on skids, barge, crawler, treads or locomotive crane to drive piling as foundations for structures including, without limitation, buildings, bridges and piers;
2. Barking, shoeing, splicing, form building, heading, centering, placing, driving, staying, framing, fastening, automatic pile threading, pulling and/or cutting off of piling;
3. Fabricating, forming, handling and setting of all such pre-cast, pre-stressed and post-stressed shapes that are an integral part of docks, piers, wharves, bulkheads, jetties, and similar structures;

**PIPEFITTER**, includes but is not limited to:

Assembling, installing, modifying and maintaining pipe systems, pipe supports and pneumatic equipment and related machines and equipment components for steam, hot water, heating, cooling, lubricating, sprinkling and industrial and processing systems which may require:

- a. Cutting, threading and hammering pipe to specifications using tools, including, without limitation, saws, cutting torches and pipe threaders and benders;
- b. Attaching pipes to walls, structures and fixtures, including without limitation, radiators or tanks, using brackets, clamps, tools, or welding equipment;
- c. Coating non-ferrous piping materials by dipping in mixture of molten tin and lead to prevent erosion, or galvanic and electrolytic action;

**PLASTERER**, includes but is not limited to:

1. Applying coats of plaster onto interior or exterior walls, ceilings, or partitions of buildings to produce a finished surface according to blueprints, architects' drawings and oral instruction;
2. Creating decorative textures in finish coat by using sand, pebbles or stones;
3. Installing guide wires on exterior surfaces of buildings to indicate thickness of plaster or stucco;
4. Applying weatherproof, decorative covering to exterior surfaces of a building;
5. Molding and installing ornamental plaster pieces, panels and trim;
6. Directing workers to mix plaster to a desired consistency;
7. Assembly of EFIS panels;
8. Laying out, cutting, joining, fitting and installation of Architectural Foam Elements which are trowel applied or adhesive set;
9. Applying, shaping, cutting, and planing in preparation for netting done by hand or machine;
10. All plaster or synthetic finishes applied to Foam Architectural Elements

**PLUMBER**, includes but is not limited to:

Assembling, installing and repairing pipes, fittings and fixtures for heating, water and drainage systems inside of buildings and to a point 5 feet outside of buildings which may therein require:

- a. Repairing and maintaining plumbing by replacing defective washers, repairing or mending broken pipes, and opening clogged drains;

- b. Assembling pipe sections, tubing and fittings by using screws, bolts, solder, plastic solvent and caulking;
- c. Installing pipe assemblies, fittings, valves and fixtures, including, without limitation, sinks, toilets and tubs, by using hand tools and power tools;
- d. Cutting openings in structures, excluding concrete, to accommodate pipe and pipe fittings by using hand tools and power tools;
- e. Filling pipes and plumbing fixtures with water or air and observing pressure gauges to detect and locate leaks.

**REFRIGERATION MECHANIC**, includes but is not limited to:

1. Installing and repairing industrial and commercial refrigeration systems;
2. Mounting compressors, condensers and other refrigeration components to the frame of a refrigerator by using hand tools and acetylene welding equipment;
3. Assembling structural and functional components needed for refrigeration, including, without limitation, controls, switches, gauges, wiring harnesses, valves, pumps, compressors, condensers, cores and pipes;
4. Installing expansion and control valves by using hand tools and acetylene welding equipment;
5. Cutting, bending, threading and connecting pipe from functional components to water, power or refrigeration systems;
6. Fabricating and assembling components and structural portions of a refrigeration system;

**ROOFER**, includes but is not limited to:

1. Installing and covering roofs and structures with slate, asphalt, wood and other related materials, other than sheet metal, by using brushes, knives, punches, hammers and other tools;
2. Spraying roofs, sidings and walls with material to bind, seal, insulate or soundproof sections of a structure;
3. Installation of all plastic, slate, slag, gravel, asphalt and composition roofing, and rock asphalt mastic when used for damp and waterproofing;
4. Installation of all damp resisting preparations when applied on roofs with mop, three-knot brush, roller, swab or spray system;
5. All types of preformed panels used in waterproofing;
6. Handling, hoisting and storing of all roofing, damp and waterproofing materials;
7. The tear-off and/or removal of roofing and roofing materials;

**SHEET METAL WORKER**, includes but is not limited to:

1. Fabricating, assembling, dismantling, installing or repairing:
  - o Sheet metal roofs, including #30 felt roofing paper installed to form a metal roofing system;
  - o Sheet metal parts or equipment, including, without limitation, duct work, metal lockers and kitchen equipment;
  - o Air-veyor and air-handling systems, regardless of materials used;
2. Setting up and operating fabrication machines to cut, bend and straighten sheet metal;
3. Shaping metal over anvils, blocks or forms using a hammer;
4. Operating soldering and welding equipment to join sheet metal parts;
5. Inspecting, assembling and smoothing seams and joints of burred surfaces;
6. Welding, soldering, bolting, riveting, screwing, clipping, caulking or bonding component parts to assemble products by using hand tools, power tools and devices for lifting and handling;

**SPRINKLER FITTER**, includes but is not limited to:

Installing, dismantling, maintaining, repairing, adjusting and correcting all fire protection and fire control systems, including the installation of piping or tubing, appurtenances and equipment pertaining thereto, including both overhead and underground water mains, fire hydrants, and hydrant mains, standpipes and hose connection to sprinkler systems, sprinkler tank heaters, air lines and thermal systems used in connection with sprinkler and alarm systems.

**SURVEYOR**, includes but is not limited to:

1. Planning ground surveys designed to establish base lines, elevation and other geodetic measurements;
2. Compiling data relevant to the shape, contour, gravitation, location, elevation and dimension of land and land features on or near the surface of the Earth for engineering, map making, mining, land evaluation, construction and other purposes;
3. Surveying bodies of water to determine navigable channels and to secure data for construction of breakwaters, piers and other marine structures;
4. Computing data necessary for driving and connecting underground passages, underground storage and volume of underground deposits.

**TAPER**, includes but is not limited to:

1. Sealing joints between plasterboard or other wallboards to prepare a wall surface for painting or papering;
2. Mixing sealing compound by hand or with a portable electric mixer and spreading the compound over the joints between boards using a trowel, broad knife, or spatula;
3. Filling cracks and holes in walls and ceilings with sealing compound ;
4. Applying texturing compound and primer to walls and ceiling to prepare a surface for a final finish by using brushes, rollers and spray guns;
5. Coating of joint compound or taping mud;

**TERRAZZO WORKER**, includes but is not limited to:

1. Applying cement, sand, pigment and marble chips to floors and stairways to attain durable and decorative surfacing according to specifications or drawings;
2. Spreading mixtures of sand, cement and water over surface with a trowel to form terrazzo;
3. Cutting metal division strips and pressing the metal division strips into a terrazzo base so that top edges form a desired design or pattern and define level of finished floor surface;
4. Spreading mixtures of marble chips, cement, pigment and water over a terrazzo base to form a finished surface by using a float and trowel;
5. Pre-casting terrazzo blocks in wooden forms

**TILE SETTER**, includes but is not limited to:

1. Applying tile and materials made for tile in tile-like units to walls, floors, ceilings and promenade roof decks following design specification;
2. Applying glazed, unglazed, mosaic and other ceramic tiles, which are used as a surface on floors, walls, ceilings, and other surfaces and which must be set to specific grade;
3. Applying and floating all setting beds into which glazed, unglazed, mosaic, or other ceramic tiles are set;
4. Leveling and plumbing tiles to a specified grade

**TILE, TERRAZZO AND MARBLE FINISHER**, includes but is not limited to:

1. Supplying and mixing construction materials for a tile setter, terrazzo worker or marble setter;
2. Applying grout and finishing the surface of installed tile, terrazzo and marble;
3. Cleaning installed tile, terrazzo and tile surfaces;

4. Renovation and filling chipped, cracked and broken pieces of tile, terrazzo and marble;
5. Grinding and polishing tile, terrazzo and marble;
6. Assisting a tile setter, terrazzo worker or marble setter;

**TRAFFIC BARRIER ERECTOR**, includes but is not limited to:

Erects or places instruments to provide directional assistance to traffic on or near the public works construction project.

**TRUCK DRIVER**, includes but is not limited to:

Driving a tractor trailer combination or a truck to transport goods or materials at the site of a public work or between sites of a public work. (Also, see descriptions listed with Truck Driver rates, if any.)

**WELL DRILLER**, includes but is not limited to:

1. Setting, operating or tending to portable drilling rig machinery and related equipment to drill wells;
2. Extending stabilizing jackscrews to support and level a drilling rig;
3. Installing water well pumps;
4. Drillings wells for industrial water supplies, irrigation water supplies or water supplies for any other purpose; dewatering or other similar purposes; exploration; hole drilling for geologic and hydrologic information; and core drilling for geologic information.

### **GROUP CLASSIFICATIONS**

**LABORER**, includes but is not limited to:

Group 1

All cleanup work of debris, grounds, and building including windows and tile

Dumpmen or Spotter (other than asphalt)  
 Handling and Servicing of Flares, Watchmen  
 General Laborer  
 Guide Posts and Highway Signs  
 Guardrail Erection and Dismantling  
 Limber, Brushloader and Piler  
 Pavement Marking and Highway Striping  
 Traffic Control Supervisor

Group 2

Choker setter or Rigger (clearing work only) Pittsburgh  
 Chipper and similar type brush shredders  
 Concrete worker (wet or dry) all concrete work not listed in Group3  
 Crusher or Grizzly Tender  
 Greasing Dowels  
 Guinea Chaser (Stakemen)  
 Panel Forms (wood or metal) handling, cleaning and stripping of Loading and unloading,  
 (Carrying and handling of all rods and material for use in reinforcing concrete  
 Railroad Trackmen (maintenance, repair or builders)  
 Sloper  
 Semi-Skilled Wrecker (salvaging of building materials other than those listed in Group 3)

Group 3

Asphalt Workers (Ironers, Shovelers, Cutting Machine)  
Buggymobile  
Chainsaw, Faller, Logloader and Bucker  
Compactor (all types)  
Concrete Mixer under 1/2 yard  
Concrete Pan Work (Breadpan type), handling, cleaning\stripping  
Concrete Saw, Chipping, Grinding, Sanding, Vibrator  
Cribbing, Shoring, Lagging, Trench Jacking, Hand-Guided Lagging Hammer  
Curbing or Divider machine  
Curb Setter (precast or cut)  
Ditching Machine (hand-guided)  
Drillers Helper, Chuck Tender  
Form Raiser, Slip Forms  
Grouting of Concrete Walls, Windows and Door Jams  
Headerboardmen  
Jackhammer, Pavement Breaker, Air Spade  
Mastic Worker (wet or dry)  
Pipewrapper, Kettlemen, Potmen, and men applying asphalt, creosote and similar type materials  
All Power Tools (air, gas, or electric), Post Driver  
Riprap-Stonepaver and RockSlinger, including placing of sack concrete wet or dry  
Rototiller  
Rigging and Signaling in connection with Laborers' work  
Sandblaster, Potmen, Gunmen or Nozzlemen  
Vibra-screed  
Skilled Wrecker (removing and salvaging of sash, windows, doors, plumbing and electrical fixtures)

Group 4

Burning and Welding in connection with Laborers' work  
Joy Drill Model TWM-2A, Gardner Denver Model DN143 and similar type drills (in accordance with Memorandum of Understanding between Laborers and Operating Engineers dated at Miami, Florida, Feb. 3, 1954) and Track Drillers, Diamond Core Drillers, Wagon Drillers, Mechanical Drillers on Multiple Units  
High scalers  
Concrete pump operator  
Heavy Duty Vibrator with Stinger 5" diameter or over  
Pipelayer, Caulker and Bander  
Pipelayer-waterline, Sewerline, Gasoline, Conduit  
Cleaning of Utility Lines  
Slip Lining of Utility Lines (including operation of Equipment)  
TV Monitoring and Grouting of Utility Lines  
Asphalt Rakers

Group 4A

Foreman

Group 5

Construction Specialists  
Blasters and Powdermen, all work of loading, placing, and blasting of all powder and explosives of any type, regardless of method used for such loading and placing

Asbestos removal  
Lead abatement  
Hazardous waste  
Material removal

Group 6

Gunite Foremen, Nozzlemen, Rodmen, Gunmen, Materialmen, Reboundmen

**OPERATING ENGINEER, includes but is not limited to:**

Group 1

Engineer Assistant

Group 1A

Heavy Duty Repairman Hellper  
Oiler  
Parts man

Group 2

Compressor Operator  
Material Loader and/or Conveyor Operator (handling building materials)  
Pump Operator

Group 3

Bobcat or similar loader, 1/4 cu. yd. or less  
Concrete Curing Machines (streets, highways, airports, canals)  
Conveyor Belt Operator (tunnel)  
Forklift (under 20 )  
Engineer Generating Plant (500 K.W.)  
Mixer Box Operator (concrete plant)  
Motorman  
Rotomist Operator  
Oiler (truck crane)

Group 4

Concrete Mixer Operator, Skip type  
Dinky Operator  
Forklift (20' or over) or Lumber Stacker  
Ross Carrier  
Skip Loader Operator (under one (1) cu. yd.)  
Tie Spacer

Group 5

Concrete Mixers (over one (1) cu. yd.)  
Concrete Pumps or Pumpcrete Guns  
Elevator and Material Hoist ( one (1) drum)  
Groundman for Asphalt Milling and similar

Group 6

Auger type drilling equipment up to and including 30 ft. depth digging capacity m.r.c.  
Boom Truck or Dual Purpose a-Frame Truck

B.L.H. Lima Road Pactor or similar  
 Chip Box Spreader (Flaherty type or similar)  
 Concrete Batch Plant (wet or dry)  
 Concrete Saws (highways, streets, airports, canals)  
 Locomotives (over thirty (30) tons)  
 Maginnis International Full Slab Vibrator (airports, highways, canals and warehouses)  
 Mechanical Finishers (concrete) (Clary, Johnson, Bidwell Bridge Deck or similar types)  
 Mechanical Burn, Curb and/or Curb and Gutter Machine (concrete or asphalt)  
 Pavement Breaker, Truck Mounted, with compressor combination  
 Pavement Breaker or Tamper (with or without compressor combination)  
 Power Jumbo Operator (setting slip-forms, etc., in tunnels)  
 Roller Operator (except asphalt)  
 Self-Propelled Tape Machine  
 Self-Propelled Compactor (single engine)  
 Self-Propelled Power Sweeper Operator  
 Slip-Form Pump (power-driven by hydraulic, electric, air, gas, etc. lifting device for concrete forms)  
 Small Rubber-Tired Tractors  
 Snooper Crane, Paxton-Mitchell or similar  
 Stationary Pipe Wrapping, Cleaning and Bending Machine Operator

Group 7

Auger type drilling equipment over 30 ft. depth digging capacity m.r.c.  
 Compressor (over 2)  
 Concrete Conveyor or Concrete Pump, truck or equipment mounted (any assistance required shall be performed by an Assistant to Engineer) Boom length to apply  
 Concrete Conveyor, Building Site  
 Drilling and Boring Machine, vertical and horizontal (not to apply to waterliners, wagon drills or jack hammers)  
 Crusher Plant Engineer  
 Generators  
 Kolman Loader  
 Material Hoist (two (2) or more drums)  
 Mechanical Finishers or Spreader Machine (asphalt, Barber-Greene or similar)  
 Mine or Shaft Hoist  
 Pipe Bending Machines (pipeline only)  
 Pipe Cleaning Machines (tractor-propelled and supported)  
 Pipe Wrapping Machines (tractor-propelled and supported)  
 Portable Crushing and Screening Plants  
 Post Driller And/Or Driver  
 Pumps ( over 2)  
 Roller Operator (asphalt)  
 Screedman (except asphaltic or concrete paving)  
 Screedman (Barber-Greene and similar) (asphaltic or concrete paving)  
 Self-Propelled Boom-Type Lifting Device (center mount) (on ten (10) ton capacity or less)  
 Slusher Operator  
 Surface Heater and Planer Operator  
 Trenching Machine (maximum digging capacity three (3) ft. depth) (Any assistance in the operation, if needed, shall be performed by an Assistant to Engineer)  
 Truck-Type Loader  
 Welding Machines (gasoline or diesel)

Group 8

Asphalt Plant Engineer  
 Asphalt Milling Machine  
 Cast-In-Place Pipe-Laying Machine  
 Combination Slusher and Motor Operator  
 Concrete Batch Plant (multiple units)  
 Dozer Operator  
 Drill Doctor  
 Elevating Grader Operator  
 Grooving and Grinding Machine (highways)  
 Ken Seal Operator  
 Loader (up to and including two and one-half (2 1/2) cu. yds)  
 Mechanical Trench Shield  
 Mixermobile  
 Push Cats  
 Road Oil Mixing Machine Operator Wood-Mixer (and other similar Pugmill equipment)  
 Rubber-Tired Earthmoving Equipment (up to and including thirty-five (35) cu. yds. "struck " m.r.c., Euclids, T-Pulls, DW10, 20, 21 and similar)  
 Self-Propelled Compactors with Dozer; Hyster 450, Cat 825 or similar  
 Sheepfoot  
 Small Tractor (with boom)  
 Soil Stabilizer (P & H or equal)  
 Timber Skidder (rubber-tired) or similar equipment  
 Tractor-Drawn Scraper  
 Tractor Operator  
 Tractor-Mounted Compressor Drill Combination  
 Trenching Machine Operator (over three (3) feet depth)  
 Tri-Batch Paver  
 Tunnel Badger or Tunnel Boring Machine Operator  
 Tunnel Mole Boring Machine  
 Vermeer T-600b Rock Cutter

Group 9

Chicago Boom  
 Combination Backhoe and Loader (up to and including 3/8 cu. yd.)  
 Combination Mixer and Compressor (gunite)  
 Heavy Duty Repairman and/or Welder  
 Lull Hi-Lift (twenty (20) feet or over)  
 Mucking Machine  
 Sub-Grader (Gurries or other types)  
 Tractor (with Boom) (D6 or larger)  
 Track-Laying-Type Earthmoving Machine (single engine with tandem scrapers )

Group 10

Boom-Type Backfilling Machine  
 Bridge Crane  
 Cary-Lift or similar  
 Chemical Grouting Machine  
 Derricks (two (2) Group 10 Operators required when swing engine remote from hoist)  
 Derrick Barges (except excavation work)  
 Euclid Loader and similar types  
 Gradesetter, Grade Checker  
 Heavy Duty Rotary Drill Rigs

Lift-Slab (Vagtborg and similar types)  
 Loader (over two and one-half (2 1/2 cu. yds. up to and including four (4) cu. yds.)  
 Locomotive (over one hundred (100) tons, single or multiple units)  
 Multiple-Engine Earthmoving Machines (Euclid Dozers, etc.)  
 Pre-Stress Wire Wrapping Machine  
 Rubber-Tired Scraper, Self-Loading  
 Single-Engine Scraper (over thirty-five (35) cu. yds.)  
 Shuttle Car (Reclaim Station)  
 Train Loading Station  
 Trenching Machine multi-engine with sloping attachments (Jefco or similar)  
 Vacuum Cooling Plant  
 Whirley Crane (up to and including twenty-five (25) tons)

#### Group 10A

Backhoe-Hydraulic (up to and including one (1) cu. yd.)  
 Backhoe (up to and including one (1) cu. yd.) (Cable)  
 CMI Dual Lane Auto-Grader SP30 or similar type  
 Cranes (not over twenty-five (25) tons) (hammerhead and gantry)  
 Finish Blade  
 Gradalls (up to and including one (1) cu. yd.)  
 Motor Patrol Operator  
 Power Shovels, Clamshells, Draglines, Cranes (up to and including one (1) cu. yd.)  
 Rubber-Tired Scraper, Self-Loading (twin engine)  
 Self-Propelled Boom-Type Lifting Device, center mount (over 10 tons up to and including 25 tons)

#### Group 11

Automatic Asphalt or Concrete Slip-Form Paver  
 Automatic Railroad Car Dumper  
 Canal Trimmer  
 Cary Lift, Campbell or similar type  
 Cranes (over twenty-five (25) tons)  
 Euclid Loader when controlled from the Pullcat  
 Highline Cableway Operator  
 Loader (over four (4) cu. yds. up to and including twelve (12) cu. yds.)  
 Multi-Engine Earthmoving Equipment (up to and including seventy-five (75) cu. yds. struck m.r.c.)  
 Multi-Engine Scrapers (when used to Push Pull)  
 Power Shovels, Clamshells, Draglines, Backhoes Gradalls (over one (1) cu. yd. and up to and including seven (7) cu. yds. m.r.c.)  
 Self-Propelled Boom-Type Lifting Device (center mount) (over 25 tons m.r.c.)  
 Self-Propelled Compactor (with multiple-propulsion power units)  
 Single-Engine Rubber-Tired Earthmoving Machine, with Tandem Scraper  
 Slip-Form Paver (concrete or asphalt)  
 Tandem Cats and Scraper  
 Tower Crane Mobile (including Rail Mount)  
 Truck Mounted Hydraulic Crane when remote control equipped (over 10 tons up to and including 25 tons)  
 Universal Liebherr and Tower Cranes (and similar types)  
 Wheel Excavator (up to and including seven hundred fifty (750) cu. yds. per hour)  
 Whirley Cranes (over twenty-five (25) tons)

Group 11A

Band Wagons (in conjunction with Wheel Excavators)  
Operator of Helicopter )when used in construction work)  
Loader (over twelve (12) cu. yds.)  
Multi-Engine Earthmoving Equipment (over seventy-five (75) cu. yds. "struck" m.r.c.)  
Power Shovels, Clamshells, Draglines, Backhoes, and Gradalls (over seven 7 cu. yds. m.r.c.)  
Remote-Controlled Earth Moving Equipment  
Wheel Excavator (over seven hundred fifty (750) cu. yds. per hour)

Group 11B

Holland Loader or similar or Loader (over 18 cu. yds.)

**OPERATING ENGINEERS - Steel Fabricator & Erector**

Group 1

Cranes over 100 tons  
Derrick over 100 tons  
Self-Propelled Boom Type Lifting Devices over 100 tons

Group 2

Cranes over 45 tons up to and including 100 tons  
Derrick, 100 tons and under  
Self Propelled Boom Type Lifting Device, over 45 tons  
Tower Crane

Group 3

Cranes, 45 tons and under  
Self Propelled Boom Type Lifting Device, 45 tons and under

Group 4

Chicago Boom  
Forklift, 10 tons and over  
Heavy Duty Repairman/Welder

Group 5

Boom Cat

**OPERATING ENGINEER -Piledriver**

Group 1

Derrick Barge Pedestal mounted over 100 tons  
Clamshells over 7 cu. yds.  
Self Propelled Boom Type Lifting Device, over 100 tons  
Truck Crane or Crawler, land or barge mounted over 100 tons

Group 2

Derrick Barge Pedestal mounted 45 tons up to and including 100 tons  
Clamshells up to and including 7 cu. yds.  
Self Propelled Boom Type Lifting Device over 45 tons  
Truck Crane or Crawler, land or barge mounted, over 45 tons up to and including 100 tons

Group 3

Derrick Barge Pedestal mounted under 45 tons  
Self Propelled Boom Type Lifting Device 45 tons and under  
Skid/Scow Piledriver, any tonnage  
Truck Crane or Crawler, land or barge mounted 45 tons and under

Group 4

Assistant Operator in lieu of Assistant to Engineer  
Forklift, 10 tons and over  
Heavy Duty Repairman/Welder

Group 5

No current classification

Group 6

Deck Engineer

Group 7

No current classification

Group 8

Deckhand  
Fireman

**ZONE RATES**

**BRICKLAYER**

In addition to BRICKLAYER rates add the applicable amounts per hour, calculated based on a radius of over fifty (50) miles from the Washoe County Courthouse in Reno, Nevada:

Zone 1 - 0-35 Miles	\$0.00
Zone 2 - 36-75 Miles	\$1.25
Zone 3 - Over 75 Miles	\$5.37

**CARPENTER (Building and Heavy Highway and Dam Construction)**

In addition to CARPENTER rates add the applicable amounts per hour, calculated from the Washoe County Courthouse:

Zone 1 - 0 to 50 miles	\$0.00 (road miles of either the Carson City Courthouse or the Washoe County Courthouse)
Zone 2 - 51-150	\$3.00
Zone 3 - 151-300 miles	\$4.00
Zone 4 - 301 miles and over	\$5.00

**CEMENT MASON**

In addition to CEMENT MASON rates add the applicable amounts per hour, calculated from the Reno Post Office, 50 S. Virginia St., Reno, Nevada:

Zone 1 - 0-90 miles	\$0.00
Zone 2 - 91 miles and over	\$4.00

**HOD CARRIER-BRICK MASON TENDER**

In addition to Hod Carrier Brick Mason Tender rates add the applicable amounts per hour, calculated based on a radius from the Washoe County Courthouse:

- Zone 1 - 35 to 75 miles \$1.25
- Zone 2 - 76 miles and over \$7.50

**HOD CARRIER-PLASTER TENDER**

In addition to Hod Carrier Plaster Tender rates add the applicable amounts per hour, calculated based on a radius from the radius of South Virginia and Mill Streets in Reno, Nevada.

- Zone 1 - 0 to 70 miles \$0.00
- Zone 2 - 71 miles and over \$8.00

**LABORER** (Highway and Dam Construction only)

In addition to LABORER rates add the applicable amounts per hour, calculated based on a radius from either the Carson City Courthouse or the Washoe County Courthouse:

- Zone 1 - 0 to 50 miles \$0.00
- Zone 2 - 50 to 150 miles \$2.00 (Based on a radius from the Washoe County Courthouse)
- Zone 3 - 150 to 300 miles \$3.00 (Based on a radius from the Washoe County Courthouse)
- Zone 4 - 300 miles and over \$4.00 (Based on a radius from the Washoe County Courthouse)

**LABORER** (Building Construction)

In addition to LABORER rates add the applicable amounts per hour, calculated based on a radius from either the Carson City Courthouse or the Washoe County Courthouse:

- Zone 1 - 0 to 50 miles \$0.00
- Zone 2 - 51 to 150 miles \$2.00
- Zone 3 - 151 to 300 miles \$3.00 (Based on a radius from the Washoe County Courthouse)
- Zone 4 - 300 miles and over \$4.00 (Based on a radius from the Washoe County Courthouse)

**OPERATING ENGINEER**

In addition to: OPERATING ENGINEER; STEEL FABRICATOR and ERECTOR, PILEDRIVER, SURVEYOR, LUBRICATION AND SERVICE ENGINEER rates add the applicable amounts per hour calculated based on a radius from the Washoe County Courthouse:

- Zone 1-0 to 50 miles \$0.00 (of either the Carson City Courthouse or the Washoe County Courthouse)
- Zone 2 - 51 to 150 miles \$2.00
- Zone 3 - 151 to 300 miles \$3.00
- Zone 4 - 300 miles and over \$4.00

**PLASTERER**

In addition to PLASTERER rates add the applicable amounts per hour, calculated based on a radius from South Virginia and Mill Street, Reno, Nevada:

- Zone 1 - 0 to 70 miles \$0.00 (Fallon, Fallon Naval Air Station, and the City of Yerington shall be free zones).
- Zone 2 - 71 miles and over \$8.00

**SHEET METAL WORKER**

In addition to SHEET METAL WORKER and AIR BALANCE TECHNICIAN rates add the applicable amounts per hour, calculated based on a radius from the courthouse in Reno, Nevada :

- Zone 1 - 0 to 100 miles \$0.00 (including the City of Fallon and the Fallon Naval Air Base)
- Zone 2 - over 100 miles \$8.12

**TILE SETTER/TERRAZZO WORKER/MARBLE MASON**

In addition to TILE SETTER/TERRAZZO WORKER/MARBLE MASON rates add the applicable amounts per hour, calculated based on a radius of over thirty five (35) miles from the Washoe County Courthouse in Reno, Nevada:

Zone 1 - 0-35 Miles	\$0.00
Zone 2 - 51-75 Miles	\$1.25
Zone 3 - Over 75 Miles	\$5.00

**TRUCK DRIVER**

In addition to Truck Driver rates add the applicable amounts per hour, calculated from Washoe County Courthouse:

Zone 1 - 0 to 50 miles	\$0.00 (of either the Carson City Courthouse or the Washoe County Courthouse)
Zone 2 - 51 to 150 miles	\$2.00
Zone 3 - 151 to 300 miles	\$3.00
Zone 4 - Over 300 miles	\$4.00

# ATTACHMENT B DAVIS BACON WAGE DETERMINATION

GENERAL DECISION: NV20100003 10/01/2010 NV3

Date: October 1, 2010

General Decision Number: NV20100003 10/01/2010

Superseded General Decision Number: NV20080003

State: Nevada

Construction Type: Building

County: Carson City County in Nevada.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories).

Modification Number	Publication Date
0	03/12/2010
1	03/19/2010
2	07/23/2010
3	07/30/2010
4	08/13/2010
5	09/10/2010
6	10/01/2010

BRNV0013-001 08/01/2008

	Rates	Fringes
BRICKLAYER.....	\$ 22.94	9.14
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BRNV0013-003 07/01/2008

	Rates	Fringes
MARBLE MASON.....	\$ 24.74	9.08
TILE FINISHER.....	\$ 16.84	7.18
TILE SETTER.....	\$ 23.24	9.08
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CARP0971-001 07/01/2009

	Rates	Fringes
CARPENTER (Including Drywall Hanging, Form Worker, and Metal Stud Installation).....	\$ 27.54	10.76

**ZONE PAY:**

ZONE 1: All work within 50 road miles of either Carson City Courthouse or Washoe County Courthouse shall be considered a Free Zone.

# ATTACHMENT B DAVIS BACON WAGE DETERMINATION

ZONE 2: All work within 50 to 150 road miles of the Washoe County Courthouse shall receive \$3.00 additional per hour.

ZONE 3: All work within 150 to 300 road miles of the Washoe County Courthouse shall receive \$4.00 additional per hour.

ZONE 4: Any work performed in excess of 300 road miles of the Washoe County Courthouse shall receive \$5.00 additional per hour.

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ELEC0401-001 12/01/2009

	Rates	Fringes
ELECTRICIAN.....	\$ 35.40	13.02+3%

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ENGI0003-006 07/01/2010

	Rates	Fringes
OPERATOR: Power Equipment		
(03)Excavator and Grader (Finishing and Non-Finishing).....	\$ 32.71	16.74
(03)Forklift (under 20 ft) and Skid Loader/Bobcat.....	\$ 29.80	16.74
(04)Forklift (20 ft and over).....	\$ 30.54	16.74
(06)Base Roller (Ride Along) and Paver (Incl. Asphalt).....	\$ 31.01	16.74
(08)Bulldozer, Loader (up to and including two and one-half [2-1/2] cu. yds.) and Scraper.....	\$ 31.85	16.74
(09)Mechanic.....	\$ 32.17	16.74
(10)Loader (over two and one-half [2-/12] cu. yds. up to and including four [4] cu. yds).....	\$ 32.52	16.74
(11)Loader (over four [4] cu. yds. up to and including twelve [12] cu. yds.).....	\$ 32.95	16.74
(11a)Loader (over twelve [12] cu.yds.).....	\$ 34.59	16.74

AREA PAY (Free Area and Remote Area Rates)

AREA 1 PAY SCALE: All that area falling within fifty (50) road miles of either the Carson City Courthouse or the Washoe County Courthouse shall be considered a free area for the purpose of this agreement.

AREA 2 PAY SCALE: All work falling between fifty (50) and one hundred and fifty (150) road miles of the Washoe County Courthouse shall be computed at an additional \$2.00 per

# ATTACHMENT B DAVIS BACON WAGE DETERMINATION

hour.

AREA 3 PAY SCALE: All work falling between one hundred and fifty (150) and three hundred (300) miles of the Washoe County Courthouse shall be computed at an additional \$4.00 per hour.

AREA 4 PAY SCALE: Any work performed in excess of three hundred (300) road miles of the Washoe County Courthouse shall be computed at an additional \$4.00 per hour.

IRON0118-002 07/01/2009

	Rates	Fringes
IRONWORKER (Ornamental, Reinforcing, and Structural).....	\$ 33.00	23.71

LABO0169-005 10/01/2009

	Rates	Fringes
LABORER		
(1) Common or General, Cone Setter.....	\$ 22.40	8.42
(1A) Flagger.....	\$ 19.53	8.42
(3) Asphalt Shoveler, Concrete Saw, Concrete Vibrator, Form Stripping, Jackhammer, Mason Tender - Cement/Concrete, Plaster Tender, Trencher-hand guided.....	\$ 22.65	8.42
(4) Asphalt Dumpman, Pipelayer.....	\$ 22.90	8.42
(5) Asbestos Removal (Floor, Wall, & Ceiling)....	\$ 23.20	8.42

PAIN0567-013 07/01/2010

	Rates	Fringes
PAINTER		
Drywall Finishing.....	\$ 26.54	10.04
Paperhanger, Spray.....	\$ 25.74	7.85
Prep, Brush, Roller.....	\$ 24.89	7.85

PLAS0797-003 10/01/2009

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER....	\$ 22.23	8.42

PLAS0797-006 07/01/2010

	Rates	Fringes
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# ATTACHMENT B DAVIS BACON WAGE DETERMINATION

PLASTERER.....\$ 22.00 8.63

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\* PLUM0350-004 08/01/2010

	Rates	Fringes
PLUMBER/PIPEFITTER.....\$ 35.28		9.97

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SHEE0026-001 08/01/2008

	Rates	Fringes
SHEETMETAL WORKER (Including HVAC Duct Installation and Metal Roof).....\$ 29.14		13.46

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SUNV2007-001 08/01/2007

	Rates	Fringes
LABORER: Landscape.....\$ 9.85		0.00
LABORER: Mason Tender - Brick...\$ 15.96		0.00
OPERATOR: Backhoe.....\$ 16.67		0.00
OPERATOR: Trencher, Excluding Hand Guided Trencher...\$ 27.96		0.00
PLUMBER, Excluding HVAC Pipe.....\$ 23.31		6.20
ROOFER, Excluding Metal Roofs....\$ 14.23		3.03
TRUCK DRIVER: Dump Truck.....\$ 16.90		0.00
TRUCK DRIVER: Water Truck.....\$ 17.22		2.45

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TEAM0533-003 07/01/2008

	Rates	Fringes
TRUCK DRIVER Flatbed.....\$ 20.15		11.64

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WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.  
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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(ii)).

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ATTACHMENT B  
DAVIS BACON WAGE DETERMINATION

In the listing above, the "SU" designation means that rates listed under the identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

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WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- \* an existing published wage determination
- \* a survey underlying a wage determination
- \* a Wage and Hour Division letter setting forth a position on a wage determination matter
- \* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations  
Wage and Hour Division  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7).  
Write to:

Wage and Hour Administrator

**ATTACHMENT B**  
**DAVIS BACON WAGE DETERMINATION**

U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

**END OF GENERAL DECISION**



Job No. R8675-06-01  
July 16, 2010

Mr. Paul Kuhn  
Winston Associates, Inc  
4696 Broadway Street  
Boulder, Colorado 80304

Subject: **CARSON CITY GATEWAY PROJECT  
CARSON CITY, NEVADA  
GEOTECHNICAL INVESTIGATION**

Dear Mr. Kuhn:

This report presents our findings, conclusions and recommendations regarding geotechnical aspects of developing three sign sites as part of the Carson City Gateway Project. The site locations are shown on Figure 1. Two of the sites are located along US-395 South; one at the north end of Carson City and the other at the south. The third site is located at the eastern entrance to Carson City along US-50. All of the proposed sites are located within NDOT right-of-way. Each of the proposed sites will include a 22-foot-wide by 14-foot-high sign. Each sign will be constructed on raised structural fill embankments as shown on the Typical Detail Figure 2. Short retaining walls from 2 to 4 feet in height may be used on the downhill side of some of the signs to limit the amount of fill required. Either rockery or segmental concrete-masonry walls are currently being considered by the design team. Conceptual drawings, preliminary structural details and topography of each of the sites are attached as Figures 2 through 6. No foundation or retaining wall plans have been finalized at the time of our report. In our opinion, no adverse geotechnical conditions are present that would preclude development at these sites provided recommendations of this report are incorporated into the design and construction of the project.

The purpose of our limited investigation was to evaluate subsurface soil and geologic conditions at each site and provide conclusions and recommendations relative to the geotechnical and geological aspects of designing and constructing the project as presently proposed. This report is considered limited in that it does not address site-specific liquefaction analysis or environmental concerns, and exploration depths were two to three feet below the surface. Our scope was developed considering the low risk of the project from a life-safety perspective.

For future development of the sign sites, it is assumed that a structural and/or civil engineer will address site-specific seismic design, construction specifications, along with the preparation of the site grading plans, structural plans, and details.

# ATTACHMENT C

Conclusions presented herein are based on site observations, laboratory testing, and on review of readily available published soils data, geologic maps, and fault maps. Our professional services have been performed in accordance with generally accepted geotechnical engineering principles and practices used in the site area at this time. No warranty is provided, express or implied.

To aid in the preparation of this report, we discussed the project with you and the design team, and reviewed the following documents:

- *Carson City Gateway Signage Images*, Winston Associates, Inc., March 2010
- United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS), Soil Data Mart's *Soil Survey Geographic Database for Douglas County Area, Nevada* (2006) (<http://soildatamart.nrcs.usda.gov/>).
- United States Department of Agriculture, (NRCS), *Web Soil Survey* (<http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>).
- *Quaternary Fault and Fold Database for the United States*, accessed May, 2010, from USGS website: <http://earthquake.usgs.gov/regional/qfaults/>
- *Digital Flood Insurance Rate Map Nos.: 3200010083E north site* (revised January 2009), *32005C0060G south site* (revised January 2010), and *3200010104E east site* (revised January 2009), Carson City & Douglas County, Nevada, Digital Flood Insurance Rate Map accessed May, 2010, from website: <https://hazards.fema.gov/wps/portal/mapviewer>
- *USGS Interactive Hazard Maps, Lower 48 States* (2008): Map accessed May, 2010, from website: <http://gldims.cr.usgs.gov/website/nshmp2008/viewer.htm>
- *Carson City 7.5-Minute Geologic Map Quadrangle*, Nevada Bureau of Mines and Geology, 1977.
- *New Empire 7.5-Minute Geologic Map Quadrangle*, Nevada Bureau of Mines and Geology, 1977.
- *Genoa 7.5-Minute Geologic Map Quadrangle*, Nevada Bureau of Mines and Geology, 1980.
- *Carson City 7.5-Minute Earthquake Hazard Map Quadrangle*, Nevada Bureau of Mines and Geology, 1979.
- *New Empire 7.5-Minute Earthquake Hazard Map Quadrangle*, Nevada Bureau of Mines and Geology, 1979.
- *Genoa 7.5-Minute Earthquake Hazard Map Quadrangle*, Nevada Bureau of Mines and Geology, 1979.

## ***Project Description and Site Conditions***

### North Gateway

The North Gateway site is located on the south side of US-395 South approximately 4,000 feet north of the Arrowhead Drive/N. Carson Street intersection. The proposed site is outside of the

# ATTACHMENT C

freeway concrete barrier wall and therefore cannot be accessed by equipment from the road shoulder. Entry to the site requires exiting US-395 South at Exit 43 and turning west near the bottom of the off-ramp onto a dirt access/maintenance road that leads to the site.

The project site is an approximate 30 feet by 35 feet area located on the freeway embankment slope at an elevation of about 4,925 feet above mean sea level (msl) as shown on Figure 4. The elevation change across the site is roughly 12 vertical feet. A street light standard is located inside the freeway barrier wall a few feet west of the northern edge of the site. Associated with the light standard is a small in-ground electrical junction box. An underground power line that provides service to the street light system is located along the crest of the embankment. No other utilities were identified in the site area during utility clearance efforts.

## South Gateway

The South Gateway site is located on the east side of South Carson Street (US-395 South), approximately one-half mile north of Topsy Lane as shown on Figure 1. Access to the site is from the northbound South Carson Street road shoulder. The site area is roughly 25 feet by 40 feet, and is at an approximate elevation of 4,820 feet as shown on Figure 5. The project site is on a road cut slope increasing in elevation from the west to the east. There is an estimated 10 to 15 foot vertical elevation change across the site. Underground utilities on the east side of South Carson Street within the right of way include gas, multiple telephone lines, and electric. All of the utilities are located either in the street or on the east side of the right of way outside of the proposed project site limits.

## East Gateway

The East Gateway site is located on the north side of US-50, and is a few hundred feet northwest of the Flint Drive intersection. Access to the site is obtained off US-50 via a dirt frontage road that intersects the highway approximately 500 feet to the east. The project site is approximately 40 feet by 50 feet in size at an elevation of roughly 4,880 feet above msl as shown on Figure 6. The site is vegetated with scattered low sagebrush and native grasses. The site is situated on a natural east facing slope that trends down from west to east with an elevation difference of about 4 to 6 feet. An underground fiber optic cable and a buried gas line that parallel the highway are located about 25 feet and 30 feet north of the site.

## **Site Geology**

Information concerning the geologic conditions at the project sites was obtained from a review of: the *Carson City 7.5-Minute Geologic Map Quadrangle*, the *New Empire 7.5-Minute Geologic Map Quadrangle*, and the *Genoa 7.5-Minute Geologic Map Quadrangle*. All three sites are located within the Eagle Valley which is situated at the western margin of the Great Basin Geomorphic Province. Specifically, the geologic conditions mapped at the sites are as follows:

# ATTACHMENT C

## North Gateway

According to the *Carson City Geologic Quadrangle*, the North Gateway site is underlain by Older Pediment Gravel (Qpa) of the late-Holocene (less than 11,000 years old). This unit is characterized by medium dense to dense small cobble to muddy sandy pebble gravel. Engineered sandy roadway embankment fill overlies the native soils and ranges from a few inches to 4 or 5 feet thick along the highway shoulder.

## South Gateway

Based on information displayed on the *Genoa Geologic Quadrangle*, the South Gateway site will be placed on Pediment Deposits of the Indian Hills (Qtg) of the early-Pleistocene (1.8 to 2.6 million years old). This material is described as medium dense to dense, sandy pebble to cobble gravel.

## East Gateway

The *New Empire Geologic Quadrangle* shows that the site is mapped as being underlain by the Alluvial Fan Deposits of Morgan Hill (Qta) of the Pliocene Epoch (Between 5.3 to 2.6 million years old). Contrary to the mapping, we observed bedrock outcrops of basaltic andesite rock with a thin soil veneer in the highway cut slope within 50 feet of the proposed sign location. The outcrops closely match the map unit Basaltic Vent Complex (Qtb1) of the early-Pleistocene Epoch (1.8 to 2.6 million years old). This unit is shown on the geologic map about 800 feet west of the site. The Basaltic Andesite Complex is described as being a very fine grained basaltic andesite.

## ***Faulting and Fault Rupture Hazards***

In order to determine if any faults are located in proximity to the project sites, the Quaternary Fault and Fold database for the United States (<http://earthquake.usgs.gov/regional/qfaults>), provided by the U.S. Geological Survey, 2006, along with the Earthquake Hazard Maps provided by the Nevada Bureau of Mines and Geology (NBMG): *Carson City 7.5 minute Quadrangle*, 1979 (North Gateway site), *Genoa 7.5 minute Quadrangle*, 1979 (South Gateway site), and the *New Empire 7.5 minute Quadrangle*, 1979 (East Gateway site) were reviewed. Additionally, the Earthquake Hazard Maps were used to estimate the potential for ground shaking at each site.

No faults that would be considered active or otherwise are mapped or suspected below the proposed sites. The East Gateway site is located within a few hundred feet of faults that are not considered active.

Although no site-specific fault investigations were conducted, no evidence was found on aerial photography or observed in the field that indicated the presence of on-site faulting. Therefore, the risk of fault rupture at each site is considered very low.

# ATTACHMENT C

## ***Seismicity and Seismic Design***

Carson City is subject to strong ground-shaking in association with earthquakes on nearby faults. According to the *USGS Interactive Hazard Maps, Lower 48 States (2008)*, all three sites reside in an area with a 2% probability of exceedance of 80–120%g in 50 years. Ground shaking intensities for design considerations should be governed by seismic events occurring along the Carson Range, which have been evaluated by the Nevada Bureau of Mines and Geology to be capable of producing earthquakes with a Richter Magnitude on the order of 7.2. The values obtained from the USGS and Bureau are equivalent to a Modified Mercalli Intensity of X or greater.

All three sites should be considered Seismic Design Category D2 when employing the International Residential Code (IRC) for seismic design. If structural design is governed by the International Building Code (IBC), the sites should all be considered Site Class D.

For site design considerations, the sites should be considered to be subject to very strong shaking from the young Carson Range front faults. The seismic risk at any of these sites is not considered to be significantly greater than that of any of the surrounding areas in Carson City with stiff soil profiles and depths to groundwater over 50 feet.

## ***Soils and Groundwater***

Soil condition information presented here was obtained for all three sites from a review of the United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS), *Web Soil Survey* (<http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>) in addition to information obtained from Soil Data Mart's *Soil Survey Geographic Database for Douglas County Area, Nevada (2006)* (<http://soildatamart.nrcs.usda.gov/>). Well logs were reviewed for site adjacent properties via the State of Nevada, Division of Water Resources *Well Log Database* (<http://water.nv.gov/engineering/wlog/wlog.cfm>) in order to obtain information regarding depth to groundwater in the vicinity of the sites. The results of our reviews are described below.

### North Gateway

Review of the *Web Soil Survey and the Preliminary Site Plan*, indicates that the North Gateway sign will be constructed on approximately 1 to 5 feet of engineered fill. The fill will overlie granular soils classified by the USDA as the Roloc-Graufels-Glenbrook Association (soil unit 100), which is a mix between Roloc (slopes 15–50%), Graufels, Very Stony (slopes 15-50%), and Glenbrook, Very Stony (slopes 15-50%). All of these soil units consist of silty to sandy loam (SM, SC-SM & SC, SC-SM, SW), which are underlain by weathered granitic bedrock.

Soil samples of the native and engineered fill soils were collected at two locations within the site boundaries. A fill sample was taken near the top of the existing slope and a native soil sample was taken near the toe of the engineered fill slope. The samples were obtained from approximately 24 inches to approximately 36 inches below the surface at the locations shown on

## ATTACHMENT C

Figure 3. The samples were submitted to our laboratory for grain size analysis the results of which are shown on Figure 6. Based on the laboratory testing the imported embankment materials consist of silty sands (SM) typical of the "Bernhard Pit" which was the borrow source for Phase 1 of the Carson City Bypass project completed in 2008. The Bernard Pit is located approximately one quarter mile northwest of the site.

This site is geomorphically located near the intersection of the Carson Range and Virginia Range. Native soils at the site are derived from the granitic bedrock of the Carson Range and are silty to gravelly sands (SM).

Groundwater flow at this site is southeast toward Carson City. The well logs in this area indicate that the depth to groundwater generally ranges from approximately 100 to more than 150 feet in the vicinity of the site.

### South Gateway

Based on the *Web Soil Survey*, it was determined that the South Gateway sign location will be located on soils classified by the USDA as Prey Gravelly Loamy Sand (soil unit 712) having slopes of 0 to 4%. Prey is described by the Carson City Area, NV Soil Survey Area (V.4, 2009) as being gravelly loamy sand (SM) from the surface down to 13 inches below the surface. Underlying the surface layer from 13 inches to 30 inches is gravelly coarse loamy sand (SM), underlain to a depth of 35 inches by cemented material, which overlies loamy coarse sand (SM) that goes to a depth of 60 inches.

Soil samples were collected at two locations within the site ranging in depth from 24 inches to approximately 36 inches as shown on Figure 4. The soil samples were submitted to our laboratory for grain size analysis the results of which are shown on Figure 7. Based on the results of our laboratory test and observations of the cut slope at the site, the surface soils generally agree with the descriptions reported in the Soil Survey of the Carson City Area.

This site is located at the south end of Carson City north of the Douglas County line. Groundwater generally flows northward toward Carson City. The well logs in this area indicate that the depth to groundwater generally ranges from approximately 40 to 100 feet in the vicinity of the site.

### East Gateway

The *Web Soil Survey* indicates that the East Gateway site is mapped as being underlain by two different soil units that each covers about half the site. The map units are the Xerta Rock Outcrop Complex (soil unit 78) and the Reno Cobbly Sandy Loam (soil unit 99). Field observations indicate that the soils map does not accurately describe the site soil conditions. Our observations indicate as discussed in the site geology section that the site is underlain by volcanic bedrock with only a thin veneer up to a few inches in some locations. The thin soil veneer is reflective of the soils descriptions and it is apparent that those soils deepen away from the bedrock outcrop on the

# ATTACHMENT C

site. No soil samples were obtained at this site as area planned for the sign consisted mainly of rock outcrop. In lieu of soil sampling, the outcrop material was tested in the field via Schmidt hammer in order to obtain information on the unconfined compressive strength of the material.

Groundwater in the vicinity of the site generally flows westward toward Carson City. Well logs from this area indicate that the depth to groundwater generally ranges from approximately 500 to more than 1,000 feet below the surface. Fluctuations in the level of groundwater may occur due to variations in rainfall, temperature, and other factors.

## ***FEMA Flood Map***

The Federal Emergency Management Administration's (FEMA's) Flood Insurance Rate Map (FIRM) for each site was reviewed to determine if any of the project sites exist within a 0.2% annual chance floodplain. The results of our review are as follows:

### North Gateway

The Carson City, NV Map Panel No. 3200010083E, revised January 2009, was reviewed for the North Gateway location. According to the FIRM, the Site is located within Zone D. Zone D is designated as an area where there is possible, but undetermined flood risk. Based on the drainage improvements implemented during the design of the freeway, the risk of flooding at the site is considered to be low.

### South Gateway

The Douglas County, NV Map Panel No. 32005C0060G, revised January 2010, was reviewed for the South Gateway location. According to the FIRM, the site is located within Zone X (unshaded) indicating it exists outside the 0.2% annual chance floodplain. Drainage improvements being currently installed for the US-395 Widening project will further reduce the risk of flooding at the site.

### East Gateway

The Carson City, NV Map Panel No. 3200010104E, revised January 2009, was reviewed for the East Gateway location. According to the FIRM, the site is located within Zone X (unshaded) indicating it exists outside the 0.2% annual chance floodplain.

## ***Liquefaction***

Liquefaction is the phenomena whereby saturated sandy soils loose their strength when subjected to cyclic loading typically induced by large earthquakes. No specific liquefaction analysis has been requested or performed at any of the project sites. Based on the mapped low to moderate ground shaking intensities, estimated depths to groundwater, and the dense nature of native soils (and bedrock) the risk of liquefaction is considered low at the sites.

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## ***Expansive Soils***

At the North and South Gateway site locations, laboratory testing and visual observation of the site soils demonstrated that there is not a significant amount of fine cohesive soils susceptible to swelling. At the East Gateway site it was noted that a thin veneer of clay is present over small areas of the dense bedrock. Due to the thin nature of these soils and proposed depth of fill to be placed, the risk of expansive soil hazard at this site is considered low.

## **CONCLUSIONS AND RECOMMENDATIONS**

The intent of the following recommendations is to provide general specifications for clearing, grubbing, and grading of the project sites including structural areas. It is anticipated that the majority of grading activities will require only conventional equipment capable of operating on, excavating, and compacting loose to dense granular soils present at the North Gateway and South Gateway sites. It is anticipated that at the East Gateway site heavy excavation equipment will be necessary if cuts into the very dense bedrock are required either for site grading or for utility installation.

### ***General Grading Recommendations***

Vegetation, stockpiled soil, undocumented fills (if any, within structural areas as a minimum) and all debris should be removed from construction areas prior to commencement of grading. The depth of clearing and grubbing is estimated to be from one to six inches across each site.

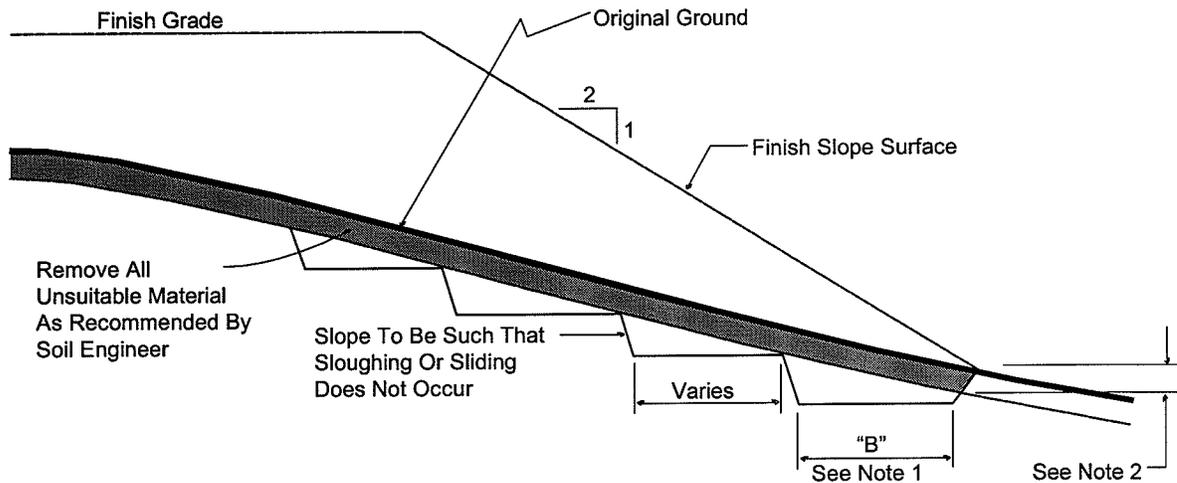
If significant root structure is encountered in structural areas of the site, the depth of clearing and grubbing should be extended as necessary. Removed vegetation should be disposed of offsite or mulched and utilized on-site in landscape areas only. It should be noted that during grading, if any areas of soil stockpiles or undocumented fill (if any) are identified, it is recommended that the grading be monitored by the engineer to verify the complete removal of the unsuitable materials.

It is anticipated based on preliminary plans that each of the signs will be constructed on raised fill pads. We have recommended in discussions with the design team that the raised pads be constructed with 8-inch to 16-inch cobble rock fill. If cobble rock fill construction is chosen, the fill should be placed in accordance with NDOT *Standard Specifications for Road and Bridge Construction* (Silver Book) requirements, Section 203.03.16.

All of the embankments proposed to support the signs will be constructed on existing cut or fill slopes steeper than 6:1 (horizontal: vertical). Therefore we recommend that the underlying ground be benched in accordance with the following illustration.

# ATTACHMENT C

## TYPICAL BENCHING DETAIL



No Scale

### DETAIL NOTES:

- (1) Key width "B" should be a minimum of 10 feet wide, or sufficiently wide to permit complete coverage with the compaction equipment used. The base of the key should be inclined slightly into the natural slope.
- (2) The outside of the bottom key should be below the topsoil or unsuitable surficial material and at least 2 feet into dense formational material. Where hard rock is exposed in the bottom of the key, the depth and configuration of the key may be modified as approved by the Geotechnical Engineer.
- (3) The detail shows a 2:1 finish slope intended for structural fill materials, if 8 to 16 inch diameter angular cobble rock fill is used the finish slope may be designed at 1.5:1

Import structural fill material obtained from an off-site location (if required) should be sampled and approved by Geocon Consultants, Inc. prior to its transportation to and use at the site.

Due to the fact that the sign foundations will be constructed on structural fill above the general level of the adjacent roadway, the risk of sulfate or chloride damage (including from road salts) to concrete elements is considered low. The risk of corrosion to uncoated steel should be considered moderate to severe from native soils based on the Soil Conservation Service data as is typical throughout the Carson City area. Specific chloride, sulfate, pH and resistivity data can be provided upon request.

## ATTACHMENT C

Trench support methods consistent with OSHA Type C soils will be required on the North Gateway and South Gateway sites. The East Gateway site may be considered bedrock requiring no shoring to depths up to 6 feet below the surface. Deeper excavations if necessary should be monitored by the Geotechnical Engineer to determine the continuity of materials.

### ***Foundation Design Criteria***

The sign foundation loads will be relatively light, on the order of 500 pounds per square foot (psf) according to the Structural Engineer for the project. Preliminary design shows that each sign will be supported on an 8 foot by 25 foot rectangular spread footing as shown on Figure 3.

Footings placed on compacted native granular soils or on Structural Fill meeting the requirements of *The Standard Specifications for Public Works Construction* (200.01.08) may be designed for allowable soil bearing pressures of 2,000 pounds per square foot (psf) for all three of the sites. The footing should be embedded at least 18 inches below adjacent grade. These embedment recommendations are crucial for frost protection, to develop bearing capacity, and to provide lateral force resistance to sliding. Final surface grading should provide for positive drainage away from sign structures. Footing and foundation backfill should be compacted to at least 85% in landscaped areas or 90% below paving, exterior concrete slabs or flatwork (if any).

The passive and active pressures used to resist lateral movement of conventional footings may be assumed to be equal to a fluid weighing 300 pounds per cubic foot (pcf) per foot of depth and 40 pcf per foot of depth, respectively, at all three sites if the footings are constructed on native soil or structural fill. If footings or retaining walls are backfilled with angular rock fill or drain rock, the passive and active pressures should be 450 pounds per cubic foot (pcf) per foot of depth and 35 pcf per foot of depth, respectively.

A conservative coefficient of friction to resist sliding of 0.35 for concrete against structural fill or native soils is recommended for all three sites. This value may be increased to 0.45 for foundations placed on native rock or compacted rock fills. Combined passive resistance and friction may be utilized for design of footings provided that the frictional resistance is reduced by 50%.

Foundation reinforcement should be designed by the project structural engineer and comply with applicable Codes and local ordinances.

Adjacent utilities should not be constructed in the zone of influence parallel to footings. The zone of influence may be taken to be the area beneath the footing and within a 1:1 plane extending out and down from the bottom of the footing. Utility penetrations into the structure envelope should be made perpendicular to the foundation wall if possible.

Post-construction total and differential settlements under static loading conditions are estimated to be less than 1 inch and 3/4 inch respectively.

## ATTACHMENT C

Footings should be underlain by a minimum of 4 inches of compacted (95% minimum relative density) Type 2, Class B aggregate base. Where the footing will be placed over cobble rock fills or bedrock, a leveling course compacted aggregate base is recommended with a minimum thickness of 4 inches above any angular projections. The leveling course should be compacted to at least 90% maximum dry density. The leveling course should be in addition to the 4 inches of compacted aggregate base recommended above.

All exterior concrete should be air entrained with from 4.5% to 7.0% air content. The water cement ratio for all exterior concrete should be 0.45 or less. The use of mid-range plasticizer is recommended to facilitate the finishing process while maintaining the desired water cement ratio.

Exterior concrete should be placed and finished in accordance with American Concrete Institute (ACI) recommendations for concrete placed in areas subject to freeze-thaw environments.

### ***Site Drainage***

Adequate drainage is crucial to reduce the potential for differential soil movement, erosion and subsurface seepage. Under no circumstances should water be allowed to pond adjacent to footings. The site should be graded and maintained such that surface drainage is directed away from structures and the top of slopes into swales or other controlled drainage devices. The percent fall of slopes around structures should be as per the most current version of the IBC and local ordinances adopted by Carson City.

### ***Limitations***

The information contained in this report is based on standards of investigation and design guidelines generally accepted in the site area at the time of this report, and on our understanding of the project scope as outlined herein.

This limited report is issued with the understanding that it is the responsibility of the owner, or a designated representative, to ensure that the information and recommendations contained herein are distributed to the design team. No guarantee as to the continuity of soils or other geologic conditions across the site is implied or intended. No environmental work has been performed in the preparation of this report and is excluded from our scope of services.

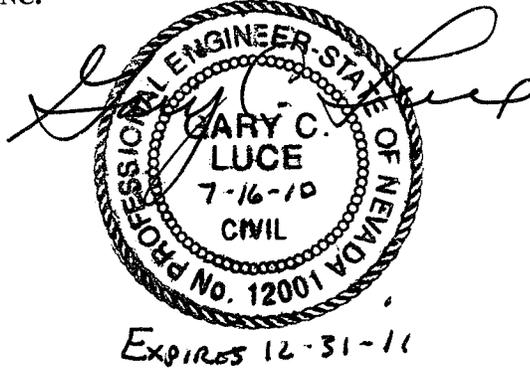
The findings of this report are valid as of the present date. However, changes in the conditions of a property can occur with the passage of time, whether they are due to natural processes or the works of man on this or adjacent properties. In addition, changes in applicable or appropriate standards may occur, whether they result from legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated wholly or partially by changes outside our control. Therefore, this report is subject to review and should not be relied upon after a period of one year.

# ATTACHMENT C

Please contact us should you have any questions regarding this report, or if we may be of further service.

Sincerely,

**GEOCON CONSULTANTS, INC.**



Gary Luce, PE  
Senior Engineer/Geologist

GL:sf

(2) Addressee

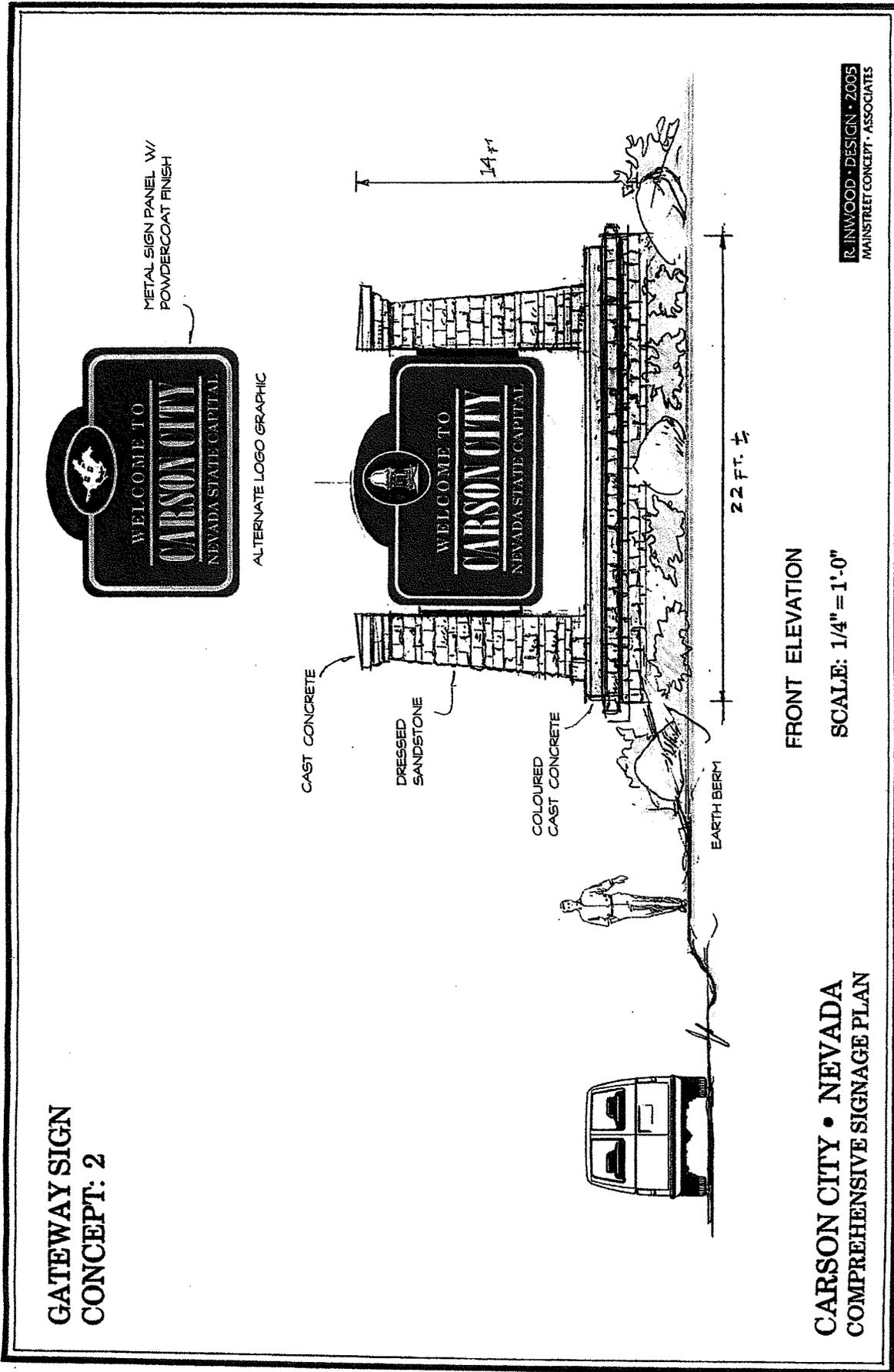
Attachments: Figures 1-8



VICINITY MAP - CARSON CITY GATEWAY PROJECT  
CARSON CITY, NEVADA



JOB NO. R8675-06-01  
JULY 2010  
FIGURE 1



# ATTACHMENT C

FIGURE 3

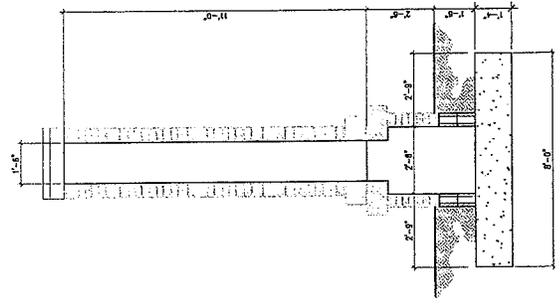
## CARSON CITY GATEWAY SIGNAGE PROJECT CARSON CITY, NEVADA

SCALE: ELECTRIC / MECHANICAL DATE: 07/20/10  
 PURPOSE: SIGNAGE  
 WINSTON ASSOCIATES  
 4696 Broadway  
 Reno, NV 89502  
 Phone (775) 784-8900  
 Fax (775) 784-8901  
 www.winstonassoc.com

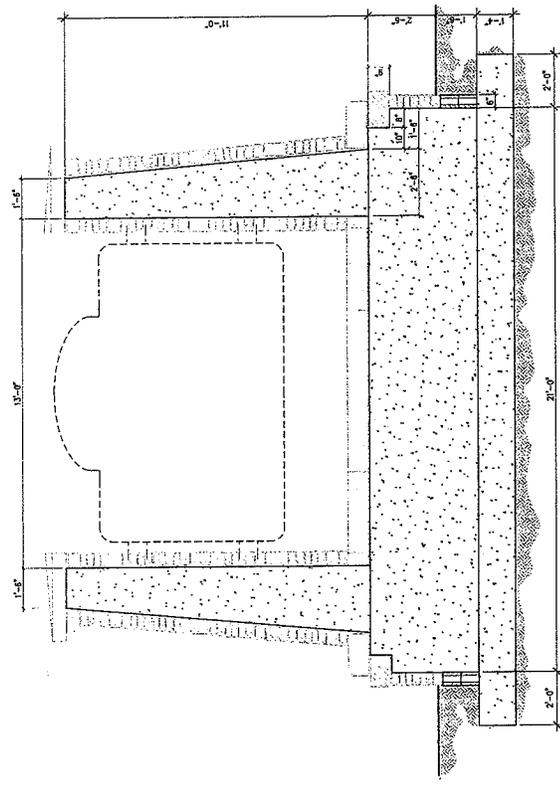


PREPARED FOR:  
 SHEET NAME:  
 PLANS, SECTIONS AND ELEVATIONS  
 DATE: 07/20/10  
 DRAWN BY: J.M.L.  
 CHECKED BY: B.M.  
 DESIGNED BY:  
 DATE: 07/20/10  
 SHEET: S-2

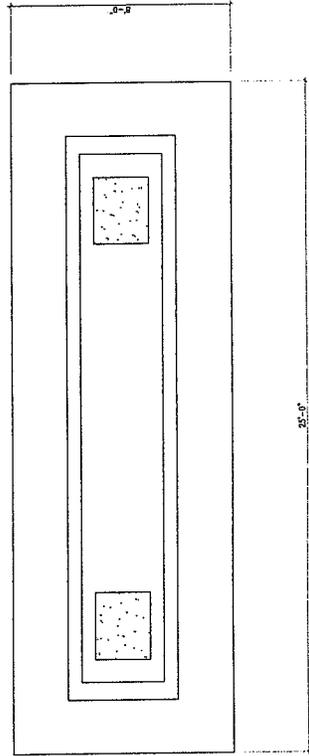
S-2



SECTION 2  
1/8" = 1'-0"



SECTION 1  
1/8" = 1'-0"

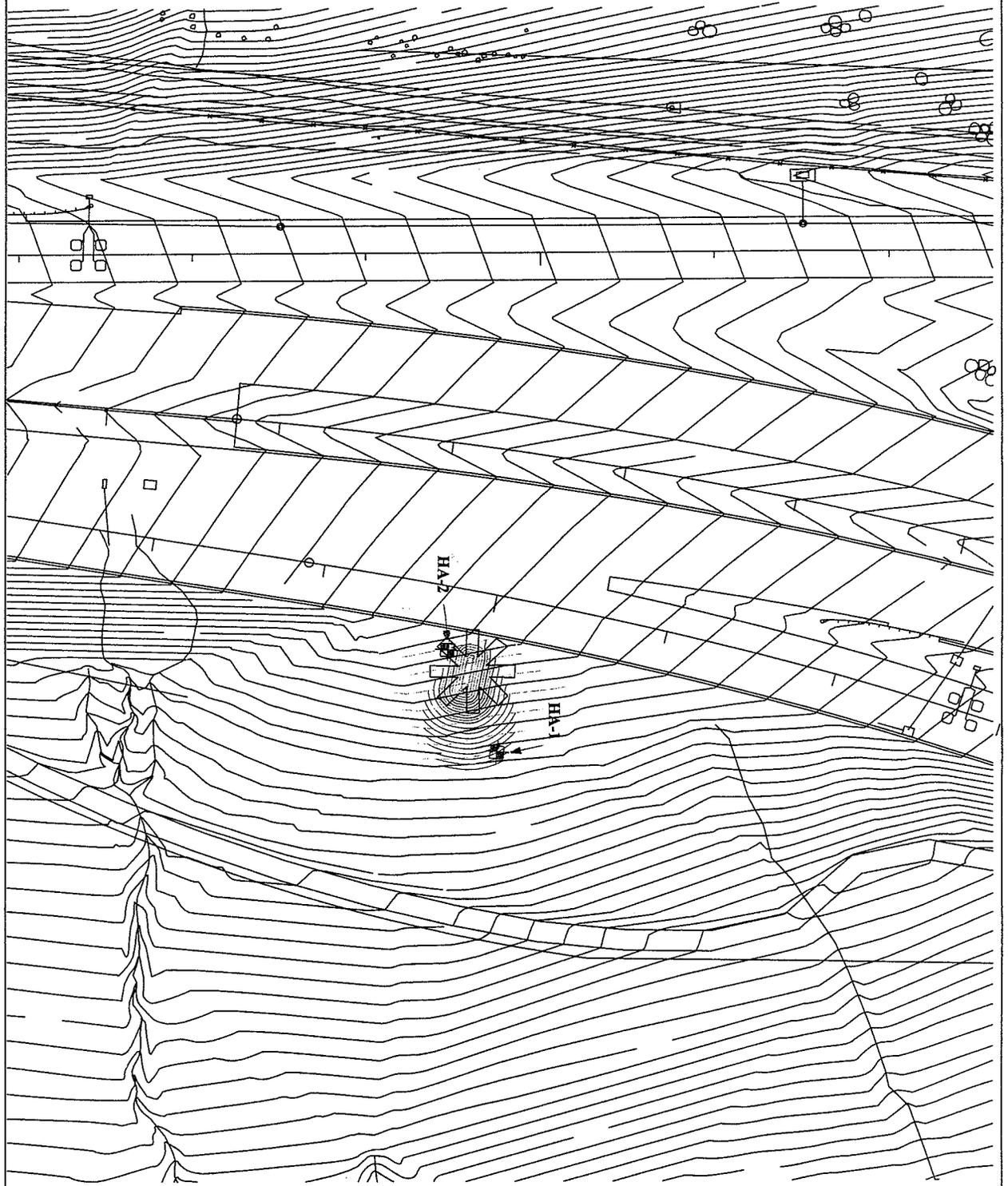


PLAN 3  
1/8" = 1'-0"

HYTTINEN ENGINEERING  
 3425 Longley Lane, Suite 6  
 Reno, NV 89502  
 Phone (775) 826-3019  
 Fax (775) 826-3076



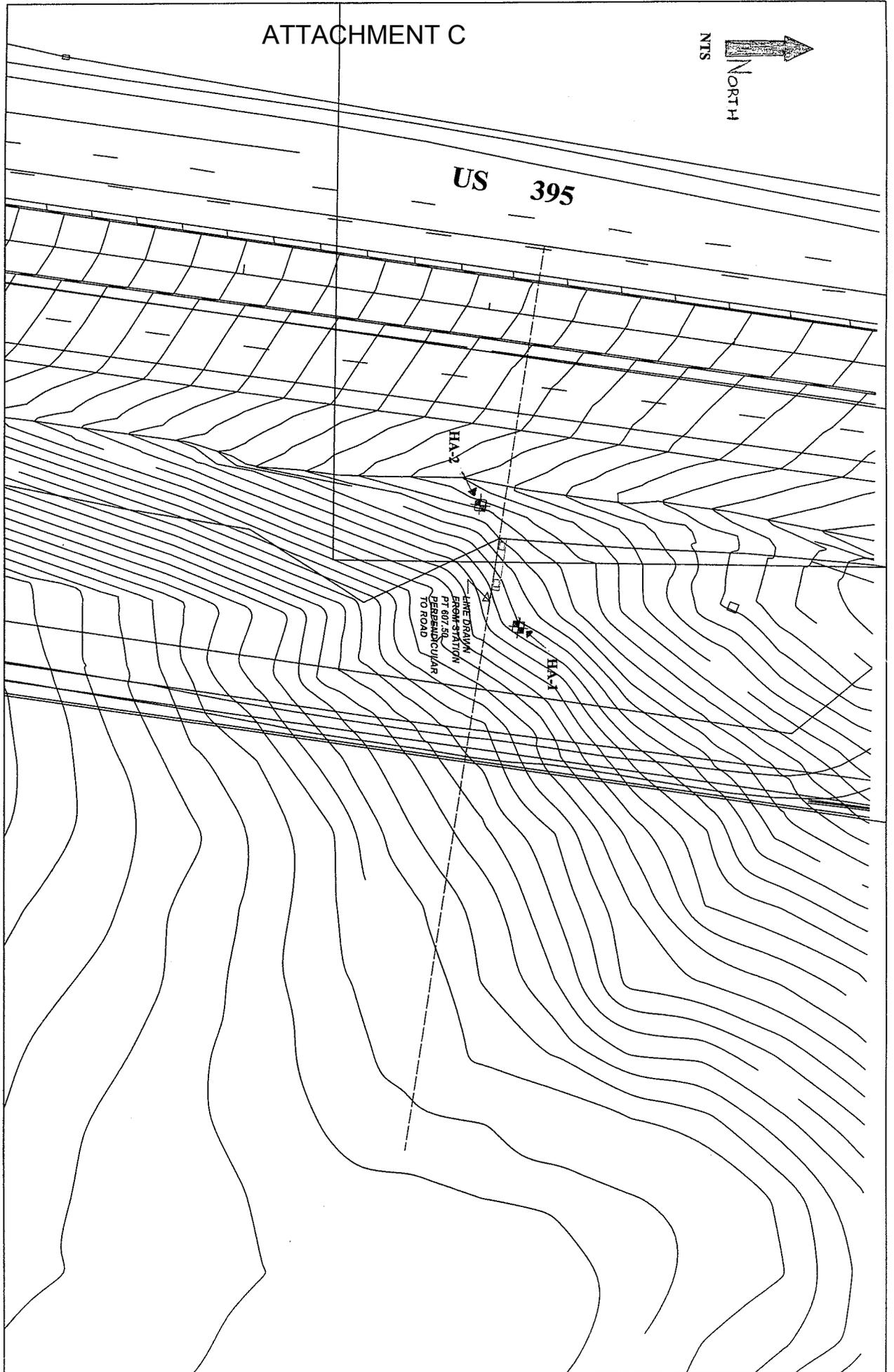
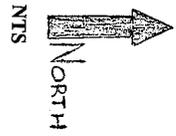
ATTACHMENT C



North Gateway Site Plan

Project No. R8675-06-01

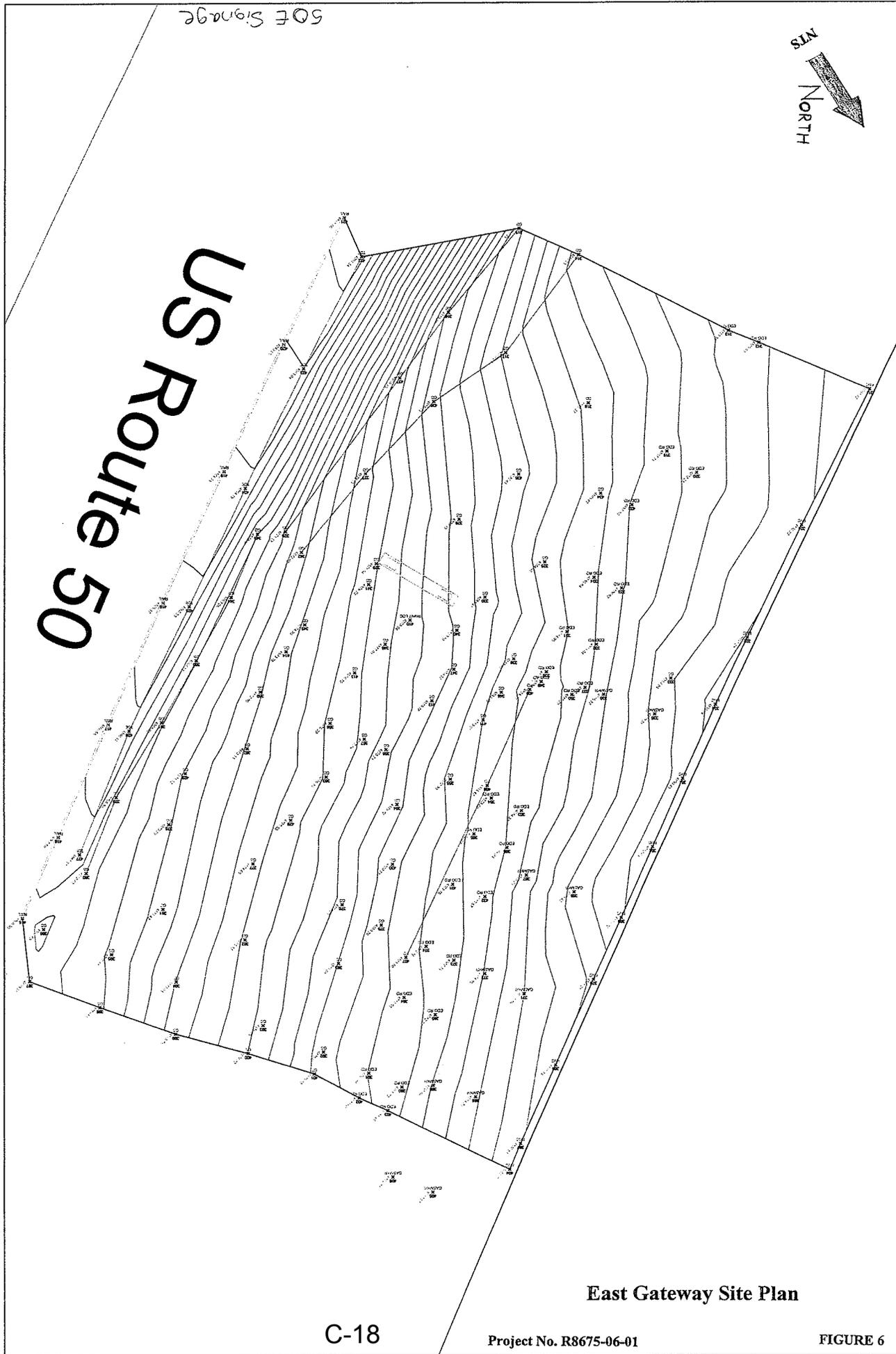
FIGURE 4





SOE Signage

US Route 50



East Gateway Site Plan

# ATTACHMENT C

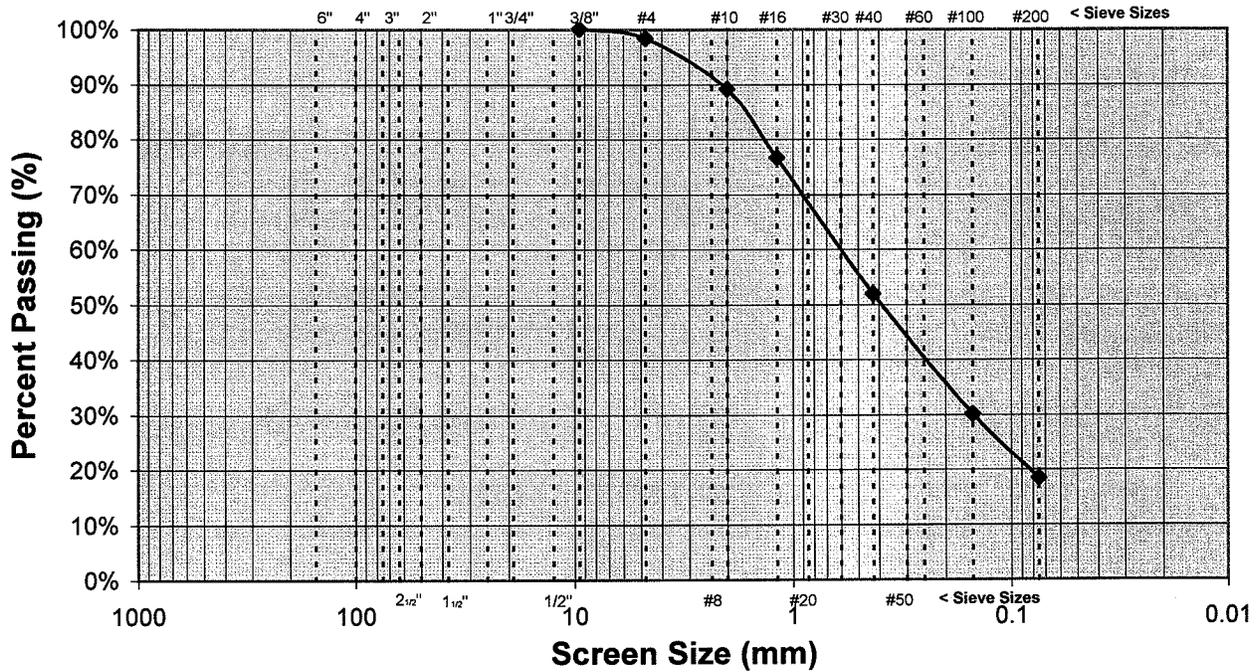


**GEOCON, INC.**  
 4010 Technology, Unit D Carson City, NV  
 775-888-9900 ofc/775/888-9904 fax

Project:	Carson City Gateway
Project No:	R8675-06-01
Lab No:	CC572
Date Sampled:	6/24/2010
Date Tested:	6/25/2010
Sample No:	North Gate HA-1 Downhill
Material Desc:	Silty Sand (SM)
	Munsell Color 7.5YR (6/2) Pinkish Gray

## Sieve Analysis-ASTM C136/AASHTO T27

### Soil Gradation



		Sieve Size	Percent Passing	Specification	
Tr & Wt Samp:	533.4				GRAVEL %
Tr & Dry Samp:	532.2				
Water Loss:	1.2	6"			
Tare Weight:	224.5	4"			
Dry Weight:	307.7	3"			
% Moisture:	0.4%	2 1/2"			
		2"			
		1 1/2"			SAND %
		1"			
		3/4"			
		1/2"			
		3/8"	100%		
		#4	98%		
		#8			
		#10	89%		
		#16	77%		
		#20			
		#30			
		#40	52%		
		#50			
		#60			
		#100	30%		
		#200	18%		
					FINES %

**Figure 7**

# ATTACHMENT C

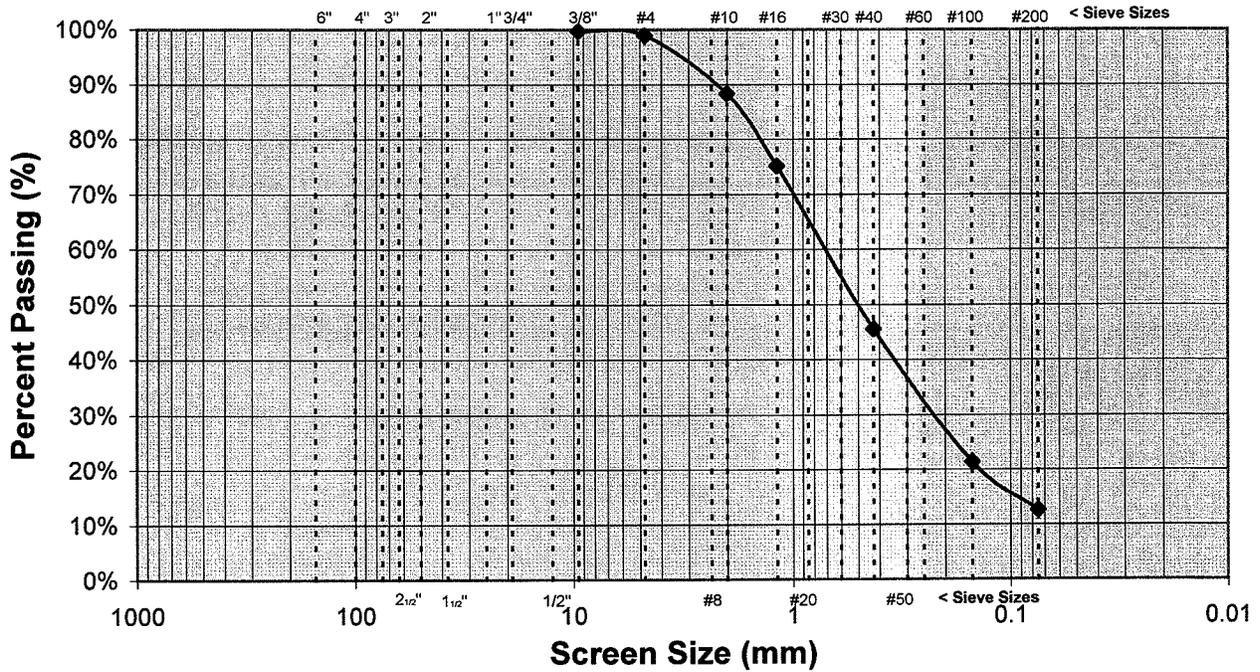


**GEOCON, INC.**  
 4010 Technology, Unit D Carson City, NV  
 775-888-9900 ofc/775/888-9904 fax

Project:	Carson City Gateway
Project No:	R8675-06-01
Lab No:	CC572
Date Sampled:	6/24/2010
Date Tested:	6/25/2010
Sample No:	South Gate HA-1- Downhill
Material Desc:	Silty Sand (SM)
	Munsell Color 7.5YR (6/8) Reddish Yellow

## Sieve Analysis-ASTM C136/AASHTO T27

### Soil Gradation



		Sieve Size	Percent Passing	Specification	
Tr & Wt Samp:	616.9				
Tr & Dry Samp:	599.3				
Water Loss:	17.6	6"			GRAVEL %
Tare Weight:	200.8	4"			
Dry Weight:	398.5	3"			
% Moisture:	4.4%	2 1/2"			
		2"			
		1 1/2"			
		1"			
		3/4"			
		1/2"			
		3/8"	100%		
		#4	99%		SAND %
		#8			
		#10	88%		
		#16	75%		
		#20			
		#30			
		#40	45%		
		#50			
		#60			
		#100	21%		
		#200	13%		FINES %

**Figure 8**