

**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-city.nv.us/Index.aspx?page=998>



**ADVERTISED BID #1011-051
BID TITLE "PRISON HILL WATER TANK #2 TANK
CONSTRUCTION PLANS"
Labor Commissioner PWP# CC-2010-378
Public Works Project No. 6-6019
Engineer's Estimate: \$2,000,000
PREPARED DATE: June 29, 2010**

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

SUMMARY

Carson City is accepting sealed bids for all labor, materials, tools and equipment necessary to construct a new 3 million gallon steel water tank and new 20" PVC water line located in Carson City, Nevada. This project will include all earth work, trenching, plumbing and piping, fencing, concrete, electrical conduits and panels, vaults and tank coatings for the complete installation of the new water tank. This project also includes the demolition and disposal of an existing 3 Million Gallon concrete water tank. This project includes all common phases of construction customarily associated with this type of project. Bids must be submitted in accordance with the plans, specifications and special conditions.

CONTRACTOR'S LICENSE: Carson City has determined that the responsive bidder must possess a minimum of a Class A General Engineering license with appropriate sub-classifications or subcontractors. All Contractor licenses shall be in good standing and 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-city.nv.us/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

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

Reno Builder's Exchange, 634 Ryland Street, Reno NV 89502 (775) 786-4468 www.renobuildersx.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-city.nv.us/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.

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 11:00 a.m. on July 16, 2010. 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 11:10 a.m. on July 16, 2010, 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 Sandy Scott-Fisher at SScott@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 Board of Supervisors and is scheduled for Thursday, August 5, 2010, and their decision is final. The Carson City Board of Supervisors meeting will be held in the Sierra Room of the Carson City Community Center, 851 East William Street, Carson City, Nevada 89701. beginning at 8:30 a.m.

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

Signature in Project File

Sandy Scott-Fisher, Contracts Coordinator

Signature in Project File

Andrew Burnham, Public Works Director

Signature in Project File

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**
Sandy Scott-Fisher, Contracts Coordinator
Carson City Purchasing and Contracts
201 North Carson Street, Suite 3
Carson City, Nevada 89701
775-887-2133 x7137
FAX 775-887-2107
SScott@carson.org

- B. Owner's Representative**
Andrew Burnham, Public Works Director
Carson City Public Works Department
3505 Butti Way
Carson City, Nevada 89701
775-887-2355 x 7367
FAX No. 775-887-2112
ABurnham@carson.org

- C. Construction Manager**
TBD

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: "Prison Hill Water Tank #2 Tank Construction Plans"

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 Coordinator 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.

INSTRUCTIONS TO BIDDERS

- Each Bid shall be submitted in a sealed envelope and the envelope must be prominently marked on the lower left corner as follows:

SEALED BID

BID NO.: 1011-051

OPENING: July 16, 2010 at 11:10 am

COMPANY NAME:

- The local prevailing wage rates for Carson City, as established by the Nevada Labor Commission and the Davis-Bacon Act, shall be paid for all classifications of labor on this project. Also, in accordance with NRS 338, the hourly and daily wage rates must be posted at the work site by the Contractor. The Contractor shall ensure that a copy of the Contractor's and Subcontractor's certified payrolls for each calendar month is received by Carson City. The prevailing wage rates for this project are included in Attachment "A", additional information is available at:

State of Nevada
Department of Business and Industry
Office of Labor Commissioner
1445 Hot Springs Road, Suite 108
Carson City, Nevada 89701
(775)687-4850
www.laborcommissioner.com

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**

- 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

- 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.

INSTRUCTIONS TO BIDDERS

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.

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.

INSTRUCTIONS TO BIDDERS

M. Bidders Representation

Each Bidder by submitting its Bid represents that:

1. The Bidder, signing the Proposal summary 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.
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 NIOSH 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 after 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.

INSTRUCTIONS TO BIDDERS

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.

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.

INSTRUCTIONS TO BIDDERS

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 Coordinator 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 Coordinator's Office in writing or an authorized representative must present himself with proper identification to the Contract Coordinator'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.

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.

INSTRUCTIONS TO 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;
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;

INSTRUCTIONS TO BIDDERS

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.

IB.7 AMERICAN RECOVERY AND REINVESTMENT ACT (ARRA) OF 2009

A. Compliance with Other Federal Statutes and Authorities

A number of other federal laws and authorities will be applied to loans supported with the equivalent portion of Federal funds from the capitalization grant made available through the loan. Attachment C contains a current list of these other laws and authorities. Contractor and their subcontractors agrees that it will, at all times, comply with all applicable federal, state and local laws, regulations and requirements.

B. Minority Business Enterprise (MBE), Small Business Enterprise (SBE) and Women Business Enterprise (WBE)

Carson City desires that qualified MBE's, SBE's and WBE's have the maximum opportunity to participate in the performance of contracts in conjunction with this Project. Fair share percentages for organizations owned or controlled by socially or economically disadvantaged individuals Minority Business Enterprise of Small Business Enterprise, Woman Business Enterprise, and historically black colleges and universities have been established for prime contracts for construction, services, supplies or equipment in conjunction with this Project.

The following are the fair share percentages that have been established:

	MBE/SBE	WBE
Construction	12%	10%
Services	7%	25%
Supplies	13%	28%
Equipment	11%	23%

C. Davis-Bacon Act Prevailing Wages

Pursuant to section 1606 of the ARRA of 2009, the Davis-Bacon Act wages rules apply to this project.

The higher of the Federal or local prevailing wage rates for Carson City, as established by the Nevada Labor Commissioner and the Davis-Bacon Act, shall be paid for all classifications of labor in this project. Also, in accordance with NRS 338, the hourly and daily wage rates must be posted at the work site by the Contractor. The Contractor shall ensure that a copy of the Contractor's and subcontractor's certified payrolls for each calendar month is received by Carson City. The prevailing wage rates for this project are included in Attachment A and Attachment B, additional information is available at:

State of Nevada
Department of Business and Industry
Office of the Labor Commissioner
1445 Hot Springs Road, Suite 108
Carson City, Nevada 89701
775-687-4850

INSTRUCTIONS TO BIDDERS

D. American Iron, Steel and Manufactured Goods

Section 1605 of the ARRA of 2009 required that none of the appropriated funds may be used for the construction, alteration, maintenance, or repair of a public building or public work unless all of the iron, steel and manufactured goods used for the project is produced in the United States unless (a) a waiver is provided to the City by EPA or (b) compliance would be inconsistent with United States obligations under international agreement. In order to receive a waiver, the City and NDEP must prepare a written request and send it to the EPA Administrator. A decision will be made based on the following criteria:

1. The requirement is inconsistent with the public interest for purposes of the project for which a waiver has been requested,
2. Iron, steel, and necessary manufactured goods are not produced in the United States in sufficient and reasonable available quantities and of a satisfactory quality, or
3. Inclusion of iron, steel, and manufactured goods produced in the United States will increase overall cost of the project by more than 25percent.

A recipient and/or contractor that fails to comply with the "Buy American" requirements of this section, may subject themselves to efforts to recover the federal funds that were expended on the non-complying goods, and maybe subject to the costs of such recovery efforts.

E. Reallocation of Funds

Under the ARRA of 2009, all projects must be under construction contract on or before February 17, 2010. If in the opinion of Division, the recipient is not making sufficient progress to meet the February 17, 2010 deadline, the Division will issue a notice to terminate the loan agreement and reallocate any remaining funds.

F. List of Federal Laws and Authorities

ENVIRONMENTAL

1. Archeological and Historic Preservation Act of 1974, PL 93-291
2. Clean Air Act, 42 U.S.C. 7506 (c)
3. Endangered Species Act 16 U.S.C. 1531, et seq.
4. Executive Order 11593, Protection and Enhancement of the Cultural Environment.
5. Executive Order 11988, Flood Plain Management
6. Executive Order 11990, Protection of Wetlands
7. Farmland Protection Policy Act, 7 U.S.C. 4201 et seq.
8. Fish and Wildlife Coordination Act, PL 85-624, as amended
9. National Historic Preservation Act of 1966, PL 89-665, as amended
10. Safe Drinking Water Act, Section 1424(e), PL 92-523, as amended

G. ECONOMIC

1. Demonstration Cities and Metropolitan Development Act of 1966, PL 89-754, as amended
2. Section 306 of the Clean Air Act and Section 508 of the Clean Water Act, including Executive Order 11738, Administration of the Clean Air Act and the Federal Water Pollution Control Act and the Federal Water Pollution Control Act with Respect to Federal Contracts, Grants or Loans

H. SOCIAL LEGISLATION

1. Age Discrimination Act, PL 94-135
2. Civil Rights Act of 1964, PL 88-352
3. Section 13 of PL 92-500; Prohibition against sex discrimination under the Federal Water Pollution Control Act
4. Executive Order 11246, Equal Employment Opportunity
5. Executive Order 11625 and 12138, Women's and Minority Business Enterprise
6. Rehabilitation Act of 1973, PL 93, 112

INSTRUCTIONS TO BIDDERS

I. MISCELLANEOUS AUTHORITY

1. Uniform Relocation and Real Property Acquisition Policies Act of 1970, PL 91-646
2. Executive Order 12549-Debarment and Suspension

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 # 1011-051** and titled "**Prison Hill Water Tank #2 Tank Construction Plans**".

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.

Executed on this ____ day of _____ 2010

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 _____ 2010
(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 # 1011-051

BID TITLE: PRISON HILL WATER TANK #2 TANK CONSTRUCTION PLANS

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.

SUMMARY

Description		Scheduled Value	Unit	Unit Price	Total Price
Schedule A: Prison Hill Water Tank #2 Site Work					
BP.1)	Mobilization/demobilization and Cleanup for New Tank. (SC.6.7.1)	1	L.S.		
BP.2)	New Tank Site Clearing, Grubbing and Disposal. (SC.6.7.2)	1	L.S.		
BP.3)	Pot-holing and Layout Prior to Commencement of Work. (SC.6.7.3)	2	EA.		
BP.4)	New Tank Site Excavation, Grading and Revegetation. (SC.6.7.4)	1	L.S.		
BP.5)	Type II Aggregate base (SC.6.7.5)	1	L.S.		
BP.6)	Fire Hydrant Assembly (SC.6.7.6)	1	EA.		
BP.7)	20" DR-25 PVC Water Supply Line (SC.6.7.7)	310	L.F.		
BP.8)	12" DR-18 PVC Water Line for Overflow (SC.6.7.8)	110	L.F.		
BP.9)	Altitude Valve Vault and Equipment (SC.6.7.9)	1	L.S.		
BP.10)	6 foot Chain Link Fence and Gates (SC.6.7.10)	1	L.S.		
BP.11)	Rock Rip Rap (SC.6.7.11)	1	L.S.		
BP.12)	Telemetry and Solar Panel Cabinets, Support Structure and all Electrical (SC.6.7.12)	1	L.S.		
Schedule A: Subtotal					
Schedule B - Prison Hill Water Tank #2-Tank Construction					
BP.13)	Mobilization/demobilization and Cleanup. (SC.6.7.1)	1	L.S.		
BP.14)	Water Tank Concrete Foundation. (SC.6.7.13)	1	L.S.		
BP.15)	Gravel Drain Rock For Tank Foundation (SC.6.7.14)	1	L.S.		

BID PROPOSAL

Description		Scheduled Value	Unit	Unit Price	Total Price
BP.16)	3 Million Gallon Steel Water Tank. (SC.6.7.15)	1	L.S.		
BP.17)	Blast and Coat Tank Interior (SC.6.7.16)	1	L.S.		
BP.18)	Blast and Coat Tank Exterior (SC.6.7.17)	1	L.S.		
BP.19)	Disinfection of Interior of 3 Million Gallon Steel Water Tank (SC.6.7.18)	1	L.S.		
Schedule B: Subtotal					
Schedule C (ADD/ALT)- Demolition of Existing Prison Hill Water Tank					
BP.20)	Mobilization/demobilization and Cleanup for Demolition of Existing Tank. (SC.6.7.1)	1	L.S.		
BP.21)	Existing Water Tank Demolition and Disposal. (SC.6.7.19)	1	L.S.		
BP.22)	Revegetation of Existing Tank site (SC.6.7.20)	10000	S.F.		
Schedule C: Subtotal					
BP.23)	Total Bid Price Schedule A + B+C				

Total Bid Price Written in Words:

BID PROPOSAL

BP.24 BIDDER INFORMATION:

Company Name:

Federal ID No.:
Mailing Address:
City, State, Zip Code:
Complete Telephone Number:
Complete Fax Number:
Fax Number including area code:
E-mail:

Contact Person / Title:

Mailing Address:
City, State, Zip Code:
Complete Telephone Number:
Complete Fax Number:
E-mail Address:

BP.25 LICENSING INFORMATION:

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

BID PROPOSAL

BP.26 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:

BID PROPOSAL

BP.27 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.28 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)

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

BID PROPOSAL

Company Name 3):
Contract Person:
Mailing Address:
City, State, Zip Code:
Complete Telephone Number:
E-Mail Address:
Project Title:
Amount of Contract
Scope of Work:
Company Name 4):
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. 29

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 ¹	OSHA Incident Rate ²
2007		
2006		

¹ E-Mod (Experience Modification) Factors are issued by the Employer's Insurance Company of Nevada.

² 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. 30 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		

BID PROPOSAL

SUBCONTRACTORS

BP.31 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. 32 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		

BID PROPOSAL

FEDERAL AID PROJECT CARSON CITY BIDDER SUBCONTRACTOR INFORMATION

(For subcontractors exceeding one (1) percent of bid amount or \$50,000, which ever is greater)

CONTRACT NO. _____

CONTRACTOR _____

PROJECT NO. (S). _____

ADDRESS _____

BID AMOUNT \$ _____

This information must be submitted by the three lowest bidders within two (2) hours after 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 (2) hours.

NAME OF SUBCONTRACTOR	CONTACT ITEM NO(S).	DESCRIPTION OF WORK OR SERVICES TO BE SUBCONTRACTED	NEVADA LICENSE	
			NO	YES

NOTE: Subscription 108.01 of the Standard Specification and these Special Provision apply to Subletting of any portion of the contract.

CONTRACTOR'S SIGNATURE DATE

TELEPHONE NO. () _____

BID PROPOSAL

FEDERAL AID PROJECT CARSON CITY BIDDER SUBCONTRACTOR INFORMATION

(For subcontractors exceeding one (5) percent of bid amount)

CONTRACT NO. _____

CONTRACTOR _____

PROJECT NO. (S). _____

ADDRESS _____

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.

NAME OF SUBCONTRACTOR	CONTACT ITEM NO(S).	DESCRIPTION OF WORK OR SERVICES TO BE SUBCONTRACTED	NEVADA LICENSE	
			NO	YES

NOTE: Subscription 108.01 of the Standard Specification and these Special Provision apply to Subletting of any portion of the contract.

CONTRACTOR'S SIGNATURE

DATE

TELEPHONE NO. () _____

BID PROPOSAL

BP.33 LISTING OF MAJOR MATERIAL SUPPLIES

The Contractor is hereby required to list all major suppliers to be incorporated within this work. Space is provided below for listing of such suppliers. These spaces shall be filled in by the Contractor prior to turning in bids. Failure to do so may be considered by the OWNER as not responsive to the request for bids or intent of the Contract and may therefore be a cause for rejection. Sufficient time has been allowed to comply with the above intent, however, if no sub-bids have been received on an item, the Contractor should so state by a note to accompany the bid.

If no material suppliers are noted, the OWNER will be entitled to assume that material will be supplied by one of the named suppliers in the Contract Documents.

Materials Suppliers will be:

1. * _____
2. * _____
3. * _____
4. * _____
5. * _____
6. * _____
7. * _____
8. * _____
9. * _____

Note: If the above items are not completed, the ENGINEER may specify the brand to be used as listed in the Contract Documents. More than one supplier listed for any one item may be considered as non-responsive and therefore be a cause for rejection. The above unit process shall include all labor, materials, bailing, shoring, removal, overhead, profit, insurance, etc., to cover the finished work of the several kinds called for.

Bidder understands that the OWNER reserves the right to reject any or all bids and to waive any informalities in the bidding.

The bidder agrees that this bid shall be good and may not be withdrawn for a period of 30 calendar days after scheduled closing time for receiving bids.

Upon receipt of written notice of the acceptance of this bid, bidder will execute the formal contract attached Within ten (10) days and deliver a Surety Bond or Bonds as required by Article 5 of the General Conditions. The bid surety attached in the sum of _____ dollars (\$ _____) is to become the property of the OWNER in the event the contract and bond are not executed within the time above set forth, as liquidated damages for the delay and additional expenses to the OWNER caused thereby.

Respectfully submitted:

By: _____
(Title)

(Business Address & Zip Code)

(Seal – if bid is by a corporation)

BID PROPOSAL

BP.34 ACKNOWLEDGMENT AND EXECUTION:

STATE OF _____)
) SS
COUNTY OF _____)

I _____ (Name of party signing this Bid Proposal), do depose and say: That I am the Bidder or authorized agent of the Bidder; and that I have read and agree to abide by this Bid which includes, but is not limited to the following documents: Notice to Contractors, Table of Contents, Project Coordination, Instructions to Bidders, Bid Bond, Proposal Summary, Contract Award Instructions and Information, Sample Contract, Sample Performance Bond, Sample Labor and Material Payment Bond, General Conditions, Special Conditions, Standard Specifications, Prevailing Wage Rates, Technical Specifications, Geotechnical Report (if any), Contract Drawings, Permits (if any), and any addenda issued and understands the terms, conditions, and requirements thereof; that if his/her bid is accepted that he/she agrees to furnish and deliver all materials except those specified to be furnished by the City (Owner) and to do and perform all work for the "PRISON HILL WATER TANK #2 TANK CONSTRUCTION PLANS", contract number 1011-051, together with incidental items necessary to complete the work to be constructed in accordance with the Contract Documents, Contract Drawings, and Specifications annexed hereto.

BIDDER:

PRINTED NAME OF BIDDER: _____

TITLE: _____

FIRM: _____

Address: _____

City, State, Zip: _____

Telephone: _____

Fax: _____

E-mail Address: _____

(Signature of Bidder)

DATED: _____

Signed and sworn (or affirmed) before me on this _____ day of _____, 2010, by _____.

(Signature of Notary)

(Notary Stamp)

BID PROPOSAL

BP. 35 COMPLIANCE GUIDELINES FOR MBE/WBE

Compliance with the requirements of this document and attachments satisfies the MBE/WBE requirements for this construction contract. This document supersedes any conflicting requirements. Failure to take the six (6) affirmative steps listed under Good Faith Effort Requirements, prior to bid opening and to submit the Minority Business Enterprise/Women Business Enterprise Information (Form 4) form with the bid shall be cause for the bid to be rejected as a non-responsive bid.

Carson City advises potential bidders that the project is funded in whole or part with federal loan or grant funds through the Nevada Safe Drinking Water State Revolving Fund, and, as such, Executive Orders 11625, 12138, and 12432 are applicable to this contract. The United States Environmental Agency (EPA) requires that recipients of financial assistance, including assistance under the SDWSRF, comply with the requirements of these orders. In compliance with such requirements, Nevada SDWSRF has negotiated "Fair Share Objectives" with EPA for participation of small, minority and women owned businesses in procurement activity undertaken with funds made available through the SDWSRF.

Bidder agrees that it will cooperate with and assist Carson City in achieving "fair share objectives" and will exercise Good Faith Efforts to achieve such minimum participation of small, minority and women owned businesses. In particular, in submitting a bid, the bidder shall, in the selection of any and all contractors, subcontractors, and vendors for the procurement of equipment, supplies, construction, and services related to the project, at a minimum, undertake the following affirmative "Good Faith Effort" steps:

Good Faith Effort Requirements

1. Include small, minority and women owned businesses on solicitation lists;
2. Assure that small, minority and women owned businesses are solicited whenever they are potential sources;
3. Divide total requirements, when economically feasible, into small tasks or quantities to permit maximum participation by small, minority and women owned businesses;
4. Establish delivery schedules, when the requirements of the work permit, which will encourage participation by small, minority and women owned businesses;
5. Use the services of the Small Business Administration and the Office of Minority Business Enterprise of the U.S. Department of Commerce, as appropriate; and
6. If any contractor awards subagreements, require the contractor to take the affirmative steps in paragraphs (1) through (5) of this section.

Other Requirements:

1. The apparent successful low bidder must submit documentation showing that, prior to bid opening, all required positive efforts were made. The documentation must be received by Carson City within 5 working days following bid opening.
2. If the apparent successful low bidder has rejected or considered as non-responsible and or non-responsive any low MBE or WBE sub-bidder, a complete explanation must be provided to Carson City.
3. Each MBE/WBE firm to be utilized must complete Form 3 (MBE/WBE Self Certification), or equivalent certification by a federal, state, or local government entity. Such certification documentation shall be submitted to the Carson City by the apparent successful low bidder.
4. If additional procurement becomes necessary after the award of the prime contract, good faith efforts shall be applied, and, if MBE/WBE subcontracts are awarded, Form 3 (MBE/WBE Self Certification) or equivalent certification shall be provided to Carson

BID PROPOSAL

City by the prime contractor within 10 working days following the award of each new subcontract.

5. Any deviation from the information contained in Form 4 (Contractor Information Form) shall not result in a reduction of MBE/WBE participation without prior approval of Carson City.
6. Failure of the apparent low bidder to perform the six affirmative (Good Faith Effort) steps prior to bid opening and/or to submit Form 4 (Contractor Information Form) will lead to its bid being declared non-responsive by Carson City. The Carson City may then award the contract to the next lowest responsive, responsible bidder meeting the requirements of these contract provisions.

Fair Share Objectives:

The following good faith effort objectives have been established for this construction contract:

<u>Procurement Category</u>	<u>MBE</u>	<u>WBE</u>
Construction	12%	10%
Supplies	13%	28%
Equipment	11%	23%
Services	7%	25%

Documentation Requirements MBE/WBE Good Faith Effort - Positive Effort Documentation*

The bidder must take affirmative steps prior to bid opening to assure that MBEs and WBEs are used whenever possible as sources of supplies, construction and services. Failure to take such steps prior to bid opening and to submit Form 4 with the bid shall cause the bid to be rejected as non-responsive.

Affirmative steps shall be as follows:

1. Include qualified MBEs and WBEs on solicitation lists

The bidder must document that it requested assistance from the Small Business Administration and the Minority Business Development Agency and that this request for referrals was made at least five (5) working days prior to the need for referrals (see affirmative step 5 below).
2. Assure that MBEs and WBEs are solicited whenever they are potential sources.

The bidder must document that it has provided invitations to MBE/WBE bidders at least five (5) working days prior to the need of a bid response.

The bidder must document that invitations were sent to at least three (or all if less than three) MBE/WBE contractors/suppliers for each item of work referred by the MBE/WBE assistance center(s). The invitations must adequately specify the item(s) for which sub-bids were requested.

The bidder must submit to the Carson City documentation consisting of a list of all sub-bidders for each item of work that MBEs or WBEs were solicited including dollar amounts for both MBE/WBE and non-MBE/WBE sub-bidders
3. Divide total requirements, when economically feasible, into smaller tasks or quantities to permit participation by MBEs and WBEs.

A bidder must document that it gave consideration to dividing the contract into small proprietary portions (paving, electrical, landscaping, etc). If this was not done, documentation must be submitted explaining why it could not be done.
4. Establish delivery schedules where the requirements of the work permit, which will encourage participation by MBEs and WBEs.

The bidder must document that it gave consideration to establishing a project schedule which would allow MBEs and WBEs to bid the work as subcontractors or

BID PROPOSAL

suppliers. If this is not done, document reasons why the project schedule, or portions thereof, cannot be modified so as to accommodate interested MBEs and WBEs.

5. Use the services and assistance of the Small business Administration, the Minority Business Development Agency, and other agencies listed below, as appropriate.
6. If contractor awards subagreements, require subcontractors to take the affirmative steps listed in 1 through 5 above.

The bidder should make contact with the offices listed below, as appropriate. Their services are provided at no cost to bidder. If contact was made with neither, documentation must be presented to explain why contact was not made and describe what MBE/WBE solicitation lists were used.

- a. Small Business Administration

<http://www.sba.gov>

The federal database for contractor/subcontractor procurement (formerly the SBA "Pro-Net") is now maintained as the Central Contractor Registration.

<http://www.ccr.gov>

INSTRUCTION FOR ACCESSING [HTTP://www.ccr.gov](http://www.ccr.gov) DATA BASE OF MBE/WBE SUBCONTRACTORS

1. Go to <http://www.ccr.gov>
2. Click on the quick link to **Dynamic Small Business Search**
3. Under **States**, scroll down to and click on **Nevada**
4. Scroll down to **Other Ownership Data**
5. Click on **Minority or Woman/Women**, do separate run for each classification
6. Scroll down to **Nature of Business**, across from **Keywords**, type in classification of work to be performed by the subcontractor (electrician, piping, rebar, trucking, landscape, etc.)
7. Scroll to **General Nature of Business** and click on **Construction**
8. Scroll to the bottom of the screen and click on **Search Using These Criteria**.
9. For additional contractors, scroll to **No more matches**, click on **Refine Search** and repeat the process by changing the type of contractor you are searching for in no. 6, **Keyword**

- b. Minority Business Development Agency (U.S. Department of Commerce)

<http://www.mbda.gov>

- c. Nevada Department of Transportation: Disadvantaged Business Enterprise Program

<http://www.nevadadbe.com/>

California Public Utilities Commission has a supplier diversity program which collects and disseminates information from women, minority and disabled veteran-owned business enterprises.

<http://www.cpuc.ca.gov/static/supplierdiversity/index.htm>

In addition, the bidder is encouraged to procure supplies and services from small- and disabled-veteran-owned- and labor surplus area firms. Carson City recommends that bidder organize and maintain information on its MBE/WBE good faith effort in a binder, arranged according to the Good Faith Effort steps. Bidder is advised to keep printouts of searches for minority and women-owned firms, logs of telephone calls, logs and copies of correspondence, particularly contact letters. Carson City recommends that bidder include response of potential subcontractors and suppliers in the documentation log. Carson City will contact apparent selected firm to obtain for review the firm's s MBE/WBE good faith effort supporting documentation prior to award of the contract.

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Definitions

Minority Business Enterprise/Women's Business Enterprise (MBE/WBE)

A MBE is a business that is, (1) at least 51 percent owned and controlled by one or more minority individuals, or, in the case of a publicly owned business, at least 51 percent of the stock is owned by one or more minority individuals; and (2) whose daily business operations are managed and directed by one or more of the minority owners.

A WBE is a business that is, (1) at least 51 percent owned by one or more women, or, in the case of a publicly owned business, at least 51 percent of the stock is owned by one or more women; and, (2) whose daily business operations are managed and directed by one or more of the women owners.

Minority Individuals Include:

- (a) American Indians
Persons having origins in any of the original peoples of North America. To qualify in this group, a person must be a citizen of the United States and meet one or more qualifying criteria including:
 - (1) Be at least one-fourth Indian descent (as evidenced by registration with the Bureau of Indian Affairs);
 - (2) Characteristic Indian name;
 - (3) Recognition in the community as an Indian;
 - (4) Membership in a tribe, band or group of American Indians (recognized by the Federal Government), as evidenced by a tribal enrollment number or similar indication; and
 - (5) Characteristic Indian appearance and features.
- (b) Black Americans
U.S. citizens, other than Hispanic, having origins in any of the black racial groups of Africa.
- (c) Asian Americans
U.S. citizens having origins in any of the original peoples of the Far East, Southern Asia, the Indian subcontinent or the Pacific Islands. This area includes, for example, China, Japan, Korea, the Philippine Islands and Samoa. The Indian subcontinent takes in the countries of India, Pakistan, Bangladesh, Sri Lanka, Nepal, Sikkim, and Bhutan.
- (d) Hispanic Americans
U.S. citizens of Mexican, Puerto Rican, Cuban, or other Spanish culture or origin, regardless of race. Only those persons from Central and South American countries who are of Spanish origin, descent, or culture should be included in this category. Persons from Brazil, Guyana, Surinam or Trinidad, for example, would be classified according to their race and would not necessarily be included in the Hispanic category. In addition, the category does not include persons from Portugal, who should be classified according to race.
- (e) American Eskimos and American Aleuts

SDWSRF-Procurement Categories-Model Category Definitions

Background: SDWSRF, MBE/WBE requirements apply to procurement of Construction, Services, Equipment, and Supplies. Based upon a review of federal agency references (regulations and guidance), the following definitions may be utilized in the process of documentation of the "good faith effort."

"Construction" means a process of construction, improvement/alternation, or repair, remodeling, of any public structure, or public improvement of any kind to any real property. As used in this definition, the terms "buildings, structure, or other real property" typically include but are not limited to improvements of all types, such as bridges, dams, plants, highways, parkways, streets, subways, tunnels, sewers, mains, power lines, cemeteries, pumping stations, railways, airport facilities, terminals, docks, piers, wharfs, ways, lighthouses, buoys, jetties, breakwaters, levees, canals, and channels. Construction does not include the routine operation, routine repair or routine maintenance of existing facilities. Construction does not include the manufacture, production, furnishing, construction, alteration, repair, processing, or assembling of personal property.

"Services" means (1) the furnishing of labor, time or effort by a contractor which does not involve the delivery of a specific end product other than required reports and performance; (2) a contract that directly engages the time and effort of a contractor whose primary purpose is to perform an identifiable task rather than to furnish an end item of supply. [Note: Typically construction related services (electrical, plumbing, etc., integral to the construction of a specific end product which is attached to, or part of, real property is considered part of "construction" rather than "services."

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“Equipment” means tangible, nonexpendable, personal property having a useful life of more than one year and an acquisition cost of \$5,000 or more per unit. Rental or lease of equipment may be included in this category.

“Supplies” means all tangible personal property other than equipment as defined above. (i.e. personal property having a useful life of less than one year and an acquisition cost of less than \$5,000 per unit.)

MBE/WBE Forms

The following forms are provided to report project MBE/WBE information.

All Forms, where applicable, must have original signature and date.

The following table provides information on who completes each form and where the forms are to be sent:

FORM#	DESCRIPTION	COMPLETED BY	SUBMIT To	FORWARD To
1	SOLICITATION	PRIME CONTRACTOR	CARSON CITY	BSDW
2	BIDS RECEIVED LIST	PRIME CONTRACTOR	CARSON CITY	BSDW
3	SELF-CERTIFICATION	MBE/WBE SUBS	PRIME CONTRACTOR	BSDW
4	SELECTED SUBCONTRACTORS	PRIME (WITH BID)	CARSON CITY	BSDW

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FORM 3
MINORITY BUSINESS ENTERPRISE/WOMEN'S BUSINESS ENTERPRISE
(MBE/WBE)¹
SELF CERTIFICATION

Firm Name: _____ Phone: _____

Address: _____

Principal Service or Product: _____

- MBE

- WBE

- Prime Contractor

- Supplier of Material/Service

- Subcontractor

- Broker

- Sole Ownership

- Corporation

- Partnership

- Joint Venture

Names of Owners	Percent Ownership	MBE- Ethnic Identity ¹	WBE
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Additional proofs may be required upon written challenge of this certification by any person or agency. Falsification of this certification by a firm selected to perform Federally funded work may result in a determination that the firm is nonresponsive and ineligible for future contracts.

Certified by: _____ Title: _____
(Signature)

Name: _____ Date: _____

¹ Refer to definitions above.

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FORM 4

MINORITY BUSINESS ENTERPRISE/WOMEN BUSINESS ENTERPRISE INFORMATION

WATER SYSTEM NAME:	WATER SYSTEM NUMBER-PROJECT NUMBER..
PROJECT DESCRIPTION:	PROJECT LOCATION:

PRIME CONTRACTOR INFORMATION

NAME AND ADDRESS (Include ZIP code):	TYPE OF CONTRACT <input type="checkbox"/> ARCHITECT/ENGINEER (A/E) <input type="checkbox"/> CONSTRUCTION <input type="checkbox"/> SUPPLIER/SERVICE (S/S)
AMOUNT OF CONTRACT/BID: \$	

MBE/WBE INFORMATION

<input type="checkbox"/> SUBCONTRACTOR <input type="checkbox"/> SUPPLIER/SERVICES <input type="checkbox"/> JOINT VENTURE <input type="checkbox"/> BROKER <input type="checkbox"/>	NAME AND ADDRESS (Include ZIP code): PHONE:
CONTRACT AMOUNT \$	TYPE OF CONTRACT:
<input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> SUBCONTRACTOR <input type="checkbox"/> SUPPLIER/SERVICES <input type="checkbox"/> JOINT VENTURE <input type="checkbox"/> BROKER <input type="checkbox"/>	NAME AND ADDRESS (Include ZIP code): PHONE:
CONTRACT AMOUNT \$	TYPE OF CONTRACT:

BID PROPOSAL

<input type="checkbox"/> MBE <input type="checkbox"/> WBE	NAME AND ADDRESS (Include ZIP code):		
<input type="checkbox"/> SUBCONTRACTOR <input type="checkbox"/> SUPPLIER/SERVICES <input type="checkbox"/> JOINT VENTURE <input type="checkbox"/> BROKER <input type="checkbox"/>	PHONE:		
CONTRACT AMOUNT \$	TYPE OF CONTRACT:		
GOALS FOR MBE & WBE PARTICIPATION		PARTICIPATION ACHIEVED	
	% MBE	% WBE	
Construction	12%	10%	
Equipment	11%	23%	
Services	7%	25%	
	Total		
	MBE \$	MBE %	WBE \$
	\$	%	\$
	\$	%	\$
	\$	%	\$
	\$ _____		\$ _____
FORM COMPLETED BY:			
NAME	TITLE	PHONE	
SIGNATURE	DATE	EMAIL	

BID PROPOSAL

BP. 36

CONTRACTOR'S ARRA COMPLIANCE CERTIFICATION

This project, the Prison Hill Water Tank #2 Tank Construction Plans, is funded in part or whole by the American Reinvestment and Recovery Act of 2009 (ARRA), also known as Federal Stimulus Money. The Contractor and all named Subcontractors shall certify in writing their understanding of and compliance with the ARRA requirements. The General Contractor shall submit a signed copy of this compliance statement with the Bid, per Specification Sections 00200. The General Contractor shall submit all named Subcontractors' signed compliance forms to the Owner within 10 business days after bid opening.

Failure to provide the General Contractor's signed certification with the Bid and the Subcontractors' signed certifications within ten (10) business days following Bid Opening shall render the Bid non-responsive and shall be the basis for rejection of the Bid.

By signing this document, the Contractor certifies they are fully compliant with ARRA Requirements, as summarized below:

- B. **Buy American:** Section 1605 of the ARRA requires that all Iron, Steel, and Manufactured Goods used in the project shall be produced in the United States.
 - 1. Steel is further defined as:
 - a. An alloy that includes at least 50 percent iron, between .02 and 2 percent carbon, and may include other elements.
 - b. Production in the United States of the iron or steel used in the project requires that all manufacturing processes must take place in the United States, except metallurgical processes involving refinement of steel additives.
 - c. These requirements do not apply to iron or steel used as components or subcomponents of manufactured goods used in the project.
 - 2. Manufactured goods are further defined as goods brought to the construction site for incorporation into the building or work that have been:
 - a. Processed into a specific form and shape; or
 - b. Combined with other raw material to create a material that has different properties than the properties of the individual raw materials.
 - c. There is no requirement with regard to the origin of components or subcomponents in manufactured goods, as long as the manufacture of the goods occurs in the United States.
- C. Contractor acknowledges that all submittals shall include material manufacturers' certification of ARRA compliance forms. Note that un-certified manufacturers shall be a basis for rejection of product, unless a waiver has been granted. Contractor shall replace all rejected items (due to noncompliance with ARRA guidelines) with ARRA compliant manufacturers, at no cost to the owner.
- D. Waste, Fraud, and Abuse: Waste, Fraud or Abuse of public funds will not be tolerated. Contractor understands that Project accounting must be strict, accurate, and timely.
- E. Whistleblower Rights Notice: The Contractor understands that Federal whistleblower protections and rights must be posted at the job site. This posting shall be public, conspicuous, and readily available to all personnel working at or visiting the job site.

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- F. Reporting: The Contractor understands that in addition to standard Project reporting requirements that certain additional reports are required, on a weekly and quarterly basis, including the tracking of goals per Section 1512 of the ARRA. Specific report items are expected to include jobs created, jobs saved, and other information related to the administration of the Project, and will be updated on the following website:
<http://www.federalreporting.gov/>

- G. Prevailing Wages: The Contractor understands that the payment of Nevada State and Federal Davis Bacon prevailing wages and timely submission of prevailing wage documentation is mandatory.

Certification:

I (undersigned) have read, understand, and will comply with the ARRA requirements for the Prison Hill Water Tank #2 Tank Construction Plans due to financing from the American Reinvestment and Recovery Act of 2009.

_____	_____	
(Name - Print)	(Title of person authorized to sign)	
_____ / _____		
_____	_____	_____
(Signature)	(Date)	(Company)

END OF SECTION

END OF BID PROPOSAL

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

CONTRACT AWARD

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.

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.

A. 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.

B. 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

CONTRACT AWARD

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 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.

C. 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).

D. Business Automobile Liability

CONTRACT AWARD

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

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.

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.

CONTRACT AWARD

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 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 5th day of August, 2010, 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 Coordinator 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. 1011-051, titled "PRISON HILL WATER TANK #2 TANK CONSTRUCTION PLANS"** 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 & Contracts
Sandy Scott-Fisher, Purchasing & Contracts Coordinator
201 North Carson Street Suite 3
Carson City, NV 89701
775-283-7137 / FAX 775-887-2107
SScott@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, 2010 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.

SAMPLE CONTRACT

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

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 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

SAMPLE CONTRACT

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 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 previously specified, 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.1011-051 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.

SAMPLE CONTRACT

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, 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 NRS 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 cannot otherwise be settled. Therefore, in the event that a dispute arising between **CITY** and **CONTRACTOR** cannot otherwise be settled, **CITY** and **CONTRACTOR** agree that, before judicial action may be initiated, **CITY** and **CONTRACTOR** will submit the dispute to non-binding mediation. **CITY** 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 **CITY**. 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.

SAMPLE CONTRACT

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.

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**.

SAMPLE CONTRACT

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 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**.

SAMPLE CONTRACT

PUBLIC RECORDS

Pursuant to NRS 239.010, information or documents received from **CONTRACTOR** may be opened to public inspection and copying. **OWNER** 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.

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).

DUN AND BRADSTREET DATA UNIVERSAL NUMBERING SYSTEM AND CENTRAL CONTRACT REGISTRATION

CONTRACTOR is required to have a Dun and Bradstreet Data Universal Number System (D-U-N-S) number and is to be registered through the Central Contractor Registration (CCR). A D-U-N-S number can be requested at <http://fedgov.dnb.com/webform> and created in one business day. A D-U-N-S number and Tax Identification Number are required before a contractor can register through CCR. Registration with CCR can be done at <http://ccr.gov>.

ALL IRON, STEEL AND MANUFACTURED GOODS USED IN CONSTRUCTION

All iron, steel and manufactured goods used in construction, alteration, repair or maintenance of the public work project under this contract must be produced in the United States in accordance with the American Reinvestment and Recovery Act of 2009. The Contractor shall provide evidence to Carson City that all construction materials comply with this requirement. Exceptions may only be granted with prior written permission from the Carson City Planning Division and only after the Planning Division has received permission from the Secretary of the U.S. Department of Environmental Protection under the condition that: (1) the requirement is inconsistent with public interest; (2) those goods are not readily available or produced in sufficient quantity in the U.S;

SAMPLE CONTRACT

DAVIS-BACON ACT WAGE

Pursuant to section 1606 of the American Reinvestment and Recovery Act of 2009, the Davis-Bacon Act wage rules apply to this project.

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: Sandy Scott-Fisher, Purchasing and
Contracts Coordinator
201 North Carson Street, Suite 3
Carson City, Nevada 89701
Telephone: 775-283-7137
Fax: 775-887-2107
SScott@carson.org

By: _____
Sandy Scott-Fisher

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: 775-887-2355 Ext. 7367
Fax: 775-887-2164
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 _____, 2010, by "name of Contractor".

(Signature of Notary)

(Notary Stamp)

SAMPLE CONTRACT

CONTRACT ACCEPTANCE AND EXECUTION:

The Board of Supervisors for Carson City, Nevada at their publicly noticed meeting of August 5, 2010, approved the acceptance of the attached contract hereinbefore identified as **CONTRACT No. 1011-051** and titled "**PRISON HILL WATER TANK #2 TANK CONSTRUCTION PLANS**". Further, the Board of Supervisors authorizes the Mayor of Carson City, Nevada to set his hand to this document and record his signature for the execution of this contract in accordance with the action taken.

CARSON CITY, NEVADA

ROBERT L CROWELL, MAYOR

DATED this 5th day of August, 2010.

ATTEST:

ALAN GLOVER, CLERK-RECORDER

DATED this 5th day of August 2010.

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 _____, 2010, entered into a contract with the City for **BID # 1011-051** and titled "**PRISON HILL WATER TANK #2 TANK CONSTRUCTION PLANS**" 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.

PERFORMANCE BOND

Continued for **BID # 1011-051** and titled "PRISON HILL WATER TANK #2 TANK CONSTRUCTION PLANS"

BY:	(Signature of Principal)
TITLE:	
FIRM:	
Address:	L.S.
City, State, Zip	
Phone:	
Printed Name of Principal	
Attest By	(Signature of Notary)
Subscribed and Sworn before me this	,2010
day of	

CLAIMS UNDER THIS BOND MAY BE ADDRESSED TO:	
Name of Surety	
Address	
City	
State/Zip Code	
Name	
Title	
Telephone	
Surety's Acknowledgment:	
By:	

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 service of process in the State of Nevada. Certified copy of Power of Attorney must be attached.

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) _____

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 _____, 2010 entered into a
contract with the City for **BID # 1011-051** and titled "**PRISON HILL WATER TANK #2 TANK CONSTRUCTION PLANS**"
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.

LABOR AND MATERIAL PAYMENT BOND

Continued for **BID #1011-051** and titled "PRISON HILL WATER TANK #2 TANK CONSTRUCTION PLANS"

- 4) The amount of this bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder, inclusive of the payment by Surety of mechanics' liens which may be filed of record against said improvement, whether or not claim for the amount of such lien be presented under and against this bond.

BY:	(signature of Principal)
TITLE:	
FIRM:	
Address:	L.S.
City, State, Zip	
Phone:	
Printed Name of Principal:	
Attest by:	(signature of notary)
Subscribed and Sworn before me this	, 2010
day of	

CLAIMS UNDER THIS BOND MAY BE ADDRESSED TO:	
Name of Surety	
Address	
City	
State/Zip Code	
Name	
Title	
Telephone	
Surety's Acknowledgment:	
By:	

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 service of process in the State of Nevada. Certified copy of Power of Attorney must be attached.

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:

- a. Permits from City Departments and other Agencies as may be required by law
- b. Change Orders
- c. Contract
- d. Addenda
- e. Special Conditions
- f. Technical Specifications
- g. General Conditions
- h. Contract Drawing s
- i. 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.
- j. Reference Specifications

GENERAL CONDITIONS

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
- 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.

GENERAL CONDITIONS

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.

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.

GENERAL CONDITIONS

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.

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.

GENERAL CONDITIONS

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 therefore.

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.

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

GENERAL CONDITIONS

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.

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.

GENERAL CONDITIONS

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.

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.

GENERAL CONDITIONS

GC 1.6 ABBREVIATIONS

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

Abbreviations Stand For

AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
AI	The Asphalt Institute
AIA	American Institute of Architects
AIEE	American Institute of Electrical Engineers
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
AMCA	Air Moving and Conditioning Association
ANSI	American National Standards Institute (formerly USASI, USAS, ASA)
APA	American Plywood Association
API	American Petroleum Institute
APWA	American Public Works Association
AREA	American Railway Engineers Association
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers
ASLA	American Association of Landscape Architects
ASME	American Society of Mechanical Engineers
ASTM	American Society of Testing and Materials
AWG	American Wire Gauge
AWPA	American Wood-Preserver's Association
AWS	American Welding Society
AWWA	American Water Works Association
CBR	California Bearing Ratio
COE	Department of the Army Corps of Engineers
CRSI	Concrete Reinforcing Steel Institute
DFPA	Douglas Fir Plywood Association
DIPRA	Ductile Iron Pipe Research Association
EIA	Electronic Industries Association
EPA	U.S. Environmental Protection Agency
ETL	Electronic Testing Laboratory
FHWA	Federal Highway Administration
HI	Hydraulic Institute
HMI	Hoist Manufacturers Institute
IAPMO	International Association of Plumbing and Mechanical Officials
ICBO	International Conference of Building Officials
IEEE	Institute of Electrical and Electronic Engineers
IES	Illuminating Engineering Society
IPCE	International Power Cable Engineers Association
ISA	Instrument Society of America
MUTCD	Manual on Uniform Traffic Control Devices
NAAMM	National Association of Architectural Metal Manufacturers
NBFU	National Board of Fire Underwriters
NBS	National Bureau of Standards
NDEP	Nevada Department of Environmental Protection
NDOT	Nevada Department of Transportation
NEC	National Electric Code
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
NOSHA	Nevada Occupational Safety and Health Act

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NRS	Nevada Revised Statutes
NSF	National Sanitation Foundation
NWMA	National Woodwork Manufacturers Association
OSHA	Occupational Safety and Health Act
PCA	Portland Cement Association
RTC	Regional Transportation Commission
SMACNA	Sheet Metal and Air Conditioning Contractors National Association
SSPC	Structural Steel Painting Council
TCA	Tile Council of America
UBC	Uniform Building Code
UPC	Uniform Plumbing Code
U/L or UL	Underwriters Laboratories
WCLIB	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

GENERAL CONDITIONS

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

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

GENERAL CONDITIONS

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.

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.

GENERAL CONDITIONS

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.

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

GENERAL CONDITIONS

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 1st
Martin Luther King Day - 3rd Monday of January
Presidents Day - 3rd Monday of February
Memorial Day - last Monday of May
Independence Day - July 4th
Labor Day - 1st Monday of September
Nevada day - last Friday of October
Veterans Day - November 11th
Thanksgiving Day - 4th Thursday of November
Family Day - 4th Friday of November
Christmas Day - December 25th

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.

GENERAL CONDITIONS

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 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.

GENERAL CONDITIONS

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

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

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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.

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

GENERAL CONDITIONS

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

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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

GENERAL CONDITIONS

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 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 arbitration 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.

GENERAL CONDITIONS

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.

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.

GENERAL CONDITIONS

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:

- 5) A statement that the proposal is submitted as a VEP;
- 6) 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;
- 7) A detailed estimate of the cost under the existing Contract and under the VEP;
- 8) Proposed specifications and recommendations as to how such VEP changes are to be accomplished; and
- 9) 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.

GENERAL CONDITIONS

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.

GENERAL CONDITIONS

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 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

GENERAL CONDITIONS

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

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.

GENERAL CONDITIONS

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 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.

GENERAL CONDITIONS

- 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 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

GENERAL CONDITIONS

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 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

GENERAL CONDITIONS

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.

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.

GENERAL CONDITIONS

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.

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

GENERAL CONDITIONS

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.
- 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.

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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

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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.

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:

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- 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)**
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.

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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 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.

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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

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

GENERAL CONDITIONS

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:

- 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.

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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;
- 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

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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

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

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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 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

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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%)
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 manor 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.

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- a. 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:

- 1.1 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.
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:

GENERAL CONDITIONS

- (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 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.

GENERAL CONDITIONS

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 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 ALTERNATIVE DISPUTE REBITRATION

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,

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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) 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 (3rd) 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.

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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

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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

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.

GENERAL CONDITIONS

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 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

GENERAL CONDITIONS

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

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

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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 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. Darren Selby
Carson City Environmental Control Officer
Cellular phone at (775) 230-7235

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

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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 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

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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 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

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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 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.

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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 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 date

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(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.

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GC 7.13 BY-PASS PUMPING OF SANITARY SEWER

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

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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.

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.

GENERAL CONDITIONS

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

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 therefore 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

GENERAL CONDITIONS

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 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

These Special Conditions amend or supplement the Standard Terms and Conditions and General Conditions of the Contract and add other Special Conditions 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.

SC.1 SCOPE OF WORK

Carson City is accepting sealed bids for all labor, materials, tools and equipment necessary to construct a new 3 million gallon steel water tank and new 20" PVC water line located in Carson City, Nevada. This project will include all earth work, trenching, plumbing and piping, fencing, concrete, rip-rap, electrical conduits and panels, vaults and tank coatings for the complete installation of the new water tank. This project also includes the demolition and disposal of an existing 3 Million Gallon concrete water tank. This project includes all common phases of construction customarily associated with this type of project. Bids must be submitted in accordance with the plans, specifications and special conditions.

SC. 2 TIME OF PERFORMANCE:

The new tank shall be completed by April 30, 2011.

SC .3 SCHEDULE OF VALUES:

The Contractor shall prepare and submit to the Construction Manager at the Preconstruction meeting, a Schedule of values detailing the cost breakout for each lump sum item in the bid proposal. For work to be performed for a lump sum amount, the Contractor shall submit a cost breakdown to the Engineer prior to the first payment and within ten (10) days after Notice to Proceed. The cost breakdown, as agreed upon by the Contractor and the Engineer, shall be used for preparing future estimates for partial payments to the Contractor, and shall list the major items of work with a price fairly apportioned to each item.

The cost breakdown shall be generally in the same format as the Contract specifications divisions and subdivisions, with major items of work listed individually. The cost breakdown shall be by logical division of work. The cost breakdown shall include separate allowances for any testing and start-up work required. Measurable approximate quantities of work performed by the Contractor or its subcontractors shall be provided. For quantities that are the sum total of several individual quantities, backup summaries shall be provided which list the individual descriptions and quantities. These summaries then will be used to determine the quantities of work in place in subsequent progress payment requests.

The above is a statement of the intent of the Contract Documents to provide a moderate level of detail, acceptable to the Engineer, to allow a fair and reasonable estimate to be made of the value of work installed. The detail of the cost breakdown must be sufficient to provide timely processing of the monthly progress payment request.

The cost breakdown will be subject to the approval of the Engineer, and upon request, the Contractor shall substantiate the price for any or all items and provide additional level of detail, including quantities of work. The cost breakdown shall be sufficiently detailed to permit its use by the Engineer as one of the bases for evaluating requests for payments. The Engineer shall be the sole judge of the adequacy of the cost breakdown.

The cost breakdown shall be solely used to determine progress payments. The cost breakdown shall not be considered in determining payment or credit for additional or deleted work.

SC .4 Instructions to Bidders:

The following provisions amend or supplement section Instructions to Bidders of the Contract for Installation of the Prison Hill Water Tank #2 Tank Construction Project.

Special Conditions

SC.5 GENERAL CONDITIONS:

The following provisions amend or supplement the General Conditions of the Contract. All provisions of the Contract which are not so amended or supplemented shall remain in full force and effect.

GC 2.6.8, Permits:

Add the following:

The Contractor shall obtain a NDEP Groundwater Discharge Permit prior to pumping any groundwater, the SWPPP permit and Dust control permit.

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.

GC 3.7, City-Furnished Materials:

The City will provide the following;

1. No materials are being provided to the contractor for this project.

GC 3.11, Construction Schedules:

A Construction Schedule is not required.

GC 3.13, Liquidated Damages:

Add the following:

Liquidated damages shall be \$1,500.00 per day for failure to complete the work by the dates specified in the contract.

GC 4.0, Shop Drawings, and Quality Control/Inspections:

Submittals shall be made per the Shop Drawings, and Quality Control/Inspections

The contractor shall provide a minimum of 2 (two) separate submittal packages as indicated below which will be kept by the City during the construction period.

The following items, including, but not limited to, are required submittals for the Prison Hill Water Tank II Project;

- Construction Schedule
- Schedule of Values
- Pipe Bedding Material
- Warning Tape
- Locating Wire
- Pipe Materials (Ductile Iron, PVC and Steel) and Appurtenances
- Pipe Fittings and Appurtenances
- Couplers (FCA's and dismantling joints)
- Valves and Valve Boxes

Special Conditions

Fire Hydrant Assembly
Grounding wire
Aggregate Base Material
Tank Structural and Venting Calculations
Tank Shop Drawings for all components
Concrete Mix Designs
Expansion Joint Material
Water Proofing
Steel Coating materials
Pipe Stands
Any Special Steel Fabrications
Electrical Enclosures and components
Rip Rap and Drain Rock.
Culverts
Fencing
Concrete Vault, Hatch, ladder, ladder-up assemblies
Flow Meter
Altitude Valve
Pressure Gauges
Tank/Pipe Paint Materials and Color Swatch (Color by Carson City)
Air Release Valves
Flap Valves
Seed Mix Design as per BLM requirements.

GC7.4, Public Safety/Convenience and Traffic Control:

Add the following:

The advanced warning signs shall be placed in accordance with the approved Traffic Control Plan.

No lane or shoulder 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 approved by the Construction Manager.

GC 7.5, Project Signs:

A project sign will be provided by Carson City and installed by the Contractor. Coordinate exact location with the City Inspector.

GC 8.8, Record Drawings:

Add the following:

The Contractor shall transfer all markings and record information to a clean set of Contract drawings. All vertical and horizontal information specified below shall be confirmed by the Contractor's Nevada Licensed Professional Land Surveyor or the Surveyor's Subordinates. The completed set of Record Drawings shall be signed by the Surveyor and include the Surveyor's certificate. The Surveyor's certificate shall state that "To the best of my knowledge and belief, the Record Drawings accurately reflect record information supplied by the Contractor and the actual vertical and horizontal information required by the Contract Special Conditions." Record information shall be indicated by a clouded line around the changed items and a strikeout through the original items. The plan title sheet shall also contain the words "RECORD DRAWINGS", the Contractor's and Surveyor's name, address, phone number, contact person and month/year of completion.

Special Conditions

The Contractor shall submit both the original marked field plans and the completed Record Drawing plan set to the Construction Manager for review and acceptance.

Vertical and horizontal information to be confirmed by the Surveyor or the Surveyor's Subordinates shall include the following; valve, center of frame & cover and top of nut line location riser, center of box and cover and top of pipe.

SC.6 SPECIAL PROVISIONS:

SC.6.1 Traffic Control and Safety:

All traffic control shall conform to the "Manual on Uniform Traffic Control Devices", Chapter 6, and 2005 Nevada Standard Plans. Traffic shall not be impacted more than 20 minutes.

All traffic control devices are subject to being rated by the Inspector for conformance to the current American Traffic Safety Services Association (ATSSA) publication "Quality Standards for Work Zone Traffic Control Devices" which is available from the American Traffic Safety Services Association, 5440 Jefferson Davis Highway, Fredericksburg, VA 22407, Phone (703) 898-5400. Any device determined by the Inspector to not meet these quality standards shall be replaced with an acceptable device.

Permittee shall include "UTILITY WORK AHEAD" signs as a part of their traffic control plan.

The work of setting up and tearing down traffic control devices as required shall be completed each day within the hours specified on the permit and/or on the approved traffic control plan. All traffic control devices shall be completely removed from the roadway and sidewalk at the end of the work period.

SC.6.2 Pot-hole Work:

The Contractor shall have the proposed Work laid out in the field by a Nevada Licensed Professional Land Surveyor or the Surveyor's Subordinates prior to commencing with pot-holing required by GC 7.7.10. The Contractor shall then pothole all existing underground facilities 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, and location and elevation of the underground facilities, referenced to the Surveyor's lay out stakes for each pothole. The Contractor shall provide to the Construction Manager, all data, and shall identify the facilities which conflict with the Work. The Contractor shall provide to the Construction Manager, all data, prior to commencing with the Work.

The City will not be responsible for any repairs, reconstruction, extra Work, damages, delays or standby time caused by the failure of the Contractor to perform pot-holing prior to the commencement of the Work.

SC.6.3 Geotechnical Investigations:

A geotechnical investigation was performed for location and is a part of this contract document.

SC.6.4 Project Coordination:

The project shall be completed in accordance with these special conditions.

Special Conditions

Access to the site shall only be from Edmonds Drive via the 60' easement, which shall be maintained by the contractor throughout the construction period. The contractor shall not disturb any area outside the "Limits of Construction" as shown on the plans. The contractor shall contact Darrell Cruz (265-8600) of the Washoe Tribe of Nevada and California 1 week prior to mobilization to provide the opportunity for a Tribal monitor to be on site to monitor surface disturbing activities authorized by the BLM easement agreement.

The contractor shall comply with all special stipulations included within the BLM easement agreement, which has been made a part of this document.

SC.6.5 Surveying and Project Staking:

The Contractor shall survey and stake the extent of the construction area, including the equipment locations, as shown on the Drawings a minimum of two (2) weeks prior to any construction activities and shall notify the Construction Manager for review and approval of the lay-out work.

Owner will provide electronic survey information from the drawings to the Contractor. From the information provided, Contractor shall develop and make such additional surveys as are needed for construction, such as control lines, slope stakes, batter boards, stakes for pipe locations and other working points, lines, and elevations. In all questions arising to proper location of lines and structures the Engineer's decision will be final.

Field Surveys used in design of this project were performed by Tri State Surveying, 425 East Long Street, Carson City, Nevada, phone number 775-887-9911. Contact Ken Iwamura.

Survey control points are shown in the as-built survey drawings available in electronic format. These may be used for staking of the proposed facility components. Contractor shall submit a positive confirmation check of all monuments used for staking. The Contractor shall be responsible for all subsequent surveying work necessary for completing the project work which includes but is not limited to property boundary location for fence, building corners, facility installation, construction reference staking and re-establishment of monuments.

The horizontal position of facility shall be located to within 0.10 feet of the offsets as shown on the plan sheets. Vertical positions shall be located to within 0.02 feet of the specified elevations. Any modifications to this specification shall be approved by the Engineer prior to continuation of that part of the work to which the modification applies.

Survey work shall be performed under the supervision of a licensed land surveyor registered in the State of Nevada or registered civil engineer licensed in the State of Nevada. Contractor shall reestablish reference benchmarks and survey control monuments destroyed by his operations at no cost to Owner.

SC.6.6 Measurement and Payment:

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. This Work includes any necessary construction staking and layout, storm water pollution prevention, potholing to verify data, dimensions and locations of service connections, sawcutting, removal and disposal of existing improvements, clearing, removal and disposal of vegetation, excavating, removal and disposal of excess material, de-watering, shoring, coatings, connection to proposed pipes and fittings, cutting and plugging abandoned pipes intercepted by the trench

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section, removal and disposal of abandoned pipes and appurtenances within the trench section, compacting, testing, aggregate base, temporary and final asphalt replacement, concrete curb and gutter, valley gutter and sidewalk replacement, adjustment of facilities to grade, and restoration of pavement striping, pavement markers, signs, landscaping, irrigation piping, removal and replacement of fencing, and as well as other incidentals, for completion of the work in conformance with the Contract Documents.

The terms "construct, furnish, install, erect, perform, place or prepare" shall mean that the bid item is complete, in place, ready for use and recommended for payment by the Construction Manager. Items of work either specified or inferred, but not included in the tabulation of bid items, shall be considered as included in the price paid for other items of work.

SC.6.7 Description of Bid Items and Basis for Payment of the Prison Hill Water Tank II:

SC.6.7.1 Mobilization, Demobilization and Cleanup:

- A. Measurement for payment of this item shall be on a lump sum and basis.
- B. Payment for mobilization/demobilization and cleanup will be made at the unit price named in the proposal summary, which price shall constitute all costs for obtaining all bonds, permits not specified to be paid under separate bid item, and licenses; moving onto and off of the site of all plants and equipment; furnishing and erecting plants and other construction facilities; and all preparatory work as required for the proper performance and completion of the project, including work items not identified in a separate bid item. Payment for demobilization and cleanup shall also constitute full compensation for record drawings and removing all equipment, supplies, debris, and offices from the project site.

The schedule of payment of Mobilization/demobilization shall be as follows:

When the monthly partial payment estimate of the amount earned for the project, not including this item, is 15% or more of the original contract amount, then 30% of this item will be included for payment in that, one monthly partial payment estimate.

When the monthly partial payment estimate of the amount earned for the project, not including this item, is 50% or more of the original contract amount, then an additional 30% of this item will be included for payment in that, one monthly partial payment estimate.

When the monthly partial payment estimate of the amount earned for the project, not including this item, is 75% or more of the original contract amount, then an additional 30% of this item will be included for payment in that, one monthly partial payment estimate.

The remaining 10% of this item shall be paid under the final payment provisions.

SC.6.7.2 New Tank Site Clearing, Grubbing and Disposal:

- A. Measurement for payment of this item will be on a Lump Sum Basis.

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- B. Payment for this item will be made at the unit price named in the Proposal Summary, which price shall constitute full compensation for removal and disposal of all brush and debris located within the Limits of Construction area as identified on the plans and all other miscellaneous items as per the drawings and specifications.

SC.6.7.3 Pot-holing and Layout Prior to Commencement of Work:

- A. Measurement for payment of this item will be per Each pot-hole performed.
- B. Payment for this item will be made at the unit price named in the Proposal Summary, which price shall constitute full compensation for pot-holing the existing utilities and providing data prior to commencement of Work, and all other work, labor, equipment and materials necessary for pot-holing.

No direct payment will be made for pot-holing required by 6.7.3 if it is performed after work has commenced. No direct payment will be made for pot-holing if the required data is received by the Construction Manager after work has commenced.

Additional pot-holing required due to changes in the layout as a result of the initial pot-holing or the utility not being shown on the plans will be compensated per the Unit Price named in the Proposal Summary.

SC.6.7.4 New Tank Site Excavation, Grading and Re-vegetation:

- A. Measurement for payment of this item shall be on a Lump Sum basis.
- B. Payment for installing this item will be made at the unit price named in the Proposal Summary, which price shall constitute full compensation for all grading for the new tank site to the grades and elevations as shown on the plans, including top soil removal and replacement, re-seeding of all disturbed areas, installation, maintenance and removal of all BMPs and all other work, labor, equipment and materials necessary for the completion of this work as shown on the plans. Note: See BLM requirements related to re-seeding which have been made a part of this document. Re-seeding of cut slope behind new tank is not required.

SC.6.7.5 Type II Aggregate Base for around tank site:

- A. Measurement for payment of this item shall be on a Lump Sum basis.
- B. Payment for this item will be made at the unit price named in the Proposal Summary, which price shall include payment for constructing this item will be made at the unit price named in the Proposal Summary, which price shall constitute full compensation for placement and compaction of all new Type II, Class B

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Aggregate Base to be located around where the new tank is to be constructed and as shown on the plans.

SC.6.7.6

New Fire Hydrant Assembly:

- A. Measurement for payment of this item shall be for Each Fire Hydrant Installed.
- B. Payment for this item will be made at the unit price named in the Proposal Summary, which price shall include Payment for a new hydrant will be made at the unit price named in the Proposal Summary, which price shall constitute full compensation for installing a complete fire hydrant assembly including excavation, PVC lateral, gate valve, thrust block, valve box, concrete collar, locator wire and tape, backfilling and all other appurtenances, work, labor, equipment and materials necessary for a complete installation as shown on the plans.

SC.6.7.7

New 20" DR-25 PVC Water line Work:

- A. Measurement for payment of this item shall be on a Lineal Foot basis.
- B. Payment for this item will be made at the unit price named in the Proposal Summary, which price shall constitute the installation of all new 20" PVC pipe using DR-25 PVC for the pipeline as shown on the plans and shall include all required excavation, bedding and backfill material, fittings, mechanical restraints, line location wire, air release valves, air release valves and all other miscellaneous items as required for this type of installation and as per the drawings and specifications.

SC.6.7.8

New 12" DR-18 PVC Water line Work:

- A. Measurement for payment of this item shall be on a Lineal Foot basis.
- B. Payment for this item will be made at the unit price named in the Proposal Summary, which price shall constitute the installation of all new 12" PVC pipe using DR-18 PVC for the pipeline as shown on the plans and shall include all required excavation, bedding and backfill material, fittings, restraints, line location wire, air release valves, air release valves and all other miscellaneous items as required for this type of installation and as per the drawings and specifications.

SC.6.7.9

Altitude Valve Vault and Equipment:

- A. Measurement for payment of this item will be on a Lump Sum basis.
- B. Payment for installing this item will be made at the unit price named in the Proposal Summary, which price shall constitute full compensation for furnishing and placing the pipe including pipe, fittings, thrust blocks and mechanical restraining devices, imported

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bedding, backfill, altitude valve, flow meter, transducer conduits and all related fittings, concrete vault, hatches, water proofing, interior and exterior painting and all other work, labor, equipment and materials necessary for a complete installation as shown on the plans.

SC.6.7.10

Chain Link Fence and Gates:

- A. Measurement for payment of this item will be on a Lump Sum basis.
- B. Payment for installing this item will be made at the unit price named in the Proposal Summary, which price shall constitute full compensation for furnishing and placing all new fencing materials including concrete, vinyl coated chain link fabric (Brown), razor wire (tan) and new gates and posts with powder coated framework and fittings to match fabric color and all other work, labor, equipment and materials necessary for a complete installation as shown on the plans.

SC.6.7.11

Rock Rip Rap:

- A. Measurement for payment of this item will be on a Lump Sum basis.
- B. Payment for installing this item will be made at the unit price named in the Proposal Summary, which price shall constitute full compensation for removing and replacing any rip-rap that is disturbed by the installation of any of the new pipeline work, including all labor, equipment and materials necessary for a complete installation as shown on the plans.

SC.6.7.12

Telemetry and Solar Panel Cabinets, Support Structure and All Electrical Conduits:

- A. Measurement for payment of this item will be on a Lump Sum basis.
- B. Payment for installing this item will be made at the unit price named in the Proposal Summary, which price shall constitute full compensation for furnishing and placing the electrical panels, posts and concrete, all conduits for telemetry, water tank transducer and hatch security switch, paint and all other materials and labor necessary for a complete installation as shown on the plans

SC.6.7.13

Water Tank Concrete Foundation:

- A. Measurement for payment of this item shall be on a Lump Sum basis.
- B. Payment for installing this item will be made at the unit price named in the Proposal Summary, which price shall constitute full compensation for furnishing and placing all trenching, concrete, reinforcing steel, copper grounding wire and all other work, labor,

Special Conditions

equipment and materials necessary for a complete installation as shown on the plans

SC.6.7.14 Gravel Drain Rock for Tank Foundation:

- A. Measurement for payment of this item shall be on a Lump Sum basis.
- B. Payment for installing this item will be made at the unit price named in the Proposal Summary, which price shall constitute full compensation for furnishing, placing, leveling and compacting all drain rock, including all other work, labor, equipment and materials necessary for a complete installation as shown on the plans.

SC.6.7.15 New 3 Million Gallon Steel Water Tank:

- A. Measurement for payment of this item shall be on a Lump Sum basis.
- B. Payment for installing this item will be made at the unit price named in the Proposal Summary, which price shall constitute full compensation for furnishing and placing all components of the new steel water tank including all other work, labor, equipment and materials necessary for a complete installation as shown on the plans. Due to the potential fire danger in this area, this item shall also include basic firefighting equipment, such as shovels, fire extinguishers, axes, a water tender, or other tools necessary to assist in putting out a small fire that may be caused by welding activities.

SC.6.7.16 Sand Blast and Coat New Steel Tank Interior:

- A. Measurement for payment of this item shall be on a Lump Sum basis.
- B. Payment for performance of this item will be made at the unit price named in the Proposal Summary, which price shall constitute full compensation for furnishing all blasting sand (including it's disposal) and paint, including all other work, labor, equipment and materials necessary for a complete paint coating of all interior components as indicated in the specifications.

SC.6.7.17 Sand Blast and Coat New Steel Tank Exterior:

- A. Measurement for payment of this item shall be on a Lump Sum basis.
- B. Payment for performance of this item will be made at the unit price named in the Proposal Summary, which price shall constitute full compensation for furnishing all blasting sand (including it's disposal) and paint, including all other work, labor, equipment and materials necessary for a complete paint coating of all exterior components as indicated in the specifications,

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including the anti-graffiti coating. NOTE: The exterior finish color shall have a flat finish.

SC.6.7.18

New Steel Water Tank Disinfection:

- A. Measurement for payment of this item shall be on a Lump Sum basis.
- B. Payment for installing this item will be made at the unit price named in the Proposal Summary, which price shall constitute full compensation for furnishing all disinfecting liquids, water, pumps and all other work, labor, equipment and materials necessary for a complete installation as indicated in the specifications.

SC.6.7.19

Existing Water Tank Demolition and Disposal:

- A. Measurement for payment of this item shall be on a Lump Sum basis.
- B. Payment for this item will be made at the unit price named in the Proposal Summary, which price shall constitute full compensation for furnishing all work, labor, equipment and materials necessary for the complete removal of the existing Concrete Water Tank as indicated in the plans. This work will not begin until approval has been given by the Construction Manager.

SC.6.7.20

Re-seeding of the Existing Tank Site:

- A. Measurement for payment of this item shall be on a Lump Sum basis.
- B. Payment for this item will be made at the unit price named in the Proposal Summary, which price shall constitute full compensation for re-seeding of all disturbed areas after demolition of the existing tank using the BLM seed mixture, which has been made a part of this document, and all other equipment and materials necessary for a complete installation as shown on the plans and in the specifications.

SC.7 AMENDMENTS TO THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION:

SC.7.1 There are no amendments to the standard specifications.

SC.7.2 Other Documents that have been made a part of this document include a Geotechnical Report that was prepared for the new tank site, a Structural Engineering Report that was prepared for the existing Concrete Water Tank, a copy of the BLM Easement which includes the Seeding and new tank paint color requirements and a copy of the EA Report that was prepared for the entire site.

END OF SPECIAL CONDITIONS

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DOCUMENT No. 1005 OPERATING AND MAINTENANCE INFORMATION (2/10/10)

1. General:

1.1 Operating and maintenance information shall be provided for all mechanical and electrical equipment and shall consist of the names and addresses of the manufacturers, the nearest representative of the manufacturer, and the nearest supplier of the manufacturer's equipment and parts, as well as all items as listed in section 2.9 of this specification.

2. Transmittal Procedure:

2.1 Provide a transmittal form for the Operation and Maintenance Manual. Submit (1) paper copy of the specified operating and maintenance information until approval has been given. The information shall be organized in binders in numerical order by the specification number assigned in the project manual, plus a suffix of "O&M". The binders shall be provided with a table of contents and tab sheets to permit easy location of desired information.

2.2 If a manufacturer's standard brochures and manuals are used to describe operating and maintenance procedures, such brochures and manuals shall be modified to reflect the model or series of equipment used on this project. Extraneous material shall be crossed out neatly or otherwise annotated or eliminated.

2.3 Acceptable submittals will be retained with the transmittal form returned with a request for two electronic copies on compact disk. Provide complete electronic copies of the entire O&M manual in PDF format. The entire O&M manual information for each specification section shall be included in a single PDF. This is required for all O&M manuals associated with this Project.

2.4 Deficient submittals will be returned along with transmittal form which will be marked to indicate deficient areas.

2.5 Identify resubmittals with the original number, plus a suffix letter starting with "A."

2.6 Submit Operation and Maintenance Manuals printed on 8-1/2" x 11" inch size high quality paper with standard three-hole punching and bound in stiff metal hinged binder constructed as a three-post style. Provide binders with titles. Tab each section of manuals for easy reference with plastic-coated dividers. Provide index for each manual.

2.7 Reduce drawings or diagrams bound in manuals to an 8 1/2" x 11" inch or 11" x 17" inch size. However, where reduction is not practical to ensure readability, fold large drawings separately and place in vinyl envelopes which are bound into the binder. Identify vinyl envelopes with drawing numbers.

2.8 Transmittal Content:

1. Submission of Operation and Maintenance Manuals is applicable to but not necessarily limited to:

- a. Equipment such as meters, valves, pumps and feed system controls, electrical panels, and instrumentation.
- b. Equipment used with electrical motor loads (pumps)
- c. Specialized equipment including valves and instrumentation and control system components for process systems such as meters, recorders, and transmitters.
- d. Valves and actuators.

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- 2.9 Prepare operation and maintenance manuals which include, but are not necessarily limited to the following detailed information, as applicable:
- a. Equipment function, normal operating characteristics, limited operations.
 - b. Assembly, disassembly, installation, alignment, tolerances, adjustment, and checking instructions.
 - c. Operating instructions for start-up, routine and normal operation, regulation and control, shutdown, and emergency conditions.
 - d. Lubrication and maintenance instructions (including schedules).
 - e. Guide to "troubleshooting".
 - f. Parts list (including material of construction) and predicted life of parts subject to wear.
 - g. Outline, cross-section, and assembly (exploded view) drawings; engineering data; and electrical diagrams, including elementary diagrams, wiring diagrams, connection diagrams, word description of wiring diagrams and interconnection diagrams.
 - h. Test data and performance curves.
 - i. A list of recommended spare parts with a price list.
 - j. Copies of installation instructions, parts lists or other documents packed with equipment when delivered.
 - k. Instrumentation or tag numbers relating the equipment back to the Contract Documents.
 - l. Safety instructions.
 - m. ISO identification numbers for bearings.
 - n. List of specialty tools required and availability.
 - o. List weight of overall assemblies and individual weights of major individual components.
 - p. List of vendors and who to contact for warranty work.
 - q. List of fastener grades.
 - r. Copy of warranty, if applicable.

3. Payment:

3.1 Monies retained from progress payments made to Contractor will not be released until acceptable operating and maintenance information is delivered to Construction Manager for Carson City.

4. Field Changes:

4.1 Following the acceptable installation and operation of an equipment item, the item's instructions and procedures shall be modified and supplemented by Contractor to reflect any field changes or information requiring field data.

END OF DOCUMENT 1005

Technical Specifications

Document No. 1007 CLEARING AND GRUBBING (7/15/03)

1. General:

1.1 The project site will be cleared and grubbed by Contractor prior to the start of work. Any minor clearing and grubbing that may be required shall be completed as herein specified.

2. Clearing:

2.1 Clearing shall consist of the felling, trimming and cutting into sections any on-site tree not designated to remain and the satisfactory disposal of those trees, other vegetation designated for removal, downed timber, snags, brush, fences, asphalt and rubbish occurring within the areas to be cleared. Cut off flush with or below the original ground surfaces trees, stumps, roots, brush and other vegetation in areas to be cleared; except for trees and vegetation indicated or directed to be left standing. Saw cut existing asphalt to the lines designated on the plans. Completely remove fencing not designated to remain.

3. Grubbing:

3.1 Grubbing shall consist of the removal and disposal of roots larger than three (3) inches in diameter, matted roots, and designated stumps from the indicated grubbing areas. Excavate this material together with logs, organic and metallic debris, brush and refuse and remove to a depth of not less than three (3) inches below the original soil surface in areas indicated to be grubbed and in areas indicated as construction areas under this contract. Fill depressions made by grubbing with suitable material and compact to make the new surface conform with the existing adjacent surface of the ground.

4. Disposal of Cleared and Grubbed Materials:

4.1 All cleared and grubbed material will become the property of Contractor, and will be disposed off-site at an approved disposal location at Contractor's expense.

END OF DOCUMENT 1007

Technical Specifications

Document No. 1009 DEWATERING (2/10/06)

1. General:

1.1 The Work of this Section includes designing, furnishing, installing, maintaining, operating, monitoring, removing systems required to control groundwater levels and hydrostatic pressures during trench and structure excavation, and treatment of water, all in compliance with Nevada Division of Environmental Protection (NDEP) and Nevada Division of Water Resources (NDWR) requirements, and disposing of pumped water.

1.2 Dewatering shall include intercepting seepage; preventing loss of material from the trench and structure excavation; preventing rupture or heaving of the bottom of the excavation; and maintaining the water table at a minimum of one foot below excavation bottom and as necessary to complete the Work in a dry condition.

2. Submittals:

2.1 Contractor shall submit the following to Construction Manager:

- a) The proposed type of dewatering system including relief of hydrostatic head and procedure for maintaining the excavation in a dewatered and hydrostatically relieved condition.
- b) Arrangement, location, and depths of the components of the system.
- c) A complete description of equipment to be used, with installation, operation, and maintenance procedures.
- d) Standby equipment and power supply.
- e) Location, size, and construction details of sumps and discharge lines, including discharge points and drawings for removing system and restoring the area disturbed by the dewatering operations.
- f) Types and sizes of filters.
- g) Design calculations demonstrating adequacy of the selected system and equipment.

2.2 Contractor shall also submit to Construction Manager copies of correspondence with NDEP and NDWR regarding dewatering operations including Dewatering Permit, water quality tests, authorization to drill, well driller's license, and Well Driller's Report.

3. Design Criteria for Dewatering System:

3.1 Contractor shall design a dewatering system which will:

- a) Lower the groundwater level to a minimum of one foot below the bottom of the excavation and as necessary to complete the Work in a dry condition.
- b) Develop a substantially dry and stable subgrade for the performance of subsequent operations.
- c) Result in no damage to adjacent properties, buildings, structures, utilities, and other work.

Technical Specifications

- d) Not remove soil particles during pumping operations.

3.2 Contractor shall review and investigate the soils and groundwater conditions at the site and determine the type or combination of methods necessary to provide the dewatering required to perform the Work.

3.3 Dewatering procedures which cause, or threaten to cause, damage to new or existing facilities shall be modified to prevent damage. Contractor shall determine and implement modifications at no additional cost to Carson City.

4. Quality Control:

4.1 Contractor shall perform dewatering activities in compliance with the NRS and the Nevada Administrative Code, administered through NDEP and NDWR, and shall obtain all necessary permits to complete the Work of this Section. Contractor shall control the rate and effect of dewatering to avoid objectionable settlement and subsidence, and shall perform dewatering operations to adequately ensure integrity of the finished project.

4.2 Where critical structures or facilities exist immediately adjacent to areas of proposed dewatering, Contractor shall establish reference points and observe at intervals as specified in subsection 7.1 Monitoring of Dewatering Operations, to detect any settlement which may develop. Contractor shall conduct dewatering operations in a manner which will protect adjacent structures and facilities, and shall repair any damage caused by dewatering to adjacent structures and restore facilities at no additional cost to Carson City.

5. Equipment:

5.1 Contractor shall provide all equipment necessary for dewatering. At all times keep sufficient pumping equipment on-site, keep machinery in good working condition, and provide competent workers for operation of pumping equipment. Keep and maintain adequate standby pumping equipment on-site and available at all times to ensure efficient dewatering and maintaining of dewatering operation during any power failure.

6. Dewatering Installation and Operations:

6.1 Dewatering shall be accomplished in accordance with the reviewed submittals and special Permits. Inform Construction Manager of any changes made to accommodate field conditions and, on completion of the dewatering system installation, revise and resubmit dewatering drawings. Dewatering may include the use of:

- a) Well points
- b) Temporary pipelines for water disposal
- c) Rock or gravel placement
- d) Other means or methods reviewed by Carson City/State prior to installation.

6.2 Dewatering operations shall lower the groundwater level in excavations for prosecution of the Work, and provide a stable dry subgrade for the prosecution of subsequent operations. Operations shall commence prior to excavation and continue until a stable and dry subgrade is achieved. The water level shall be maintained at such lower elevations until no danger to the excavation, structure, or related facilities can occur because of buildup of excessive hydrostatic pressure. Maintain the water level at a minimum of one foot below the bottom of the excavation and as necessary to complete the Work until the structure has been satisfactorily completed, including sealing of joints, unless otherwise permitted by Construction Manager.

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6.3 Conduct dewatering in a manner to preserve undisturbed bearing capacity of subgrade soils at proposed bottom of excavation. If foundation soils are disturbed or loosened by upward seepage of water or an uncontrolled flow of water after dewatering is in operation, Contractor shall be responsible for devising a plan and taking action to stabilize the soil and provide a firm subgrade, at no additional cost to Carson City.

6.4 Dewatering operations shall be prosecuted as required to prevent delays in construction. The responsible person in charge of the Dewatering Program shall be available for communication with the site personnel at all times, and shall be able to be on the site within one hour of being alerted.

6.5 Prevent flotation by maintaining a positive and continuous removal of water. Contractor shall accept responsibility and liability for damages which may result from failure to adequately keep excavations dewatered.

6.6 Requirements and procedures for using well points or wells are:

- a) Adequately space to provide necessary dewatering.
- b) Sandpack and/or use other means to prevent pumping of fine sands or silts from the subsurface.
- c) Continually check to ensure that the dewatering operation does not remove subsurface soils.

7. Monitoring of Dewatering Operations:

7.1 Contractor shall provide regular monitoring of the dewatering operations including, but not limited to, walking along the project a minimum of weekly to check for visual signs of settlement (i.e., cracking and so forth), discharge piping, flow rates and water quality. At no additional cost to Carson City, Contractor shall also provide a minimum of monthly surveying along the project, by a Nevada Licensed Land Surveyor, on existing improvements to check for signs of excessive settlement, and checking wells for groundwater levels.

8. Water Disposal:

8.1 Contractor shall dispose of water from the Work in a suitable manner without damage to adjacent property. Obtain approval for the method and place of disposal of groundwater from Carson City and NDEP. Contractor shall not drain water into Work built or under construction without the prior consent of Construction Manager. Upon approval of the Construction Manger, and prior to preparation of pipe or structure for acceptance, the pipeline or structure may be used to convey groundwater to sumps for pumping. Do not allow such water or associated debris to enter into any sanitary sewer system. Remove debris accumulated in the pipeline or structure and thoroughly clean prior to testing and acceptance.

8.2 Do not allow runoff from dewatering to flow in the curb, gutter, or street. Filter the water using an approved method to remove sand and fine-sized soil particles before disposal into any drainage system.

9. Groundwater Release:

9.1 Contractor shall perform release of groundwater to its static level in a manner which shall maintain the undisturbed state of natural foundation soils, prevent disturbance of compacted backfill and prevent flotation or movement of structures, pipelines, and sewers.

10. Removal and Restoration:

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10.1 When groundwater control is not longer necessary, wells, equipment, drain lines and connections shall be removed in accordance with State regulations and the ground surface restored to its original conditions.

11. Payment:

11.1 Payment for dewatering shall be considered as included in the various items of Work requiring such dewatering, and no separate or additional compensation shall be allowed.

END OF DOCUMENT 1009

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Document No. 2001 STAKING, EXCAVATION, BACKFILLING AND COMPACTING FOR WATER LINES (7/5/07)

1. General:

1.1 Before any excavation on the project, Contractor shall notify all local utility companies and "Call Before You Dig" at 1-800-227-2600. Excavation shall include the removal of all materials or obstructions of any nature, the installation and removal of all sheeting and bracing and the control of water necessary to construct the work as shown. Excavation work shall be performed in a safe and proper manner with suitable precautions taken against hazards of every kind. Sheeting and shoring shall conform to the requirements of OSHA and Section 305.06 of the Standard Specifications. There is a significant likelihood that groundwater will be encountered during trenching excavation. Contractor shall be prepared to install and maintain pumping equipment necessary to control groundwater during construction.

1.2 Backfill during freezing weather shall not be done except by permission of Construction Manager. No backfill material shall be installed on frozen or yielding surfaces, nor shall frozen materials, snow or ice be placed in any backfill.

2. Reference Standards:

2.1 Relative compaction or density, when hereinafter referred to, means the in-place dry density of the soil expressed as a percentage of the maximum dry density of the same soil as determined by the ASTM D1557-91 test procedure. The costs of site compaction or density testing shall be paid for by Carson City. The costs of all retests (from failed tests) shall be paid for by Contractor.

3. Staking Out the Work:

3.1 Contractor shall retain a Nevada Licensed Professional Land Surveyor, and the Surveyor or his Subordinates shall stake out the horizontal and vertical positions of all the Work. Contractor shall satisfy himself as to the accuracy of all measurements before constructing any permanent structure and shall not take advantage of any errors found on the drawings. Where new construction connects to existing facilities, Contractor shall pothole and establish the exact locations and elevations prior to construction of the facilities.

3.2 It shall be Contractor's responsibility to expose the existing water lines at the points of connection for the new lines and maintain the depths of cover and slopes as indicated on the drawings. It shall also be Contractor's responsibility to:

3.2.1 Pothole existing utilities and, after approval by Construction Manager, modify water line grade as required to match or avoid existing utilities while maintaining the depth of cover required and the general slope of the pipe to prevent high points in the pipeline.

3.2.2 Maintain the minimum amount of cover shown on the drawings, except as approved by Construction Manager.

3.2.3 Adjust depth of cover, after approval by Construction Manager, as required to prevent changes in the pipe slope which would create high points at locations other than those indicated on the drawings.

3.2.4 Have the Work staked in accordance with the lines and grades as shown on the drawings.

4. Trench Work:

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4.1 Trench Configuration and Alignment:

4.1.1 Trenches shall be excavated to provide for the bedding as specified in subsection 5.1 Bedding.

4.1.2 The new pipeline shall be laid essentially as per the alignments and grades shown on the drawings.

4.1.3 Trenches and other excavations shall have the minimum width which Contractor can effectively excavate and install the improvements. Excessive widths will not be permitted. Trenches shall have a minimum width of twenty-four (24) inches greater than the outside diameter of the pipe to be installed. Deviations from this minimum width must be submitted to Construction Manager in writing for approval. The bottom of the trench shall be graded uniformly to provide a minimum cover of forty-two (42) inches over the top of the pipe unless otherwise shown on the drawings, provide continuous bedding support under the pipe, and to allow the pipe to be laid to the grades and alignments shown in the drawings.

4.2 Pipe Bedding: The trench shall be over excavated to a depth of at least six (6) inches below the bottom of the pipe and backfilled to the required grade of the bottom of the pipe with bedding material. The pipe bedding shall be brought to optimum moisture content and compacted to not less than 90% relative density. The pipe bedding at the trench bottom shall have a flat or semicircular cross section. The bottom of the trench for all pipe shall be graded and prepared to provide a firm and uniform bearing surface throughout the entire length of each pipe section except for excavation required at joints. Pipe couplings shall not rest on the trench bottom and laying the pipe on mounds will not be allowed.

4.3 Bedding through the Pipe Zone: After center loading the pipe to prevent lateral movement, bedding material shall be placed in the trench simultaneously on each side of the pipe for the full width of the trench in layers not to exceed eight (8) inches in depth. Each layer or lift shall be compacted to at least 90% of maximum density evenly, on each side of the pipe throughout the pipe zone. The pipe zone is to extend from bottom of the pipe to twelve (12) inches above the top of the pipe and shall be backfilled with bedding material as specified herein.

4.4 Backfill above the Pipe Zone: From twelve (12) inches above the top of pipe to the top of the trench, if not in existing pavement, or bottom of the pavement structure, if in existing pavement, pipe backfill shall consist of material as specified in subsection 5.2 Backfill. No oil cake, bituminous pavement, concrete, rock or other lumpy material shall be used in the backfill. Backfill material shall be compacted to not less than 90% relative density. All trenches shall be backfilled after pipe fittings and appurtenances have been installed, inspected and approved. All trash, wood, large rocks, waste material and other objectionable debris shall be removed from excavation prior to any material being placed in the trench. Backfill shall include the refilling and compacting of the trench or excavation.

4.4.1 Where existing underground pipes or conduits larger than three (3) inches in diameter cross the trench above the new work, the backfill from the bottom of the trench to the spring line of the intersecting pipe or conduit shall be Crushed Gravel Base material, Type 2, Class B, Aggregate Base conforming to the requirements of Section 200.01.03 of the Standard Specifications, compacted to 90% of maximum density. The aggregate base material shall extend two (2) feet on either side of the intersecting pipe or conduit which will insure that the material will remain in place while other backfill is placed.

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4.4.2 Backfill by jetting shall not be allowed. Backfill shall be densified by mechanical compaction.

4.5 Site Excavation:

4.5.1 The bottom of the excavation shall not be more than one-tenth (0.10) foot above or below the lines and grades specified. If the elevation of structure excavation is not specified the excavation shall be not more than one-tenth (0.10) foot above or below the elevation specified for fill material below the structure. Cut slopes shall vary no more than five-tenths (0.5) foot from specified grade unless the excavation is in rock where the maximum variation should be two (2) feet. Unless otherwise specified, excavations shall extend a sufficient distance from walls and footings to allow for placing and removal of forms, installation of services, and for inspection, except where concrete is specified to be placed directly against excavated surfaces. Upon completion of excavation, the existing subgrade shall be compacted to a minimum of 95% relative density.

4.5.2 Should the excavation be carried below the lines and grades specified on the drawings, or should the bottom of the excavation be disturbed because of Contractor's operations and require over-excavation and backfill, Contractor, at his expense, shall refill such excavated space to the proper elevation in accordance with the procedure specified for backfill.

4.6 Rock Excavation and Blasting:

4.6.1 No blasting will be permitted without the approval of Construction Manager. When blasting is permitted, it shall be done only by skilled operators and under the direction of a competent, properly licensed foreman.

4.6.2 Blasting will be permitted only when proper precautions are taken for the protection of persons, the work, and existing structures. Any damage done to persons, private property, the work, or existing structures shall be the responsibility of Contractor.

4.6.3 Blasting shall be done with explosives of such power and in such quantities and positions as not to make the excavation unduly large, or to shatter the faces of cuts which are to remain open. Excessive blasting or "overshooting" will not be permitted, and any material outside the authorized cross-section which may be shattered or loosened by blasting shall be removed and replaced with earth as herein specified, at Contractor's expense. Construction Manager shall have authority to require Contractor to discontinue any method of blasting which leads to "overshooting" or is dangerous to the public or destructive to property or to natural features.

4.6.4 Permits for blasting shall be obtained and paid for by Contractor.

4.7 Sheeting and Shoring:

4.7.1 Excavation for trenches shall be properly and substantially sheeted, braced, and shored as required by trench conditions. Sheeting, bracing, and shoring shall be designed and built to withstand all loads that might be caused by earth movement or pressure and shall be rigid, maintaining shape and position under all circumstances. Contractor's design for all sheeting and shoring shall be signed and sealed by a licensed Nevada Civil or Structural Engineer and the drawings submitted to Construction Manager prior to its construction.

4.7.2 During backfilling, any shoring shall be carefully removed by Contractor in such a manner as will result in a minimum of caving, lateral movement, or flowing of the soil.

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On approval of Construction Manager, Contractor may leave shoring in place, but in such an event, no payment will be made by Carson City for such materials left in place. Where trench shoring is left in place, it shall not be braced against the pipe.

5. Materials:

5.1 Bedding:

5.1.1 Pipe bedding material shall conform to the requirements of Section 200.03.02, Class A Backfill, of the Standard Specifications.

5.1.2 Bedding shall be placed in accordance with Section 305.08, Bedding, of the Standard Specifications.

5.2 Backfill:

5.2.1 Trench backfill shall conform to the requirements of the Standard Specifications, Section 200.03.06, Class E Backfill, unless otherwise specified.

5.2.2 Trench backfill shall be placed and compacted in accordance with Section 305, Trench Excavation and Backfill, of the Standard Specifications.

5.2.3 Backfill for any structure shall be Crushed Gravel Base material, Type 2, Class B, Aggregate Base conforming to the requirements of Section 200.01.03 of the Standard Specifications. No backfill material shall be deposited against concrete structures until the concrete has developed a minimum strength of 3,000 psi.

5.2.4 If site excavated material meets the requirements for Class "E" Backfill but exceeds optimum moisture content, Contractor shall take whatever measures are necessary to dry the material to a compactable moisture content. No additional compensation shall be allowed for such measures. If site excavated material does not meet "Class E Backfill" requirements in accordance with the Standard Specifications, Contractor may be directed by Construction Manager to remove and dispose of the unsuitable material to an approved disposal location and import acceptable material.

5.3 Pavement Structure:

5.3.1 Defined as that section from the top of the backfill to the road wearing surface. This section shall consist of Crushed Gravel Base material, Type 2, Class B, aggregate base conforming to the requirements of Section 200.01.03 of the Standard Specifications, compacted to 95% maximum dry density overlaid with asphalt concrete at a depth to match contiguous pavement, but not less than that specified in roadway sections. Refer to the Permanent Pavement Patch Detail on the drawings, and if applicable, also refer to the Patching Details for Work within NDOT Right-of-Way.

6. Construction:

6.1 Maximum Length of Open Trench:

6.1.1 Except by permission of Construction Manager, the maximum length of open trench where prefabricated pipe is used shall be five hundred (500) feet, or the distance necessary to accommodate the amount of pipe installed in a single day, whichever is the greater.

6.2 Control of Water:

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6.2.1 When water is encountered, Contractor shall furnish, install, maintain and operate all necessary machinery, appliances, and equipment to keep excavations free from water until the placing of the bedding material, laying and jointing of the pipe, pouring of concrete, and placing of the backfill material has been completed, inspected, and approved and all danger of flotation and other damages is removed. Groundwater pumped from the trench shall be disposed of in such a manner as will not cause injury to public or private property, or constitute a nuisance or menace to the public, and shall be subject to the prior approval of Construction Manager and all regulatory requirements of the State of Nevada. If well points are used for dewatering, they shall be removed or abandoned according to State of Nevada regulations.

6.3 Special Foundation Treatment:

6.3.1 Whenever the bottom of the trench is soft, yielding, or in the opinion of Construction Manager otherwise unsuitable as a foundation for the pipe, the unsuitable material shall be removed to a depth approved by Construction Manager and replaced with suitable material approved by Construction Manager. Payment for this work will be made only if the bottom of the trench has become unstable due to circumstances beyond the control of Contractor. Payment for this work will be made as specified in subsection 6.4 Modification Procedures of the General Conditions unless otherwise provided for in these Contract documents.

6.4 Restoration of Roadway Surfaces:

6.4.1 All road shoulders and pavement which are broken or damaged due to Contractor's operations shall be reconstructed by Contractor at no additional cost to Carson City. Reconstruction shall be subject to the approval of Construction Manager.

6.5 Repairs Required by Trench Settlement:

6.5.1 If, at any time during a one (1) year period from the date of final acceptance of the project, there is any settlement of the trenches requiring repairs to be made, or should any other defect appear in the system due to negligence or carelessness on the part of Contractor, Carson City will notify Contractor to immediately make such repairs as may be deemed necessary at Contractor's expense.

6.6 Surplus Material:

6.6.1 All surplus material shall be disposed of off site in accordance with applicable ordinances and environmental requirements. Contractor shall be responsible for ultimate disposal of surplus material. He shall also include in his bid the cost for disposal, in accordance with City, State, and Federal environmental laws, of all Asbestos Cement Pipe removed during construction.

END OF DOCUMENT 2001

Technical Specifications

Document No. 2002 WATER SERVICE CONNECTIONS (8/26/04)

1. Scope:

- 1.1 The work to be done under this Section consists of furnishing all labor, equipment, materials, supplies and incidentals necessary for installation of water service connections, and fire service connections.

2. Materials:

2.1 Service Connection Size:

2.1.1 The size of service connections shall be as shown on the construction drawings. All components of a service connection shall be the same size as the nominal designation of the service connection pipe; i.e., a one (1) inch connection will consist of a one (1) inch service saddle, and a one (1) inch corporation stop, unless otherwise shown on the drawings.

2.1.2 When replacing an existing service connection, if the existing service size encountered is larger than the existing service shown on the drawings, and the drawings do not indicate to replace to the larger size, the service shall be replaced to match the existing service. Contractor shall be compensated for the increase in size.

2.2 Service Saddles:

2.2.1 Service Saddles shall be manufactured specifically for the type and size of pipe upon which they are being used. The Service Saddle bodies shall be stainless steel or dipped fusion bonded epoxy coated ductile iron.

2.2.2 The bands (straps), nuts, and bolts shall be of 18-8 stainless steel. The bands of D.I. saddles shall be two (2) inch wide. One band shall be supplied for up to one (1) inch service sizes and two (2) for over one (1) inch. The gasket shall be constructed of Buna-N or Neoprene. The inlet threads shall be AWWA I.P. Thread.

2.3 Corporation and Curb Stops:

2.3.1 Corporation stops shall be constructed of brass (Red Brass 85-5-5-5) and have AWWA I.P. Threads inlet and outlets suitable for flared connections to PE pipe. Corporation and curb stops shall be manufactured by Ford, Mueller or approved equal. Curb stops shall be the inverted key type, constructed of brass.

2.4 Meter Pit Setters and Boxes:

2.4.1 Meter pit setters for 3/4 " and 1" meter installations shall be the Carson City Standard Mueller/McCullough Thermal-Coil Meter Box complete with integral riser, inlet angle valve, and outlet check valve. Pit setter shall be fifteen (15) inches minimum diameter for single 3/4 " meter installations, and eighteen (18) inches minimum for double 3/4" meter installations and single 1" installations. Pit setters for 1-1/2" and 2" meter installations shall be as shown on the drawings.

2.4.2 Meter boxes for 3" to 8" meter installations shall be the Carson City Standard Christy B52 with M3 lid or as shown on the drawings.

3. Workmanship:

3.1 General:

Technical Specifications

3.1.1 Contractor shall install the water service; make all connections as required to the main, connection to the new meter service, and connection between the new meter and the building supply line or irrigation supply line as indicated on the drawings.

3.2 Installation:

3.2.1 Prior to installing the service saddle or tapping sleeve, remove all dirt or other foreign matter that may impair the quality of the completed connection. Then place service saddle or tapping sleeve at the desired location but not within eighteen inches (18") of any fitting, coupling, valve, bend, or end of pipe. Tighten as per manufacturer's recommendation.

3.2.2 Tubing shall be cut with square ends, reamed and flared with the proper size flaring tool, cleaned, and made up tightly. Care shall be taken to prevent the tube from kinking or buckling on short radius bends. Kinked or buckled sections of tube shall be cut out and the tube spliced with the proper brass fittings, at Contractor's expense. All fittings, including reducers, shall be brass.

3.2.3 Connections between the new service, building supply line or irrigation supply line, and existing service or supply lines shall be neat and watertight with adequate pipe to prevent stress at joints.

3.3 Existing Meter Relocations:

3.3.1 Contractor shall, ONLY in the presence of the Carson City Inspector, remove individual meters from the existing pit setter or meter set, and immediately relocate the meter to the new pit setter or meter set. Domestic meters shall be relocated so that they serve the same domestic building supply line as before the relocation. Irrigation meters shall be relocated so that they serve the same irrigation supply line as before the relocation.

3.4 New Meter Installations:

3.4.1 Contractor shall obtain from Carson City a no cost Permit for a new meter installation. Upon completion of the water service installation and acceptance of all testing and inspection of the new water service and any applicable water main, Contractor shall submit a completed "Utility Billing Water/Sewer Service Application" to Construction Manager. Carson City will then install the new meter.

END OF DOCUMENT 2002

Technical Specifications

Document No. 2003 POLYETHYLENE TUBING (3/15/07)

1. General:

1.1 This section covers polyethylene tubing which shall be furnished and installed complete and in place with all jointing materials, fittings and other appurtenances as shown on the Plans or as otherwise required for a complete installation.

2. Materials:

2.1 Tubing:

2.1.1 Polyethylene tubing shall conform to NSF Standard No. 14, AWWA Standard C901, and to the specifications of ASTM D 2737. Polyethylene tubing shall be copper tubing size (CTS) , pressure class 200, have a dimension ratio (DR) of not more than 9.0, and shall be made with materials designated PE3408 by the Standard PE Code.

2.1.2 All repairs or connections to new or existing P.E., copper or galvanized water service lines, "to 2", shall be MUELLER CTS 110 COMPRESSION TYPE FITTINGS OR APPROVED EQUAL.

2.2 Fittings:

2.2.1 Fittings shall meet the requirement set forth in AWWA C901 and shall be Flare-Nut type.

3. Installation:

3.1 Polyethylene tubing shall be installed in accordance with the manufacturer's recommendations and in accordance with AWWA C901.

END OF DOCUMENT 2003

Technical Specifications

Document No. 2004 TAPPING SLEEVES AND SERVICE SADDLES (10/5/01)

1. General:

1.1 This section specifies tapping sleeves (For four (4) inch pipe or larger) and service saddles (For pipe sizes less than four (4) inches) to be installed for hot tapping of potable water mains. **ALL HOT TAPS GREATER THAN TWO INCHES (2") PERFORMED ON FOUR INCH (4") OR GREATER POTABLE WATER MAINS ARE TO BE PERFORMED BY CARSON CITY PUBLIC WORKS DEPARTMENT.**

2. Tapping Sleeves:

2.1 Shall be constructed of the following materials:

ITEM	MATERIAL
Shell & Lugs	18-8 Type 304 Stainless Steel.
Flange	18-8 Type 304 Stainless Steel or high tensile ductile (nodular) iron conforming to ASTM A536-80, Grade 65-45-12.
Welds	Fully passivated for corrosion resistance.
Bolts	5/8" Diameter, 18-8 Stainless Steel National Course rolled thread, fluorocarbon coated to prevent galling.
Nuts & Washers	18-8 Stainless Steel.
Gasket	Virgin styrene butadiene rubber compounded for water service conforming to ASTM D2000-80MA AAA607 with 360 degree pipe coverage. Working pressure: 150 p.s.i.

3. Service Saddles:

3.1 Shall be constructed of the following materials:

ITEM	MATERIAL
Welds	Fully passivated for corrosion resistance.
Bands & Bolts	5/8" Diameter 18-8 Stainless Steel National Course rolled thread, fluorocarbon coated to prevent galling.
Nuts & Washers	18-8 Stainless Steel.
Finish	Approximately twelve (12) mils of fusion applied epoxy coating conforming to AWWA 213-91.

4. Installation:

4.1 Tapping sleeves and service saddles shall be located as shown on the plans and installed in accordance with the manufacturer's recommendations. Tapping sleeves 4" and larger shall have a thrust block and the concrete used for thrust blocking shall not prevent access to the bolt assembly. Tapping sleeves and service saddles shall, in all respects, be constructed similar to the Romac brand or approved equal, meeting material requirements specified within this section.

Technical Specifications

4.2 The tapping sleeve shall be pressure tested to the class rating of pipe for a minimum of 5 minutes prior to hot-tap. The pressure tests shall be performed in presence of a Carson City Public Works Department staff member.

4.3 Contractor shall give written notice, either hand delivered or by fax, to Construction Manager five (5) working days prior to the performance of any Hot-Taps by Carson City. (Carson City Public Works, 3505 Butti Way, Carson City, Nevada 89701, Fax # (775) 887-2112.

END OF DOCUMENT 2004

Technical Specifications

Document No. 2005 POLYVINYL CHLORIDE PIPE (5/10/05)

1. General:

1.1 This section covers pressure water supply polyvinyl chloride pipe which shall be furnished and installed complete with all jointing materials, fittings and other appurtenances shown on the drawings or otherwise required for a complete installation. Contractor shall furnish, install and test pipe, fittings and appurtenances of the dimensions and types and to the lines and grades shown on the drawings and specified herein.

2. Unloading PVC Pipe:

2.1 Prolonged exposure to temperatures near freezing make PVC sensitive to impact and extra care shall be taken in handling PVC during cold weather.

2.2 PVC pipe may be off-loaded by hand, either by passing over the side or off the truck end. Sliding one (1) length on another is standard practice in unloading PVC pipe, but lengths in the bottom layer shall be lifted off of the rough surface of the truck body to avoid erosion.

2.3 Compact shipping units (palletized bundles in a wood frame) are used to ship large orders of pipe. These units can be unloaded by conventional fork lifts.

3. Materials:

3.1 Pressure Pipe:

3.1.1 PVC pressure pipe shall conform to AWWA C900 or C905, as shown on the drawings. Pressure class for C900 or pressure rating for C905 shall be as shown on the drawings and have an outside diameter equivalent to that of cast iron pipe. The standard pipe length shall be twenty (20) feet.

3.2 Identification Marks:

3.2.1 Pipe and couplings shall be clearly and permanently marked with all information required by AWWA C900 and AWWA C905, respectively.

3.3 Testing:

3.3.1 All materials shall be sampled and tested in accordance with all requirements of AWWA C900 and AWWA C905, respectively. Pipe not manufactured in the United States shall be tested as required above by an approved testing laboratory within the United States.

3.4 Affidavit of Compliance:

3.4.1 The manufacturer shall furnish an affidavit of compliance certifying that all tests have been conducted and that the materials comply with the applicable standards and these specifications. Test information shall be retained and shall be available if required by Engineer.

3.5 Couplings:

3.5.1 Each length of pipe shall be furnished with a coupling consisting of either a PVC sleeve and two (2) sealing rings or an integrally cast bell and one (1) sealing ring designed to hold the pipe in alignment, provide flexibility, separate the ends of the pipe lengths, resist applied earth pressures and provide fluid tightness.

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3.6 Rubber Rings:

3.6.1 Rubber rings shall conform to Subsection 203.15.03.01 of the SSPWC.

3.7 Fittings:

3.7.1 Fittings shall be PVC, or short body gray iron, or ductile iron conforming to ANSI A21.10 (AWWA C110). Cast iron fittings for pipe twelve (12) inches and smaller shall be pressure rated for 250 psi. Ductile iron for fittings shall conform to ASTM A536 Grade 80-60-03 or 70-5-05 and fittings for pipe twenty-four (24) inches or smaller shall be pressure rated for 350 psi.

3.8 Joints:

3.8.1 Flanged Joints:

3.8.1.1 Flanges shall conform to ANSI B16.1 and shall be 250 psi, flat-faced. Bolts shall be of corrosion-resisting steel conforming to the requirements of ASTM A193, Grade B7. Bolts shall conform to ASTM A194, Grade 2H Heavy Series. The fit shall be free fit (Class 2), except that medium fit (Class 3) shall be provided in holes tapped for studs. Bolts and nuts used for submerged service shall be made from Type 304 stainless steel and shall conform in design to the above specifications.

3.8.1.2 Studs and bolts shall be of such length that no less than 1/4 inch nor more than 1/2-inch will be projected through the nut when drawn tight. All bolt heads and nuts shall be hexagonal except where special shapes are required.

3.8.1.3 Gaskets shall conform to ASTM D1330, Grade I, red rubber, ring type, 1/8-inch thick.

3.9 Mechanical Joints:

3.9.1 Mechanical joints shall conform to ANSI A21.11.

3.9.2 Push-on Joints:

3.9.2.1 Push-on joints shall conform to ANSI A21.11 except that gaskets shall be neoprene or other synthetic rubber. Push-on joints shall have their ring grooves and rings compatible with the pipe ends. The grooves shall be gauged for tolerance before arriving at the job site and the grooves and interior surfaces of the bell shall be smooth and free from ridges, notches and uneven surfaces.

4. Installation:

4.1 General:

4.1.1 Installation shall conform to the manufacturer's recommendations except as modified by these specifications and as shown on the drawings.

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4.1.2 All laying, jointing and testing for defects and leakage shall be performed in the presence of Engineer and shall be subject to his approval before acceptance. Materials found during construction to have defects will be rejected and Contractor shall promptly remove such defective material from the site.

5. Trenching, Bedding and Backfill:

5.1 Requirements for trenching, bedding and backfill shall be as specified; as required by applicable permits and regulations; and as required by applicable safety codes.

5.2 Pipe shall be laid on a shaped trench foundation or shaped bedding as required and with properly dug bell or coupling holes. Supporting pipe on blocks or mounds of earth or bedding material will not be permitted.

6. Handling and Stockpiling:

6.1 Pipe, fittings and accessories shall be handled in a manner that will insure installation in a sound, undamaged condition. Equipment, tools and methods used in unloading, reloading, hauling and laying pipe and fittings shall be such that the pipe and fittings are not damaged. Hooks inserted in ends of pipe shall have broad, well padded contact surfaces. No unpadded hooks or wire brushes shall be permitted to contact plastic lining. Pipe and fittings in which lining has been broken, split or loosened shall be replaced by and at the expense of Contractor. Where damaged areas are small and readily accessible, Contractor may be permitted to repair the lining in accordance with the manufacturer's instructions. Store pipe on a flat surface so as to support the barrel evenly. Store random lengths separately where they will be readily available. Individual lengths of pipe should be stocked in piles of no higher than three (3) feet. If pipe is to be stored outside for periods longer than thirty (30) calendar days, the pipe must be covered to protect it from prolonged exposure to the sun's rays. The pipe shall be covered with canvas or another opaque material which shall not be clear plastic sheets. Provisions shall be made for air circulation under the sheet.

6.2 Cutting:

6.2.1 Cutting and machining of pipe shall be accomplished in accordance with the pipe manufacturer's standard recommendations. Pipe shall not be cut with a cold chisel, flame, standard iron pipe cutter, nor any other method that may fracture the pipe, produce ragged, uneven edges or split the pipe end. Cut ends shall be machined smooth to the proper dimensions.

7. Pipe Laying:

7.1 The pipe shall be laid to the lines and grades shown on the drawings and specified herein and the sections shall be closely jointed to form a smooth flow line. Immediately before placing each section of pipe in final position, the bedding shall be checked for firmness and uniformity of surface.

7.2 The radius of curvature of the trench shall determine the maximum length of pipe section that can be used without exceeding the allowable deflection at a coupling. The deflection at any flexible joint shall not exceed that prescribed by the manufacturer of the pipe. The manufacturer's printed installation guide outlining the radii of curvature that can be negotiated with pipe sections of various lengths shall be followed.

7.3 Proper implements, tools, and facilities as recommended by the pipe manufacturer's standard printed installation instructions shall be provided and used by Contractor for safe and efficient execution of the work. All pipe, fittings, valves, and accessories shall be carefully lowered into the trench by means of derrick, ropes, or other suitable equipment in such a

Technical Specifications

manner as to prevent damage to pipe and fittings. Under no circumstances shall pipe or accessories be dropped or dumped into the trench.

7.4 The pipe and accessories shall be inspected for defects prior to lowering into the trench. Any defective, damaged or unsound pipe shall be repaired or replaced. All foreign matter or dirt shall be removed from the interior of the pipe before lowering into position in the trench. Pipe shall be kept clean during and after laying. All openings on the pipe line shall be closed with watertight expandable type sewer plugs or test plugs at the end of each day's operation or whenever the pipe openings are left unattended. The use of burlap, wood, or other similar temporary plugs will not be permitted.

8. Distributing Along the Trench:

8.1 Pipe should be strung as near the trench as possible, but, if the trench has not been dug, it shall be kept out of the way of the excavator. It shall be protected from blasting, traffic, equipment or other hazards. Where damage as a result of vandalism could occur, only enough pipe for one day's laying shall be strung. The pipe shall be strung so that the bell ends point in the direction that the work is progressing.

9. Jointing:

9.1 Each pipe joint shall be joined either with a coupling consisting of a PVC sleeve and two (2) rubber gaskets, or an integral bell with one (1) rubber gasket.

9.2 The gasket and the gasket seat inside the collar or bell shall be wiped clean before the gasket is inserted. At this time a thin film of lubricant shall be applied to the gasket and to the outside of the clean pipe end. Lubricant other than that furnished with the pipe shall not be used. The end of the pipe shall be then forced into the collar or bell to complete the joint.

9.3 The assembly of the joint shall be made in accordance with the printed recommendations of the manufacturer. This shall be accomplished with an assembly tool if so recommended by the manufacturer, so that the resulting position of the sleeve shall be such that is centered over pipe ends. After assembly of the coupling, the rubber gasket location shall be checked with a suitable gauge. Gaskets for the full circumference of the pipe shall be located at a distance from the coupling or bell end as recommended by the manufacturer of the couplings, if the distance does not fall within required limits, the joint shall be disassembled and reassembled in an acceptable manner.

9.4 When pipe laying is not in progress, the open end of the pipe shall be closed by approved means to prevent trench water from entering pipe. Adequate backfill shall be deposited on pipe to prevent floating of pipe. Any pipe which has floated shall be removed from the trench, cleaned, and relaid in an acceptable manner. No pipe shall be laid when, in the opinion of Engineer, the trench conditions or weather are unsuitable for such work.

10. Installations of Fittings:

10.1 Fittings shall be installed utilizing standard installation procedures. Fittings shall be lowered into trench by means of rope, cable, chain, or other acceptable means without damage to the fittings. Cable, rope, or other devices used for lowering fitting into trench, shall be attached around exterior of fitting for handling. Under no circumstances shall the cable, rope or other device be attached through the fitting's interior for handling. Fittings shall be carefully connected to pipe or other facility, and joint shall be checked to insure a sound and proper joint.

11. Thrust Blocking:

11.1 Concrete thrust blocking shall be provided at all tees, elbows, wyes, caps, valves, hydrants, reducers, and other points of unbalanced thrust. Thrust blocking shall be poured so

Technical Specifications

the thrust surface bears against undisturbed soil. Thrust blocking shall be as specified in Document No. 2013 Thrust Blocks of these Technical Specifications.

END OF DOCUMENT 2005

Technical Specifications

Document No. 2006 DUCTILE IRON PIPE (6/22/04)

1. General:

1.1 Ductile iron pipe shall be installed in the locations and of the sizes shown on the drawings.

2. Materials:

2.1 Pipe: Unless otherwise stated, all ductile iron pipe shall be Pressure Class 150, or greater, conforming to the requirements set forth in AWWA C151.

2.2 Fittings: Ductile iron fittings shall meet the requirements set forth in AWWA C110.

2.3 Joints:

2.3.1 Push-on and mechanical joint rubber gasket joints shall meet the requirements of AWWA C111.

2.3.2 When the type of joints indicated on the drawings are flanged, flanges shall meet the requirements of AWWA C207.

3. Installation:

3.1 Ductile iron pipe shall be installed in accordance with the manufacturer's recommendations and in accordance with AWWA C600.

4. Linings and Coatings:

4.1 All ductile iron pipe and fittings shall be cement-mortar lined in accordance with AWWA C104.

4.2 The exterior of exposed ductile iron piping including valves, etc., shall be painted as specified in Document 7001 Painting of these Technical Specifications. Surface preparation shall be in accordance with the manufacturer's recommendations.

4.3 The exterior of buried ductile iron pipe including flanged joints, tees, etc., shall be wrapped and sealed with (2) two layers, of a minimum thickness each layer, 8 mil polyethylene film per AWWA C105.

END OF DOCUMENT 2006

Technical Specifications

Document No. 2007 GALVANIZED STEEL PIPE (5/29/01)

1. General:

1.1 This section specifies galvanized steel pipe to be used where called out on the Plans.

2. Materials:

2.1 Pipe and fittings shall be galvanized steel 150 lb. standard weight, hot dip galvanized conforming to ASTM A 120. Fittings shall be malleable screwed type, conforming to ANSI B 16.3. Nipples shall be extra strong (Schedule 80); "close nipples" will be permitted only by special authorization in each case.

3. Installation:

3.1 Contractor shall install all pipe, fittings, valves and appurtenances as shown on the plans, including couplings, jointing materials and pipe supports. Piping shall be adequately supported with pipe support as shown on plans or approved equal.

4. Pipe Protection:

4.1 Upon completion of the work, Contractor shall wrap the pipe with a 10 mil polyethylene film.

END OF DOCUMENT 2007

Technical Specifications

Document No. 2008 COATING EXTERIOR METAL PIPE (5/16/05)

1. General:

1.1 Contractor shall furnish all labor, materials and equipment necessary to provide protective coatings as specified or required. All coating thicknesses described herein refer to dry film thickness. Finish colors shall be selected by Engineer and color samples shall be furnished for review.

2. Coating Metal Pipe:

2.1 Metal pipe shall be coated with a high gloss alkyd paint system. Colors for color coding of pipe shall be as specified above. Metal pipe shall be power tool cleaned per SSPC-SP-3 or commercial blast cleaned SSPC-SP-6.

3. Alkyd System:

3.1 The alkyd system shall consist of (2) two or more finish coats applied over a primer to a total dry film thickness of not less than seven (7) mils. Paint shall consist of not less than 35% solids by volume and 25% pigment by weight. Finish systems shall be the following or approved equal.

3.1.1 Koppers:

3.1.1.1 Apply one (1) coat of Koppers 622 Rust Penetrating Primer to black iron or steel or one (1) coat of 622 Rust Penetrating Primer to galvanized surfaces after pretreatment followed by two (2) or more coats of Rustarmor 500 Enamel.

3.1.2 Sherwin-Williams:

3.1.2.1 Apply one (1) coat of Sherwin-Williams Kromik Metal Primer E41 N to black iron or steel or one (1) coat of Galvanized Iron Primer B50 A 1 after pretreatment to galvanized surfaces followed by two (2) or more coats of Kem Lustral Enamel Series F65.

END OF DOCUMENT 2008

Technical Specifications

Document No. 2009 GATE VALVES 5/24/04)

1. General:

1.1 This section specifies underground gate valves and appurtenances to be installed on water or reclaimed water mains where shown on the drawings in accordance with the Carson City Standard Details "C-10.1, Gate Valve" and "C-10.3, Valve Box & Lid".

1.2 Gate Valves shall be American AVK, American Flow Control, Clow, M & H, Mueller or equal resilient-seated gate valves conforming to AWWA C509 or C515 and shall be UL listed and FM approved.

2. Design:

2.1 Valve shall be non-rising stem (NRS) wedge type resilient-seated with O-Ring stem seals and low zinc copper alloy or stainless steel stem, equipped with a two (2) inch standard operating nut. Ends shall be designed for direct connection to the type of pipe or fitting which the valve is adjoined to, or as shown on the drawings. Valves shall open when turned counterclockwise.

2.2 The minimum design working pressure for valves twelve (12) inches in diameter and smaller shall be 200 psig and shall be 150 psig for larger valves. Valves shall be designed to have full port opening for unrestricted flow. The valve waterway shall be smooth and shall have no depressions or cavities in seat area.

3. Valve Boxes:

3.1 Concrete valve boxes with cast iron covers shall be provided for all buried valves. Valve boxes shall be provided with colored PVC (schedule 40 minimum) extension sleeves. Valve box covers shall be labeled, with pick hole access. Valve boxes and covers shall be Christy G5 traffic valve box with G5C lid, or approved equal.

4. Installation:

4.1 Valves shall be installed as shown on the drawings with support block and valve box and riser. Valves shall be installed with valve box centered over operating nut and plumb.

4.2 All valves shall be operated by Contractor prior to and following installation to assure free movement, proper seating and full-port opening.

5. Protective Coatings:

5.1 Valves shall be provided with a shop-applied fusion-bonded epoxy coating on interior and exterior surfaces conforming to AWWA C550.

5.2 Any damage to the protective coating including scratches, nicks, etc. shall be repaired prior to the installation using an approved coating conforming to AWWA C509 Sec. 4.2.2.8. or AWWA C515 Sec. 4.2.2.6.

5.3 All exposed metal on valves and fittings such as nuts and bolts including damage during installation shall be coated prior to backfill with an approved coating conforming to AWWA C509 Sec. 4.2.2.8 or AWWA C515 Sec. 4.2.2.6.

6. Valve Identification:

Technical Specifications

6.1 All valves located outside the pavement structure shall be identified with a Utility Marker. Water valve markers shall be blue Carsonite Utility Marker (CUM - 375), 5'-2" with blue valve decal (CWV 116) or approved equal. Marker shall be installed no more than 5 feet from the valve measured perpendicular to the water main or roadway.

END OF DOCUMENT 2009

Technical Specifications

Document No. 2010 CHECK VALVES (9/18/07)

1. General:

1.1 Check valves shall be installed in the locations shown on the plans and shall conform to the types and sizes as shown on the plans.

2. Wafer Style Silent Check Valves:

2.1 Silent wafer check valves shall be of the silent operating type which will reduce or eliminate water hammer shock. The valves have cast iron bodies, bronze seats, bronze bushings and stainless steel torsion springs. The disc shall be constructed of 304 Stainless steel for 2" through 12" and B62 Bronze for 14" through 24" sizes. The valve body shall be one piece and incorporate a Nitrile/EPDM seal which will seal at both high and low pressures and a disc that over laps the seal to prevent wear. The valves must be capable of vertical and horizontal operation; flow up or flow down. Wafer check valves shall be 150 psi class minimum, ANSI class 125 flanges and be similar in all respects to the Model 888 as manufactured by the FLOMATIC Corporation, or approved equal.

3. Swing Check Valves:

3.1 These valves shall be a spring assisted and cushioned wafer-style swing check valve which will provide a positive, drip-tight closure. The valve body shall be cast iron (ASTM A126, Class B grey iron) with Stainless Steel nuts and bolts and tapped bosses. The valve shall have a bronze clapper arm with a rubber (ASTM D2000) faced cast iron disk. The valves up to and including 12" shall be designed for a 175 psi working pressure, valves 14" and larger shall be designed for a 150 psi working pressure, fit ANSI B16.1, class 125 flanges and be similar in all respects to the Mueller Spring Assisted Cushioned Swing Check Valves, or approved equal.

4. In-Line Silent Check Valves:

4.1 These valves shall be fully automatic silent check valves using a spring loaded configuration for installation in a vertical position. The valve follower shall be equipped with a anti-spin lug to prevent back-flow and shall use an elastomer seat. The valve body shall be annealed ductile iron of sufficient strength to support the full weight of a riser pipe and submersible pump below. The valve body shall also be equipped with a break off plug and all fasteners and springs shall be stainless steel. Sizes 5" and larger shall have a ½" lead-in before the threads to assist with alignment. Flanged models shall meet ANSI 125. All in-line check valves shall be similar in all respects to the Model 80DI as manufactured by the FLOMATIC Corporation, or approved equal.

5. Installation:

5.1 All check valves shall be installed in accordance with the manufacturer's recommendations.

6. Protective Coating:

6.1 All check valve shall be supplied with a fusion bonded epoxy coating on both the internal and external surfaces of the valve with a minimum thickness of 10 mils.

END OF DOCUMENT 2010

Technical Specifications

Document No. 2012 FIRE HYDRANTS (12/31/00)

1. Scope:

1.1 The work to be done under this section consists of furnishing all plant, labor, equipment, materials, supplies and incidentals and performing all work required for furnishing and installing the fire hydrant assemblies, complete.

2. Trench Excavation and Backfill:

2.1 Trench excavation and backfill shall conform to the requirements as specified in Document No. 2001 Staking, Excavation, Backfilling and Compacting for Water Lines of these Technical Specifications.

3. Pipe:

3.1 The water pipe to be installed from the water main to the fire hydrant shall be the same type of pipe utilized for construction of the water system improvements.

4. Valves and Valve Boxes:

4.1 Valve and valve boxes for fire hydrants shall conform to the requirements as specified in Document No. 2009 Gate Valves of these Technical Specifications.

5. References:

5.1 References herein are made to the standards, tests, methods, and specifications of research and technical organizations as follows:

ITEM	STANDARD SPECIFICATION, TEST OR METHOD DESIGNATION
Fire Hydrants	AWWA C502-73

6. Materials:

6.1 Fire hydrant shall conform to the requirements of Section 307 of the Standard Specifications and this section of these Technical Specifications.

All hydrants shall be as follows:

The size of a valve opening shall be five and one quarter inch (5-1/4") with two (2) two and one half inch (2-1/2") N.S.T. (National Standard Thread) nozzles; one four and one half inch (4-1/2") NST nozzle which shall meet Carson City's thread specifications. The inlet connections shall be a six inch (6") size and the operating nut one and one and one half inch (1-1/2") pentagon, open to the left.

Fire hydrants shall be of the compression type with the valve closing with the pressure. All hydrants shall be in accordance with the latest specifications of the American Water Works Association. All parts entering into the manufacture will be interchangeable. All fire hydrants shall be non-freezing and self-draining.

The top of the hydrant shall be constructed so that the operating threads are immersed in an oil reservoir. The oil reservoir shall be sealed at both top and bottom by "O" rings to prevent oil or water leakage. The bonnet assembly shall be unitized and flanged to the tip barrel for easy removal as one unit without disassembly or loss of lubricant in the field. The main valve opening shall be controlled with a positive stop built into the bonnet assembly. The hydrant shall be of the safety ground flange design at a point two inches (2") above ground line. In the

Technical Specifications

event of a traffic accident, the barrel will not become broken, nor the main operating stem become broken or bent, which parts shall be easily and quickly replaced. The safety flange design shall be constructed to ensure more accurate control of impact stresses and eliminate the uncertainties of frangible bolt and lug designs such as corrosive and varying bolt strength. The drain valves shall be bronzed to bronzed seat with quadring and shall be positively operated by main operating nut. The design shall permit full three hundred and sixty (360) degree rotation in any desired position location & placement of the hydrant shall be in accordance with all Fire Department regulations. Hydrants shall be constructed for lengthening or making repairs without the necessity of digging. Hydrant barrel shall be centrifugally cast ductile iron.

Hydrants shall be subjected, after assembly to two (2) tests under a hydraulic pressure of 300 pounds per square inch. One (1) test shall be made with the whole interior of the hydrant under pressure; and another with the main valve closed and the footpiece under pressure from the inlet side. Under the above test procedure, there shall be no leakage through the main valve, drain valve, or stuffing box, nor through the castings or the joints of the assembled hydrant. Leakage or other imperfections found in either test shall be corrected before the hydrant is accepted. The test is not required for any existing fire hydrants.

Fire hydrants shall be the five and one quarter inch (5-1/4") WB67 DDP type, as manufactured by the Waterous Company, or approved equal by the Carson City Fire District Fire Chief and Engineer. HYDRANTS SHALL BE PAINTED FIRE HYDRANT ORANGE IN ACCORDANCE WITH FIRE DISTRICT STANDARDS.

7. Workmanship:

Fire Hydrant installation shall conform to the requirements of Subsection 307.09, "Setting Hydrants", of the Standard Specifications for Public Works Construction.

Contractor shall notice, coordinate and cooperate with the Fire Department before any shut-down of a fire hydrant or water line is to be made. Contractor shall keep the Fire Department fully informed on any emergency repairs being made which affect the water distribution system.

All buried metallic materials of the fire hydrant assemblies shall be encased in polyethylene (plastic wrap) in accordance with the requirements of AWWA C105.77.

Before the fire hydrant assembly is backfilled, Contractor shall contact the inspector for an inspection review using the Carson City Public Works Department "Inspection for Fire Hydrants" form. The inspection shall be performed in the presents of Contractor and the inspector. Also included in the inspection will be a check of the street valve to assure full open position.

END OF DOCUMENT 2012

Technical Specifications

Document No. 2013 THRUST BLOCKS (5/10/01)

1. General:

Thrust blocks shall be installed in the locations shown on the Drawings and in general, everywhere a buried pressure conduit changes direction according to Carson City "Standard Details for Public Works Construction".

2. Materials:

Concrete used for thrust blocks shall have a minimum compressive strength of 4000 psi at twenty-eight (28) calendar days when tested in accordance with ASTM C39 and shall contain not less than 6.0 sacks of cement per cubic yard of concrete.

3. Installation:

Thrust blocks shall be installed such that they bear against the pipe fitting (not the pipe) on one side and against undisturbed earth on the other side.

Thrust block concrete shall not obstruct removal of flange bolts from fittings. Concrete shall be prevented from adhering to the fittings. Either a liquid bond breaker shall be applied to the fitting, or an impervious membrane (plastic, building paper, etc.) shall be used.

The bearing area against the undisturbed soil shall be measured in a vertical plane, perpendicular to the axis of the pipe, or the line bisecting the extensions of the pipes entering a fitting. The bearing area shall be as set forth in the thrust block table in the Drawings.

END OF DOCUMENT 2013

Technical Specifications

Document No. 2014 COUPLINGS, DISMANTLING, AND EXPANSION JOINTS (5/10/05)

1. General:

Couplings, dismantling and expansion joints shall be installed in the locations and conform to the sizes shown on the Drawings.

2. Materials:

2.1 Bolted Couplings:

Bolted couplings shall have malleable iron followers, steel sleeves, high strength bolts with hexagon nuts and wedge-type resilient material gaskets. Bolted couplings shall be designed for a working pressure of 150 psi and shall be as manufactured by Romac Series 501, or equal. Coupling restraints shall be installed in the locations as shown on and detailed in the Drawings.

2.2 Flanged Coupling Adapters:

Flanged coupling adapters shall have high grade gray iron or steel bodies with malleable or ductile iron followers with high strength bolts and wedge-type resilient material coupling gaskets and "O-ring" flange gaskets. Flange coupling adapters shall be designed for a working pressure of 150 psi and shall be as manufactured by Romac Series FCA501, or equal.

2.3 Restrained Couplings:

When noted on the Drawings, bolted couplings or flanged coupling adapters shall be restrained with couplings equipped with anchor boss and anchor bolts. These couplings shall be installed in strict conformance to the Drawings and manufacturer's recommendations. Restrained couplings for PVC pipe shall restrain by contacting the circumference of the pipe. Restraining devices which point load PVC pipe, in the opinion of Construction Manager, shall not be considered or allowed.

2.4 Expansion Joints:

Expansion joints shall be installed where indicated on the Drawings. Expansion joints shall have a neoprene cover and a teflon tube and be equipped with thrust control rods. Expansion joints shall be Holz Series 980 molded expansion joints or equal.

2.5 Dismantling Joints:

Dismantling joints shall have high grade gray iron or steel bodies with malleable or ductile iron followers with high strength bolts and wedge-type resilient material coupling gaskets and "O-ring" flange gaskets. Dismantling joints shall be as manufactured by Romac Series DJ 400, or approved equal.

2.6 Installation:

Couplings, dismantling and expansion joints shall be installed in accordance with the manufacturer's recommendations. All buried couplings shall be wrapped with two (2) layers of ten (10) mil polyethylene film and sealed with ten (10) mil plastic tape.

END OF DOCUMENT 2014

Technical Specifications

Document No. 2015 WATER MAIN HYDROSTATIC TESTING (4/17/02)

1. General:

This specification supersedes Section 336.03.08, "Pressure Line - Pressure and Leakage Tests", of the Standard Specifications. Water mains shall be pressure tested in accordance with all the following requirements.

2. Test Pressure:

Test pressure for water distribution pipe shall be the class designation/rating of the pipe.

3. Procedure:

Pressure and leakage tests shall be performed at the same time. The total testing time for each section of a new main installed shall be a minimum of two (2) hours.

When pipeline installation, testing and backfilling can be accomplished in the same day, backfill only enough to prevent lifting of the pipe prior to filling with water and field testing. When conditions require that trenches be backfilled immediately after the pipe has been laid, testing shall be conducted prior to placement of permanent surface.

After the main has been laid it shall be filled with water for a minimum of twenty-four (24) hours before being subjected to the hydrostatic pressure test. Each section of pipeline shall be filled slowly with water and all air expelled by means of taps at points of highest elevation.

The specified test pressure shall be applied by means of a pump connected to the pipe in a manner satisfactory to Engineer. The test pressure shall be maintained for the specified time during which all exposed pipe, couplings, fittings, valves, and hydrants shall be examined carefully.

All cracked or defective elements shall be removed and replaced and the test repeated until all visible leakage has been stopped and the requirements as specified in subsection 10.1.4 Allowable Leakage have been met.

4. Allowable Leakage:

No pipe installation will be accepted if the leakage for the section of the line that is tested is greater than that determined by the following formula:

$\text{Allowable Leakage (gallons per hour)} = ND(P)^{1/2}/7400$	
Where:	N = Number of pipe joints in test section. D = Nominal diameter of pipe (inches). P = Test pressure (psig).

If the test leakage in any section is greater than permitted, Contractor shall, at his own expense, locate and repair the defective materials until the leakage is within the permitted allowance. All visible leaks shall be repaired regardless of the amount or rate of leakage.

5. Measurement of Leakage:

Leakage shall be defined as the quantity of water that must be supplied into the newly laid pipe, or any valved section thereof, to maintain pressure within five (5) psi (0.35 Bar) of the specified test pressure after the air in the pipeline has been expelled and the pipe filled with water. The quantity of water supplied to maintain pressure shall be quantified by means of a positive

Technical Specifications

displacement measurement from a reservoir of known volume. Leakage shall not be measured by a drop in pressure in a test section over a period of time.

END OF DOCUMENT 2015

Technical Specifications

Document No. 2016 WATER MAIN DISINFECTING (4/19/10)

1. General:

Disinfection of water mains shall be accomplished in accordance with all the requirements set forth in AWWA C651-92 unless otherwise specified herein.

Precautions shall be taken to protect pipe interiors, fittings, and valves against contamination. Pipe delivered for construction shall be stored so as to minimize entrance of foreign material. When pipe laying is not in progress, for example, at the close of the day's work, all openings in the pipeline shall be closed by water tight plugs. Joints of all pipe in the trench shall be completed before work is stopped. If water accumulates in the trench, the plugs shall remain in place until the trench is dry.

If dirt, that in the opinion of Engineer, will not be removed by flushing enters the pipe, the interior of the pipe shall be cleaned and swabbed as necessary with a 5% hypochlorite disinfecting solution.

No contaminated material capable of supporting prolific growth of micro-organisms shall be used for sealing joints. Packing material shall be handled in such a manner as to avoid contamination.

Yarning or packing material shall consist of molded or tubular rubber rings or treated paper. Materials such as jute or hemp shall not be used.

The lubricant used in the installation of sealing gaskets shall be suitable for use in potable water. It shall be delivered to the job in enclosed containers and shall be kept clean.

2. Procedure:

2.1 General:

Unless otherwise stated herein, the tablet method of disinfection shall be used. However, since this method requires scrupulous cleanliness to be effective, it will not be allowed if trench water or foreign material has entered the main. If the pipe, in Engineer's opinion is not in a clean condition another method prescribed in AWWA C651-92 shall be used for disinfection even if the tablets have already been installed.

2.2 Placement of Tablets:

Tablets shall be placed in each section of pipe and also in hydrants, hydrant branches, and other appurtenances. They shall be attached by an adhesive, except for the tablets placed in hydrants and in the joints between the pipe sections. All the tablets within the main must be at the top of the main. If the tablets are fastened before the pipe section is placed in the trench, their position shall be marked on the section to assure that there will be no rotation.

Disinfection tablets shall be placed using Titebond Multi-Purpose Clear 100% Silicone, or approved equal food grade silicon. There shall be no adhesive on the tablet except on the broad side next to the surface to which the tablet is attached.

2.3 Filling and Contact:

When installation has been completed, the main shall be filled with water at a velocity of less than one (1) foot per second. This water shall remain in the pipe for at least

Technical Specifications

twenty-four (24) hours. Valves shall be manipulated so that the strong chlorine solution in the line being treated will not flow back into the line supplying the water.

2.4 Dosage:

The number of hypochlorite tablets to be attached to the inside of each section of pipe shall be as shown in the following table taken from AWWA C601-86:

Number of 5-G Hypochlorite Tablets Required for Dose of 25 Mg/l*						
Length of Section-feet	Diameter of Pipe - inches					
	4"	6"	8"	10"	12"	16"
13 or less	1	1	1	2	3	4
18	1	1	2	3	4	6
20	1	1	2	3	4	7
30	1	2	3	4	6	10
40	1	2	4	5	7	13

*Based on 3.25 g Available chlorine per tablet; any portion of tablet rounded to next higher number.

2.5 Final Flushing:

After the applicable retention period, the heavily chlorinated water shall be flushed from the main until the chlorine concentration in the water leaving the main is no higher than that generally prevailing in the system, or less than one (1) mg/l. Chlorine residual determination shall be made to ascertain that the heavily chlorinated water has been removed from the pipeline.

2.6 Bacteriologic Tests:

After final flushing and before the water main is placed in service, a sample or samples shall be collected by Inspector from the end of the line and submitted by Contractor to the Carson City Wastewater Reclamation Plant Laboratory for testing for bacteriologic quality and shall show the absence of coliform organisms.

2.7 Repetition of Procedure:

If the initial disinfection fails to produce satisfactory samples, disinfection shall be repeated until satisfactory samples have been obtained at Contractor's expense. The tablet method cannot be used in these subsequent disinfections. When the samples are satisfactory, the main may be placed in service.

END OF DOCUMENT 2016

Technical Specifications

Document No. 2017 UNDERGROUND MARKING TAPE (4/17/02)

1. General:

Underground marking tape shall be installed above all buried water pipelines.

2. Materials:

Tape shall be non-detectable polyethylene marking tape. Tape shall be blue in color and shall be three (3) inches wide by 4 mil thick and shall bear large printing denoting, "Buried Water Line Below".

Tracer wire shall be 12 gauge coated solid copper wire taped every 5 (five) feet to all water mains, water services, air releases etc. and shall remain continuous and conductive throughout all components of the water system. All splices, as from a service wire to a main wire, shall be soldered and wrapped with UL listed electrical tape.

3. Installation:

Underground marking tape shall be installed according to the manufacturer's instructions and as shown on the Drawings.

Marking tape shall be continuous from valve to valve. Tape shall be placed flat with the writing facing up and shall be laid twelve (12) inches above the top of pipe between the bedding and the trench backfill.

END OF DOCUMENT 2017

Technical Specifications

Document No. 2018 ALTITUDE VALVES (6/19/02)

1. General:

This section specifies the altitude valve to be used for the project.

2. Materials:

Valves shall be constructed of the following materials:

Item	Material
Body	Cast Iron ASTM A48
Trim	Bronze ASTM B61, Brass QQ-B-26
Pilot Control System	Bronze with stainless Trim

3. Type:

The valve shall be the two-way flow type which closes at the high water level, and opens for the return flow when the pressure at the valve inlet is less than the storage reservoir pressure. Valve shall be a non-throttling type which will remain full open until the shutoff point in the reservoir is reached.

This valve shall be a hydraulically operated, diaphragm-actuated, globe pattern valve. It shall contain a resilient, synthetic rubber disc, having a rectangular cross-section, contained on three and one-half sides by a disc retainer and forming a tight seal against a single removable seat insert. The diaphragm assembly containing the valve stem shall be fully guided at both ends by a bearing in the valve cover and an integral bearing in the valve seat. This diaphragm assembly shall be the only moving part and shall form a sealed chamber in the upper portion of the valve, separating operating pressure from line pressure. The diaphragm shall consist of nylon fabric bonded with synthetic rubber and shall not be used as a seating surface. Packing glands and/or stuffing boxes are not permitted and there shall be no pistons operating the valve or pilot controls. All necessary repairs shall be possible without removing valve from the line.

The pilot control system shall be a diaphragm-actuated, three (3)-way type that operates on the differential force between the height of the water in the reservoir and an adjustable spring-load.

The entire valve and control system shall be designed so that no surface water can be drawn into the pilot system or main valve at any time. Valve shall be flanged and shall have a pressure rating of 175 psi. The altitude valve shall be Cla-Val Clayton Model 21OG-16, with spring range 5-100 feet of water. In order to maintain system uniformity, no substitutes will be accepted.

4. Installation:

Valves shall be installed in accordance with the manufacturer's recommendations. Contractor shall be responsible for placing and adjusting the different levels of the mercury pots for the initial setting of the tank shut off level.

END OF DOCUMENT 2018

Technical Specifications

Document No. 2019 AIR RELEASE, AND AIR AND VACUUM VALVES (10/13/03)

1. General:

Air release, and air and vacuum valves shall be installed in the locations and shall conform to the types and sizes shown on the Plans.

2. Materials:

2.1 Air and vacuum valves shall be designed to allow large quantities of air to escape out the orifice when filling a pipeline and to close water tight when the liquid enters the valve. The air and vacuum valve shall also permit large quantities of air to enter through the orifice when the pipeline is being drained to break the vacuum. The valve shall consist of a body, cover, baffle, float and seat. The baffle will be designed to protect the float from direct contact of the rushing air and water to prevent the float from closing prematurely in the valve. The seat shall be fastened into the valve cover without distortion and shall be easily removed if necessary. The float shall be stainless steel designed to withstand 300 psi or more. The float shall be center guided for positive seating.

2.2 Air release valves shall be designed to release accumulated air from a pipe while the pipe is in operation and under pressure. Resilient seats shall be replaceable and provide drop tight shut-off to the full valve operating pressure rating of 150 psi.

2.3 The bolts and nipples of the valve must be tar coated for resistance to corrosion. Air release valves shall be "Valmatic" or "APCO" brand valves, or approved equal. Air and vacuum valves shall be "APCO" brand, or approved equal.

3. Installation:

Air release, and air and vacuum valves shall be installed in accordance with the manufacturer's recommendations.

END OF DOCUMENT 2019

Technical Specifications

Document No. 2021 STEEL PIPE (3/11/05)

1. General:

Steel piping shall include all steel pipe, fittings, specials, and closure pieces. The pipe diameters shown on the drawings or specified in this division of this specification are nominal inside diameters. Pipe 12 inches in diameter or less may be furnished in ASA Schedule 40 or heavier steel pipe.

The manufacturer of pipe shall furnish an Affidavit of Compliance to Engineer stating that all pipe, specials, fittings, lining and coating, and all materials furnished to the work comply with these specifications and the AWWA standards.

Shop drawings for all steel pipe, fittings, specials, and closure pieces 8 inches in diameter and larger shall be submitted as specified in subsection 4 Shop Drawings and Quality Control/Inspections of the General Conditions. Each section of the steel pipe, fittings, specials, and closure pieces shall be assigned a "mark number" which shall be referenced on the shop drawings and stenciled on the inside wall and the outside wall of each pipe or special section. In fabricating specials, a mark corresponding to the true vertical axis of the fitting shall be made on the top and bottom of the specials.

2. Products:

2.1 Materials:

All steel used in the fabrication of steel piping and steel plate specials shall be in accordance with the provisions of this section.

Materials used in fabricating the steel cylinders shall be hot-rolled carbon steel sheets or plates. Steel sheets shall conform to the "Specification for Hot-Rolled Carbon Steel Sheets and Strip, Structural Quality," ASTM A 570, Grade 33. Plates shall conform to the "Specification for Low and Intermediate Tensile Strength Carbon Steel Plates of Structural Quality," ASTM A 283, Grade D or the "Specification for Structural Steel," ASTM A 36, except as modified herein. The minimum yield point of steel used for fabrication of steel cylinders shall be 33,000 psi.

Steel used in welded steel plate specials shall conform to the requirements of Subsection 2.1 A(1). Dimensions of steel plate specials shall conform to the "Standard for Dimensions for Fabricated Steel Water Pipe Fittings," AWWA C208.

Steel used for wire reinforcement shall conform to the requirements of the "Specifications for Cold Drawn Steel Wire for Concrete Reinforcement," ASTM A 82, or the "Specification for Welded Steel Wire Fabric for Concrete Reinforcement," ASTM A 185.

Unless otherwise shown on the Contract Drawings, all steel pipe shall be fusion bonded epoxy lined and coated (FBE) and shall conform to the requirements of the "Standard for Steel Water Pipe 6 Inches and Larger," AWWA C200, and the "Standard for Fusion-bonded Epoxy Coating for the Interior and Exterior of Steel Water Pipelines," AWWA C213, except as modified herein.

Except as otherwise provided herein, the steel cylinder for FBE steel pipe shall have a minimum wall thickness as follows:

Design Pressure (psi)	Nominal Pipe I.D. (Inches)	Steel Cylinder O.D. (Inches)	Minimum Wall Thickness (Inches)
200	10	10.750	0.375
200	12	12.750	0.375

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Pipe and appurtenances shall be designed for maximum deflection of 2 percent under external loads.

Steel plate specials are defined as bends, reducers, outlets, closure pieces, piping in structures, or other special shapes. Steel plate specials shall be dimensioned in accordance with the "Standard for Dimensions for Fabricated Steel Water Pipe Fittings," AWWA C208, and shall be manufactured in accordance with the "Standard for Steel Water Pipe 6 Inches and Larger," AWWA C200, and the "Standard for Fusion-bonded Epoxy Coating for the Interior and Exterior of Steel Water Pipelines," AWWA C213.

Except as otherwise provided herein, steel plate specials shall be fabricated from steel plate. The finish inside diameter of the steel plate specials shall match the finish inside diameter of the FBE lined and coated steel pipe specified above and have a wall thickness as follows:

Design Pressure (psi)	Nominal Pipe I.D. (Inches)	Steel Cylinder O.D. (Inches)	Minimum Wall Thickness (Inches)
200	10	10.750	0.375
200	12	12.750	0.375

Pipe flanges and gaskets shall conform to the requirements of the "Standard for Steel Pipe Flanges for Waterworks Service - Sizes 4 In. through 144 In." AWWA C207. All flange installation shall be done in the shop and shop coated with FBE after welding. No field welding shall be accepted.

Fusion-Bonded Epoxy lining and coating shall conform to the requirements of the "Standard for Fusion-Bonded Epoxy Coating for the Interior and Exterior of Steel Water Pipelines," AWWA C213. All FBE coating shall be applied in the shop.

3. Installation:

3.1 Outlets:

Outlets permitted by these Contract documents shall be built into the wall of the pipe and shall be formed by welding to the cylinder, cast or fabricated steel fittings of suitable design before the exterior FBE coating is placed around the fittings. Outlets 12 inches and smaller may, at the option of Contractor, be fabricated from Schedule 40 or heavier steel pipe in the standard outside diameters, i.e., 12³/₄, 10³/₄, 8⁵/₈, 6⁵/₈, or 4¹/₂ inches. All outlets shall be designed in accordance with the Manual of Water Supply Practices, "Steel Pipe - A Guide for Design and Installation," AWWA Manual No. M11. Unless otherwise shown on the drawings or specified herein, outlets with diameters less than or equal to 66.67 percent of the principal pipe diameter shall be reinforced with collar pads. Outlets with diameters from 66.67 to 83.33 percent of the principal pipe diameter shall be reinforced with wrapper plates, and outlets with diameters greater than 83.33 percent of the principal pipe diameter shall be reinforced with crotch plates. Wrapper plates may be used in lieu of crotch plates if supporting calculations are submitted as a part of the original shop drawing. The measurement from the outside of the principal pipe to the face of the flange shall be 9 inches unless otherwise shown on the drawings.

Except as otherwise shown on the drawings, where bends are specified, the radius of bends shall not be less than 2¹/₂ times the pipe diameter or ten feet, whichever is less. At the option of Contractor, a bend may be factory welded to the adjacent pipe section.

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Except as otherwise shown on the drawings, the length of all reducers shall not be less than seven times the difference in the pipe diameters to be connected.

4. Fabrication and Testing:

The pipe shall be manufactured in sections having nominal lengths of 20 to 48 feet except where shorter lengths are required on curves, at major street intersections, where closure or special sections are required, or where otherwise shown on the drawings. The pipe shall consist of a welded steel cylinder with steel flanges. Each end of each pipe section shall be provided with wood stulls of suitable size wedged into position at right angles to each other, using at least one wedge at each end to prevent the pipe from becoming out-of-round prior to installation. Spacing of the stulls shall be in accordance with Section 3.3(a). Additional bracing shall be used to limit the deflection in any pipe section to not more than $\frac{1}{2}$ of 1 percent of the pipe diameter and shall remain in place until the sections of the pipe are joined together and backfilled. The pipe shall be furnished complete with rubber gaskets, butt straps, and closure pieces where required.

Steel cylinders may be fabricated by using one or more steel sheets for each cylinder. All welding shall be by an approved method that shall produce a full penetration of the weld in accordance with the "Standard for Steel Water Pipe 6 Inches and Larger," AWWA C200, Section 3.2.1. Welds may be either straight or spiral. The welds when tested shall develop the tensile strength of the adjoining sheets. After each cylinder has been completed with joint rings welded in place, but before lining and coating, it shall be tested under hydrostatic pressure in accordance with the "Standard for Steel Water Pipe 6 Inches and Larger," AWWA C200, Section 3.4. The cylinder shall show no leaks, undue distortion, or other defects. Any leaks shall be re-welded by hand and the pipe tested again. No caulking to stop leaks will be permitted. After pipe with welded bells has been hydrostatically tested, the longitudinal welds in the bell shall be tested by an etching test in accordance with the "Standard for Steel Water Pipe 6 Inches and Larger," AWWA C200, Section 3.3.5.4.

Each steel plate special, upon completion of the welding, but before lining and coating, shall be bulkheaded and tested under a hydrostatic pressure of not less than $1\frac{1}{2}$ times the design pipe pressure, provided, however, that if straight pipe used in fabricating the specials has been previously tested, no further hydrostatic testing will be required, provided the transverse seams are tested by the herein stated etching test process. Any pin holes or porous welds that may be revealed by the test shall be chipped out and re-welded and the pipe or fittings retested.

On finished pipe, the circumference of the inside bell ring contact surface shall not exceed the circumference of the outside spigot ring contact surface by more than $\frac{3}{16}$ of an inch. Bell and spigot joints shall conform in all respects to details shown on the drawings. Where welded joints are specified, the pipe shall be provided with slip-bell joints or butt-strap joints for field welding. If butt-strap joints are to be provided and field cutting will not be required, the butt-strap sections shall be attached to the ends of the pipe at the manufacturer's plant. Half of each butt-strap shall be welded to the upper half of the pipe, and the remaining half of the butt-strap shall be welded to the lower half of the adjoining pipe. Field and plant welding shall be as shown on the drawings. Butt-straps shall be accurately aligned and retained in position during welding to ensure proper alignment of the pipe upon installation. Welded joints shall conform in all respects to the details shown on the drawings.

Steel plate specials shall be fabricated in accordance with the following provisions in addition to those provisions specified herein above:

- 1) All hand welding shall be done by welders certified in accordance with Appendix II of the "American Standard Code for Pressure Piping," ASA B 31.1, or in accordance with the "Standard for Field Welding of Steel Water Pipe," AWWA C206.

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2)Where mechanical type couplings are shown, the ends of the pipe shall be supplied with Type D shoulders as shown in Figure 2 of AWWA C606. Where pipe smaller than 12 inches is furnished in standard diameters and where the wall thickness equals or exceeds the manufacturer's minimum recommended wall thickness, the pipe ends may be grooved. Where sleeve type couplings are shown, the ends of the pipe shall be supplied in accordance with AWWA C219.

3)Except as otherwise specified or shown on the drawings, all flanges to be installed on pipe or fittings shall be faced and drilled in accordance with 150 pound ASA dimensions or, in lieu thereof, and shall be in accordance with the "Standard for Steel Pipe Flanges for Waterworks Service," AWWA C 207, Class D or Class E as applicable. All flanges shall be furnished with flat faces. All pipe flanges shall be attached with bolt holes straddling the vertical axis of the pipe unless otherwise shown on the drawings. Attachment of the flanges to the pipe shall conform to the applicable requirements of the "Standard for Steel Pipe Flanges for Waterworks Service," AWWA C207.

Steel pipe and fittings to be installed in structures shall have the exterior surfaces thoroughly cleaned and coated with an epoxy system in accordance with the requirements of "Standard for Fusion-bonded Epoxy Coating for the Interior and Exterior of Steel Water Pipelines," AWWA C213. Where painting of exterior is desired for color coding, painting shall be as specified in Document No. 7001 Painting of these Technical Specifications in addition to FBE coating in accordance with these specifications. Unless otherwise shown on the drawings, exterior surfaces of pipe or fittings passing through structure walls shall be coated to a point approximately 6 inches inside the structure or the wall flange if provided.

5. Handling and Transporting Steel Pipe:

All handling and lifting of pipe and pipe specials shall be done with belt slings. A minimum of two slings shall be used at approximately the 1/3 points of each pipe section. The slings shall bear uniformly against the pipe. Padded cables may not be used as slings. No metal shall bear against the pipe during handling. When not being handled, pipe shall be supported on timber cradles, sand bags, or mounds of earth properly prepared to eliminate all rock points and provide uniform support along the full length. Factory wood stull bracing shall be installed between seven and nine feet from each pipe end and at a maximum interval of ten feet throughout the entire length of the pipe section with a minimum of four stulls installed per 40 foot pipe section. Wood stulls shall remain in place until backfill operations are complete. When being transported, the pipe shall be supported at all times in a manner that will not permit distortion or damage to the lining or coating with all strapping and tie-downs being located within two feet of the wood stull bracing. Any pipe that is damaged as a result of handling or transporting shall be repaired to the satisfaction of Engineer or shall be removed and replaced as directed by Engineer.

All pipe shall be transported using blocking and hold-downs during shipment to prevent movement or shifting.

6. Installation of Steel Pipe:

Unless otherwise specified or shown on the drawings, Contractor shall furnish and install all pipe, specials, fittings, closure pieces, thrust blocks, valves, supports, bolts, nuts, gaskets, jointing materials, and all other appurtenances as shown on the drawings and required to provide a complete installation. Pipe supports shall conform to pipe details where shown on the drawings provided that the support for all exposed piping shall be complete and adequate regardless of whether or not supporting devices are specifically shown on the drawings. At all

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times when the work of installing pipe is not in progress, all openings into the pipe and the ends of the pipe in trenches or structures shall be kept tightly closed. Contractor shall maintain the inside of the pipe free from foreign materials and in a clean and sanitary condition until its acceptance by Engineer. The pipe sections shall be laid in the trench to true alignment and grade in accordance with the drawings. Exceptional care shall be exercised in placing the pipe. Bumping of the pipe in the trench will not be permitted. Where closure sections are required by Contractor's laying operations, the sections shall be installed in accordance with applicable sections of these specifications. Contractor shall take all necessary precautions to prevent the pipe from floating due to water entering the trench from any source, assume full responsibility for any damage due to this cause, and at his own expense restore and replace the pipe to its specified condition and grade if it is displaced due to floating.

When the pipe is laid, the trenches shall be in a reasonably dry condition, and all necessary facilities shall be provided for lowering and properly placing the pipe sections in the trench without damage. All handling of steel piping shall be as specified in subsection 5 Handling and Transporting Steel Pipe. The slings shall bear uniformly against the pipe. When not being handled, all pipe shall be supported on timber cradles, sand bags, or mounds of earth. Wood stull bracing shall remain in place until backfill operations are complete. The pipe sections shall be laid to the line and grade shown on the drawings, and they shall be closely jointed to form a smooth flow line. Immediately before placing each section of pipe in final position for joining, the bedding for the pipe shall be checked for firmness and uniformity of grade.

Contractor shall take care during the backfill operation not to overload the pipe and cause excessive deflection in the pipe. After the backfill operation is completed, the interior of the pipeline will be inspected for excessive deflection caused during the backfill operations. If any section of pipe is determined to have deflected greater than two percent of the inside diameter of the steel cylinder, Contractor shall remove and replace that pipe section. Re-rounding of the pipe in place may be considered on a case-by-case basis. The pipe has been designed to withstand a live load equivalent to AASHTO HS-20. Backfilling and compaction equipment shall not be used over the pipe which exceeds this live load limits.

Rubber gasket joints shall be made by properly lubricating the rubber gasket with a suitable vegetable compound soap before it is placed in the groove at the spigot end. The gasket shall be stretched over the spigot end of the pipe and carefully seated in the groove. The gasket shall not be twisted, rolled, cut, crimped, or otherwise damaged or forced out of position during the closure of the joint. A "feeler" gage shall be used to check the position of the rubber gasket after the bell and spigot ends of the pipe joints have been joined together. Contractor shall coordinate the performance of the "feeler" gage check with the Inspector to allow for the observation of these checks.

7. Non-Fusion Bonded Epoxy Steel Pipe:

All Non-FBE steel pipe shall meet the same structural, testing and installation requirements as FBE steel pipe and be installed in accordance with the manufacturers instructions.

Field welding is permitted on non-FBE pipe and shall be done in accordance with AWWA C206. All welds shall be performed by certified welders and shall be sound, free from embedded scale and slag, have a tensile strength across the weld of not less than that of the thinner of the connected sections. All welds shall be water tight. The exterior of all direct buried non-FBE pipe shall be wrapped with cold applied tape in accordance with AWWA C209. Connections made between FBE pipe and plain steel pipe shall be done with flexible coupling adaptors as described in these specifications.

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Technical Specifications

Document No. 2022 FUSION-BONDED EPOXY LINING AND COATING FOR STEEL PIPE (3/14/05)

1. General:

Steel piping shall include all steel pipe, fittings, specials, and closure pieces.

The manufacturer of pipe shall furnish an Affidavit of Compliance to Engineer stating that the linings and coatings for all pipe, specials, and fittings comply with these specifications and the AWWA standards.

2. Products:

2.1 Materials:

Piping and Equipment Surfaces:

Contractor shall require the equipment suppliers to provide equipment that is free of salts, oil, and grease to the coating applicator.

Contractor shall require pipe suppliers to provide bare pipe that is free of salts, oil, and grease to the coating applicator.

Shop-Applied Epoxy Lining and Coating:

Lining and coating shall be 100% solids, thermosetting, fusion-bonded, dry powder epoxy resin: Scotchkote 134 or 206N, Lilly Powder Coatings "Pipeclad 1500 Red," H. B. Fuller 1 F-3003, or equal. Epoxy lining and coating shall meet or exceed the following requirements:

Hardness (minimum)	Barcol 17 (ASTM D 2583) Rockwell 50 ("M" scale)
Abrasion resistance (maximum value)	1,000 cycles: 0.05 gram removed 5,000 cycles: 0.115 gram removed ASTM D 1044, Tabor CS 17 wheel, 1,000-gram weight
Adhesion (minimum)	3,000 psi (Elcometer)
Tensile strength 7,300 psi	(ASTM D 2370) Penetration 0 mil (ASTM G 17)
Adhesion overlap shear, 1/8-Inch steel panel, 0.010 glue line.	4,300 psi, ASTM D 1002
Impact (minimum value)	100 inch-pounds (Gardner 5/8-inch diameter tup)

Field-Applied Epoxy Coating for Patching:

Use a two-component, 80% solids liquid resin, such as Scotchkote 306.

Painting and Coating of Grooved-End and Flexible Pipe Couplings

Line and coat couplings the same as the pipe. Color shall match the color of the pipe fusion epoxy coating.

Technical Specifications

3. Execution:

Shop Application of Fusion-Bonded Epoxy Lining and Coating--General Grind surface irregularities, welds, and weld spatter smooth before applying the epoxy. The allowable grind area shall not exceed 0.25 square foot per location, and the maximum total grind area shall not exceed 1 square foot per item or piece of equipment. Do not use any item, pipe, or piece of equipment in which these requirements cannot be met.

Remove surface imperfections, such as slivers, scales, burrs, weld spatter, and gouges. Grind outside sharp corners, such as the outside edges of flanges, to a minimum radius of 1/4 inch.

Uniformly preheat the pipe, item, or piece of equipment prior to blast cleaning to remove moisture from the surface. The preheat shall be sufficient to ensure that the surface temperature is at least 5°F above the dew point temperature during blast cleaning and inspection.

Sandblast surfaces to a clean surface. Protect beveled pipe ends from the abrasive blast cleaning.

Apply a phosphoric acid wash to the pipe, item, or piece of equipment after sandblasting. The average temperature, measured in three different locations, shall be 80°F to 130°F during the acid wash procedure. The acid wash shall be a 5% by weight phosphoric acid solution. The duration in which the acid is in contact with the surface shall be determined by using the average temperature as tabulated below:

Pipe Temperature (°F)	Contact Time (seconds)
80	52
85	45
90	36
95	33
100	28
105	24
110	21
130	10

After the acid wash has been completed, remove the acid with demineralized water having a maximum conductivity of 5 micromhos/cm at a minimum nozzle pressure of 2,500 psi.

Apply lining and coating by the electrostatic spray or fluidized bed process. Minimum thickness of lining or coating shall be 15 mils. Heat and cure per the epoxy manufacturer's recommendations. The heat source shall not leave a residue or contaminant on the metal surface. Do not allow oxidation of surfaces to occur prior to coating. Do not permit surfaces to flash rust before coating.

4. Shop Application of Fusion-Bonded Lining and Coating to Pipe-Additional Requirements:

Apply lining and coating per AWWA C213 except as modified herein.

Grind 0.020 inch (minimum) off the weld caps on the pipe weld seams before beginning the surface preparation and heating of the pipe.

Technical Specifications

5. Quality of Lining and Coating Applications:

The cured lining or coating shall be smooth and glossy, with no graininess or roughness. The lining or coating shall have no blisters, cracks, bubbles, underfilm voids, mechanical damage, discontinuities, or holidays.

6. Factory Testing of Coating—General:

Test linings and coatings with a low-voltage wet sponge holiday detector. Test pipe linings and coatings per AWWA C213, Section 5.3.3. If the number of holidays or pinholes is fewer than one per 20 square feet of coating surface, repair the holidays and pinholes by applying the coating manufacturer's recommended patching compound to each holiday or pinhole and retest. If the number of pinholes and holidays exceeds one per 20 square feet of coating surface, remove the entire lining or coating and recoat the item or pipe.

Measure the coating thickness at three locations on each item or piece of equipment or pipe section using a coating thickness gauge calibrated at least once per eight-hour shift. Record each measured thickness value. Where individual measured thickness values are less than the specified minimum thickness, measure the coating thickness at three additional points around the defective area. The average of these measurements shall exceed the specified minimum thickness value, and no individual thickness value shall be more than 2 mils below or 3 mils above the specified minimum value. If a section of the pipe, item, or piece of equipment does not meet these criteria, remove the entire lining or coating and recoat the entire item or piece of equipment.

7. Factory Testing of Lining and Coating of Pipe--Additional Requirements:

Check for coating defects on the weld seam centerlines. There shall be no porous blisters, craters, or pimples lying along the peak of the weld crown.

8. Field Repairs:

Patch scratches and damaged areas incurred while installing fusion bonded epoxy coated items with a two-component, 80% solids (minimum), liquid epoxy resin. Wire brush or sandblast the damaged areas to a clean, solid surface. Lightly abrade or sandblast the coating or lining on the sides of the damaged area before applying the liquid epoxy coating. Apply a two-part epoxy coating to defective linings and coatings to areas smaller than 20 square inches. Patched areas shall overlap the parent or base coating a minimum of 0.5 inch. If a defective area exceeds 20 square inches, remove the entire lining and coating and recoat the entire item or piece of equipment. Apply the liquid epoxy coating to a minimum dry-film thickness of 15 mils.

END OF DOCUMENT 2022

Technical Specifications

Document No. 4001 CONCRETE STRUCTURES (4/21/08)

1. General:

This Technical Specification covers all concrete structures including but not limited to bridges, culverts, headwalls, wingwalls, catch basins, manholes, retaining walls, abutments, piers, footings, foundations and similar structures as shown on the Plans and as specified herein.

All work to be performed shall be per Section 311, "Concrete Structures and Masonry Construction" of the Standard Specifications and these Technical Specifications. Also refer to Document No. 4002 Concrete Formwork and Document No. 4003 Concrete Reinforcement, of these Technical Specifications.

Except where the provisions of these Specifications are more exacting, the work of this section shall comply with all applicable provisions of the latest edition of the appropriate specifications of the American Society for Testing & Materials (ASTM) and the provisions of the American Concrete Institute (ACI).

2. Submittals:

Contractor shall submit a mix design for approval for each class of concrete to be used in the Work at least two (2) weeks prior to anticipated placement or as specified in subsection 4 Shop Drawings and Quality Control Inspections of the General Conditions.

3. Designing & Proportioning Concrete:

Concrete mix designs shall be prepared and submitted for approval for all classes of concrete to be used on the Project per Section 337.10, "General Structural Use Portland Cement Concrete" of the Standard Specifications.

If concrete is to be pumped, provide separate mix designs for all classes of concrete to be pumped. Slump tests for pumped concrete shall be taken at truck or pump hopper.

Drying shrinkage shall not exceed the indicated values after a seven (7) day curing time and a twenty-eight (28) day drying time when tested in accordance with ASTM C 157.

Approval of the mix design by Construction Manager does not relieve Contractor from full compliance with the strength, shrinkage and other requirements of these Technical Specifications.

4. Sampling and Testing:

Testing and certification of the component materials shall be the responsibility of Contractor. Testing of the end product as placed in the work shall be the responsibility of Carson City.

Batch plant and field inspection will be performed by a testing laboratory selected and paid for by Carson City.

Sampling and/or testing of the in-place concrete necessitated by reasons of unsatisfactory test results from control cylinders will be performed at the expense of Contractor, unless such testing indicates that the concrete meets the Specifications, in which case Carson City shall pay the expense of the testing.

All sampling and testing of component materials shall be performed in accordance with the following standard methods:

Technical Specifications

5. Concrete:

Inspection and testing of concrete shall be performed per Section 336, "Inspection and Testing" of the Standard Specifications.

If the average strength of five (5) consecutive tests of standard-cured cylinders falls below required compressive strengths, Construction Manager shall have the right to order a change in the mix proportions for the remaining portions of the structure. If the average strength of the job-cured cylinders falls below the required strength, he may require tests in accordance with ASTM Methods of Securing, Preparing and Testing Specimens from Hardened Concrete for Compressive and Flexural Strengths (ASTM C 42), or under load tests to be made of the portions of the structure so affected.

Drying shrinkage tests will be made as directed by Construction Manager. Test specimens shall be taken in the field during construction as directed by Construction Manager to determine compliance with these Specifications. Drying shrinkage specimens shall be fabricated, cured, dried and measured as specified in ASTM Specifications C 157. Measurements shall be made and reported for seven (7), fourteen (14), twenty-one (21), and twenty-eight (28) calendar days of drying. The effective gauge length of the specimens shall be a minimum of ten (10) inches. Longer gauge lengths are acceptable. Specimen size shall be four inches by four inches (4" x 4"). Compression test specimens shall be taken in each case from the same concrete as used for preparing drying shrinkage specimens. These test specimens shall be considered as part of the normal test for the project.

Inspection of Reinforcing Steel and Concrete forms will be required before any concrete may be poured. Contractor shall give Construction Manager a minimum of twenty-four (24) hours advance notice of each concrete pour so arrangements can be made for inspection and testing. The testing laboratory or an authorized representative of Carson City shall be present during the placing of all concrete to monitor the quality and slump of the concrete and the workmanship of placing and finishing. The testing laboratory or authorized representative shall make all necessary slump tests and prepare all required cylinders.

6. Materials:

Materials for Portland Cement Concrete shall be per Section 200.05, "Aggregates for General Structural Use Portland Cement Concrete" and Section 202, "Cement and Related Materials" of the Standard Specifications.

6.1 Admixtures:

Any admixtures used shall conform to the appropriate requirements of ASTM Standards, and shall be approved by Construction Manager before being used. CALCIUM CHLORIDE OR OTHER ACCELERATING ADMIXTURES WILL NOT BE APPROVED UNDER ANY CIRCUMSTANCES.

Classes of Concrete:

The various concrete mix designs to be used are as follows:

Class "A" Concrete:

Class "A" concrete shall develop a minimum compressive strength of 3,250 pounds per square inch (psi) in twenty-eight (28) calendar days, combined mix shall weigh approximately 145 pounds per cubic foot (pcf) air dry, coarse aggregate shall be size No. 67 (3/4-inch maximum); 3-inch maximum slump, no admixtures required, maximum shrinkage equal to 0.065%.

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Lightweight Class “LA” Concrete:

Lightweight concrete shall be Class “L.A.” per Section 311.21, “Lightweight Concrete Construction” of the Standard Specifications but shall develop a minimum compressive strength of 3,250 pounds per square inch (psi) in twenty-eight (28) calendar days, with 3 inch maximum slump, coarse aggregate size No. 67 (3/4-inch maximum), maximum shrinkage equal to 0.055%.

Freeze - Thaw Environment Concrete:

All concrete exposed to freeze-thaw environments shall meet the requirements of Section 337.10.01.01, “Portland Cement Concrete Exposed to Freeze-Thaw Cycles”, of the Standard Specifications.

7. Execution:

7.1 Conduits and Other Embedded Items:

When electrical conduits, pipes or other items are embedded in the concrete, they shall be of such character and so located as not to reduce the strength of the construction. Conduits or pipes less than 3/4-inch in diameter will not be regarded as reducing the strength of the structure. The location of any other item embedded in the concrete shall be verified with Construction Manager.

8. Mixing and Placing Concrete:

8.1 Preparation of Equipment and Place of Deposit:

Before batching concrete, all equipment for mixing and transporting the concrete shall be cleaned, and all debris and ice shall be removed from the places to be occupied by the concrete. Forms shall be thoroughly wetted (except in freezing weather). The reinforcement shall be thoroughly cleaned of ice, dirt, rust, scale, or other coatings.

Water shall be removed from the place of deposit before concrete is placed. All laitance (green concrete) and other unsound materials shall be removed from hardened concrete before additional concrete is added. Laitance shall be removed by water jet or sand-blasting.

9. Mixing:

Ready-mixed concrete shall be mixed and delivered in accordance with Specifications for Ready-Mixed Concrete (ASTM C 94).

Job-mixed concrete will not be permitted under any circumstances.

Mixing equipment shall not be charged beyond its rated capacity; transit mix trucks loaded beyond their rated mixing capacities will not be permitted to discharge.

Plant and equipment for proportioning, mixing and conveying concrete shall be subject to Engineer's approval.

10. Conveying:

Technical Specifications

Equipment for cutting, pumping, pneumatically and conventionally conveying concrete shall be of such size and design as to ensure a practically continuous flow of concrete from the mixer to the place of final deposit without separation or loss of materials.

11. Placing:

Placing concrete shall be per Section 311.10, "Handling and Placing Concrete", of the Standard Specification and these Technical Specifications. Concrete shall be deposited in the forms within one hour after the addition of the mixing water. Concrete shall be deposited as nearly as practicable in its final position to avoid segregation due to rehandling or flowing. The placing of concrete shall be carried on at such a rate that concrete is at all times plastic and flows readily into the spaces between the bars. No concrete that has been contaminated by foreign material shall be used.

Once placing is started, it shall be carried on as a continuous operation until placement of the panel or section is completed.

All concrete shall be thoroughly compacted by means of approved vibrators during the operation of placing and shall be thoroughly worked around reinforcement, embedded fixtures, and into the corners of the forms. Vibrators shall be used for consolidation of the concrete only, and care shall be taken to avoid excessive vibration. At least one spare vibrator shall be maintained on the job at all times during the placing of concrete.

Such surfaces as are to be finished shall be brought to proper grade, struck off and finished in a workmanlike manner. In the case of floor slabs, precautions must be taken to be sure that the total thickness shown on the Plans exists at all places. Care shall be taken to avoid excessive "jitter-bugging".

Contractor's superintendent in charge of the concrete work shall mark in ink on the Plans the time and the date of placing of concrete in the different members. These Plans shall be kept on file at the job until the completion of the structure, and shall be subject to the inspection of Construction Manager at all times.

12. Finishing of Formed Surfaces:

All finishing of structure concrete shall be per Section 311.14, "Surface Finishes" of the Standard Specifications.

13. Weather Protection:

Cold-Weather Requirements:

Adequate equipment shall be provided for heating concrete materials and protecting concrete during freezing or near-freezing weather. No frozen materials or materials containing snow or ice shall be used.

All reinforcement, forms, fillers and ground with which the concrete is to come in contact shall be free from snow and ice. Whenever the temperature of the surrounding air is below 40 degrees F., all concrete placed in the forms shall have a temperature of 45 degrees F. or higher after placement. Adequate means shall be provided for maintaining this temperature for five (5) calendar days. When high-early strength concrete is used, a temperature of at least 45 degrees F. shall be maintained for three (3) calendar days. In either case, any additional time necessary to ensure proper curing of the concrete shall be provided as directed by Construction Manager. The housing, covering, or other protection used in connection with curing shall remain in place and intact at least twenty-four (24) hours after the artificial heating is discontinued. No dependence shall be placed on salt or other chemicals for the prevention of freezing.

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Hot Weather Requirements:

In hot weather, suitable precautions shall be taken to avoid drying of the concrete prior to finishing operations. Use of windbreaks, sunshades, fog sprays or other devices shall be provided as needed. Provision shall be made for maintaining concrete in a moist condition by means of mats, kraft paper, or plastic film with all edges sealed for a period of at least five (5) calendar days after placement.

Concrete deposited in hot weather shall not have a placing temperature that will cause difficulty from loss of slump, flash set, or cold joints. Concrete temperature shall be less than 75 degrees F., unless higher temperatures are permitted by Construction Manager.

14. Structure Backfill:

Structure backfill may not be placed against any structure until the concrete has gained 80% of the design strength, as determined by compressive strength tests.

END OF DOCUMENT 4001

Technical Specifications

Document 4002 CONCRETE FORMWORK (4/18/08)

1. General:

Formwork for concrete structures shall be per Section 311, "Concrete Structures and Masonry Construction" of the Standard Specifications and these Technical Specifications and as shown on the Plans.

All inserts, anchors, hangers, bolts, pipe sleeves, structural steel shapes, and other imbedded items shown on the Plans shall be installed under this section of the work.

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

2. Referenced Standards:

Construct and erect concrete formwork in accordance with applicable section of the following referenced standards and applicable construction safety regulations for the place of work:

ACI 318 and 2006 I. B. C. Section 1908 - Modifications to ACI 318.

ACI 318, Section 6.1 - Recommended Practice for Concrete Formwork.

Materials delivered to the job shall be stored and protected so that there will be no inclusion of foreign or undesirable matter and no exposure to any element which would reduce the useful properties of the material.

3. Materials:

Plywood for exposed surfaces shall be Douglas Fir plywood conforming to American Plywood Association requirements for B-B PLYFORM, Class I or II. Alternate equal form material shall be subject to approval by Engineer prior to use.

Lumber for forming foundation and other minor surfaces shall be Douglas Fir or equal.

Nails, spikes, lag bolts, through bolts, anchorages, etc., shall be sized as required to rigidly maintain formwork in place during concrete placement.

Form ties shall be a snap-off metal type designed such that no metal will remain within one and one quarter inch (1-1/4") of the finished concrete surface after ties are snapped.

Form release agent shall be colorless mineral oil or other agent which will not stain concrete or impair natural bonding or color characteristics of finished concrete coating.

Fillets for chamfered corners shall be one (1) inch by one (1) inch rigid foam plastic or clear pine furnished in maximum possible lengths.

4. Execution:

Contractor shall be responsible for the design of all forms and false work supports. The design of all forms shall insure that the various members are not stressed more than allowed by the International Building Code for the materials used.

Verify lines, levels and centers before proceeding with formwork. Ensure that dimensions agree with Plans.

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Care shall be taken to insure that forms are true to the required lines, grades, and surfaces so as to give a uniform, neat and workmanlike finish to all concrete surfaces. Form supports shall be of sufficient strength, properly braced, and on adequate foundations so that there shall be no settlements or distortion when the weight of the concrete is added. Forms for all concrete shall be of such strength and construction as to prevent any spread, shifting, or settling when concrete is deposited therein, and shall be tight enough to avoid any leakage or washing out of cement mortar from the concrete.

Arrange and assemble formwork to permit dismantling and stripping, so that concrete is not damaged during its removal.

Arrange forms to allow stripping without removal of principal shores, where and when these are required to remain in place.

Apply form release agent on formwork in accordance with manufacturer's recommendations. Apply prior to placing reinforcing steel, anchoring devices, and embedded items. Do not apply form release agent where concrete surfaces will receive finishes which are affected by agent. Soak inside surfaces of untreated forms with clean water. Keep surfaces wet prior to placing concrete, except in freezing weather.

Provide formed openings where required for pipes, conduits, sleeves, and other work to be embedded in and passing through concrete members.

Locate and set in place items which will be cast directly into concrete.

Coordinate work of other sections and cooperate with trade involved in forming and setting openings, slots, recesses, chases, sleeves, bolts, anchors and other inserts.

Install concrete accessories in accordance with manufacturer's recommendations; straight, level, and plumb. Ensure items are not disturbed during concrete placement.

All exposed concrete corners shall be chamfered three quarter (3/4) inch or tooled unless otherwise shown on the Plans.

When a concrete pour has been stopped for a sufficient length of time so that shrinkage or warp has separated the forms and the concrete, provisions shall be made to draw the forms into firm contact with the concrete before placing additional concrete. Care must be taken to prevent any shoulders or ledges being formed at a cold joint.

Shear keys shall be formed at junctions between floors and walls.

Forms to be reused shall be in good condition and shall be thoroughly cleaned before being used.

5. Tolerances:

The following maximum tolerance shall be allowed for form construction:

Deviation from horizontal and vertical lines respectively:

1/4 inch in 10 feet;

3/8 inch in 20 feet;

Deviation in cross sectional dimensions in thickness of slabs and walls; plus or minus 1/4 inch.

All other; plus or minus 1/2 inch.

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Individual form members shall be sufficiently rigid so as to limit deflection between supports to not more than $L/360$.

6. Cleaning:

Provide temporary ports or openings in formwork where required to facilitate cleaning and inspection. Locate openings at bottom of forms to allow flushing water drain. Close temporary ports or openings with tight fitting panels flush with inside face of forms, neatly fitted so that joints will not be apparent in exposed concrete surfaces.

Clean forms as erection proceeds to remove foreign matter. Remove cuttings, shavings, and debris within forms. Flush with water or use compressed air to remove remaining foreign matter. Ensure that water and debris drain to exterior through clean out ports.

During cold weather, remove ice and snow from within forms. Do not use de-icing salts. Do not use water to clean out completed forms, unless formwork and concrete construction proceed within heated enclosure. Use compressed air or other means to remove foreign matter.

7. Form Removal:

Do not remove forms, shores, and bracing until concrete has gained sufficient strength to carry its own weight and construction loads which are liable to be imposed upon it. Verify strength of concrete by compressive test results.

Remove formwork progressively and in accordance with code requirements and so that no shock loads or unbalanced loads are imposed on the structure.

Loosen forms carefully. Do not wedge pry bars, hammers, or tools against concrete surfaces.

Remove forms not directly supporting weight of concrete as soon as stripping operations will not damage concrete.

END OF DOCUMENT 4002

Technical Specifications

Document No. 4003 CONCRETE REINFORCEMENT (5/10/01)

1. General:

Reinforcing steel and its placement in concrete structures shall be per Sections 206, "Reinforcing Steel", 311, "Concrete Structures and Masonry Construction", and 326, "Reinforcing and Structural Steel" of the Standard Specifications, these Technical Specifications, and as shown on the Drawings.

All concrete work shown or required is steel reinforced unless specifically shown as "plain concrete." Where reinforcing is not shown on a drawing and the drawing is not marked "plain concrete", then it shall be reinforced the same as other similar work where reinforcing is shown or detailed.

2. Referenced Standards:

Applicable sections of the latest edition of the following referenced standards are incorporated as a part of this specification:

- 1) ACI 318 - Building Code requirements for Reinforced Concrete.
- 2) CRSI 63 - Recommended Practice for Placing Reinforcing Bars.
- 3) CRSI 65 - Recommended Practice for Placing Bar Supports Specifications, and Nomenclature.
- 4) ASTM A615 - Deformed and Plain Billet Steel Bars for Concrete Reinforcement.
- 5) ACI 315 - American Concrete Institute - Manual of Standard Practice.

3. Quality Control:

Inspection of Reinforcing Steel: Before any concrete may be placed on any particular portion of the work, the reinforcing steel shall be checked and approved by Engineer or his representative. Any errors or discrepancies found by him shall be corrected before concrete may be placed. Such check and approval shall not relieve Contractor from responsibility for full compliance with contract requirements.

4. Shop Drawings:

Shop drawings of all reinforcing steel shall be submitted to Engineer for approval prior to fabrication. Drawings shall clearly indicate bar sizes, spacings, locations, and quantities, bending, and cutting schedules, and supporting and spacing devices. Submit shop drawings as single copy reproducibles, such as sepia prints.

5. Materials:

Reinforcing steel shall be deformed bars conforming to ASTM A 615, Grade 40. At Contractor's option, Grade 60 may be used in lieu of Grade 40.

All steel for reinforcing shall be new, unrusted stock, free from mill scale and without dirt, rust, or contaminants other than may have accumulated in prompt delivery to the work.

6. Accessories Material:

Technical Specifications

Tie Wire:

Minimum 16-gauge annealed type, or patented system accepted by Engineer.

Chairs, Bolsters, Bar Supports, Spacers:

Sized and shaped for strength and support of reinforcing during construction conditions. Spacer or support bars required for the proper placement of reinforcement shall be provided whether or not shown on the Drawings.

Chairs or bolsters in areas of exposed concrete shall be non-corrosive, and Contractor shall be responsible for selecting a class of chair suitable for the use and finish of the concrete. All bar supports used shall have a minimum protection of Class B.

7. Fabrication:

Fabricate concrete reinforcing in accordance with ACI 315.

Locate reinforcing splices, not indicated on Drawings, at points of minimum stress. Location of splices shall be subject to Engineer's approval.

8. Execution:

Reinforcement shall be accurately placed and securely tied at intersections with 16 gauge black annealed wire. It shall be maintained in proper position by chairs, bar supports, or other approved devices. Bars in footings shall be supported on 3" precast blocks.

Bars shall lap not less than 30 bar diameters unless otherwise indicated. Splices in adjoining horizontal bars shall be staggered at least 6 feet.

Where this is not feasible, submit suggestions for Engineer's consideration. Horizontal bars shall be hooked around corners not less than 30 bar diameters.

Concrete protection of reinforcing shall be not less than 1-1/2 inches clear from formed surfaces exposed to air and 2-inches clear where exposed to soil or water, unless otherwise indicated. Reinforcing shall be properly supported to maintain this position during concrete placement.

Wherever conduits, piping, inserts, sleeves etc., interfere with the placing of reinforcing steel as shown or called for, Contractor shall consult with Engineer and secure from him the method of procedure before pouring any concrete. The binding or field cutting of bars around openings or sleeves will not be permitted without Engineer's approval.

END OF DOCUMENT 4003

Technical Specifications

Document No. 4006 PRECAST CONCRETE VAULTS (8/28/01)

1. General:

This section specifies the concrete work and appurtenances required for precast concrete vaults. Vaults shall be constructed of reinforced concrete sections and shall conform to the minimum dimensions shown on the Drawings. Cast-in-place vaults will be considered acceptable only after approval is granted by Engineer. Contractor shall submit to Engineer four (4) sets of shop drawings showing size and placement of reinforcing steel, etc. and structural calculations for the vault design sealed by a licensed Civil Engineer. Vaults shall be designed for a minimum H20-44 traffic loading.

2. Materials:

2.1 Precast Concrete Sections:

Precast sections shall be cast in a yard specializing in precast concrete materials. Contractor shall submit Shop Drawings of the proposed structure for review prior to construction. Drawings must provide information for complete review including dimensions, reinforcement design calculations and layout, etc.

All vaults shall be inspected during casting by an independent, certified testing laboratory, approved by Engineer, to establish the strength of the concrete and the adequacy of curing, to certify the date the vaults were cast, and to confirm that the steel has been properly placed. The cost of these tests shall be included in the various unit price Contract Items and no special payment will be made therefore. This testing shall be performed by the laboratory at Contractor's manufacturing plant, prior to shipment.

At least three (3) cylinders shall be taken each day that vaults are cast, with batch samples to be designated by the laboratory representative. At least one (1) set of cylinders shall be taken for each nine (9) cubic yards of concrete used in the construction of the precast vaults. These samples shall be tested for strength. If the samples fail to meet minimum concrete strength requirements set forth in the Specifications, all vault sections manufactured from the concrete from which the cylinders were made will be considered rejected.

In addition, Carson City reserves the right to core vaults either at the site or point of delivery to validate strength of concrete and placement of steel. If cores fail to demonstrate the required strength or indicate incorrect placement of reinforcing steel, all sections not previously tested will be considered rejected until sufficient additional cores are tested, at Contractor's expense, to substantiate conformance to these requirements.

2.2 Concrete:

All concrete used in the construction of vaults shall have a minimum twenty-eight (28) calendar days compressive strength of 4,000 psi and shall have a mix design prepared per Standard Specifications Section 202.01.08.01, "Concrete Mix Design".

3. Curing:

All concrete shall be cured in accordance with any one of the methods specified in ASTM 478. The facilities for curing shall, however, be subject to the review and prior approval of Engineer. No precast concrete shall be delivered to the job site until the specified minimum compressive strength of 4,000 psi, as determined by crushing tests on cured concrete cylinders, has been obtained.

4. Access Opening:

Technical Specifications

The access opening shall be installed as shown on the Drawings.

Frames and Covers:

Frames and covers shall be cast of gray iron conforming to ASTM A48 Class 30. Unless specified otherwise, cover shall be of the double leaf opening type, cast in place. Frame shall be securely attached to the top precast shaft unit or section of the vault.

5. Access Doors & Ladders:

Options for access doors may range from a manhole to a prefabricated style door. Access door and frame for the prefabricated style shall be Bilco Brand, or approved equal, and shall have 1/4-inch steel or aluminum diamond pattern capable of withstanding designed loads as shown on the Drawings. Door shall be equipped with heavy forged brass hinges, stainless steel pins, spring operators for easy operation and an automatic hold open arm with release handle. A snap lock with removable handle shall be provided. Cast in portion of frame shall be coated with bituminous paint prior to casting into concrete. Where double leaf doors are required, a safety chain shall be installed on the doors. A ladder shall be installed as per plan, bolted to vault wall and shall include a "ladder-up" safety post, Bilco Brand or approved equal. Doors shall include a flush mount access panel for a locking hasp and pad-lock assembly. Lid shall be marked by welding 2" letters indicating "WATER" or "RCW" as indicated on the drawings.

6. Joint Sealing Compound:

Precast sections shall be jointed with a preformed joint sealing compound, "Ram-Nek", manufactured by K. T. Snyder Company, Inc., Houston, Texas, "Quikset" manufactured by Quikset Utility Vaults, Santa Ana, California, or equal, applied in accordance with the manufacturer's instructions.

7. Waterproofing:

The interior of the vault shall be coated with one coat of gray plus one coat of white water sealant, Latex Base DRYLOK Masonry Waterproofer, or approved equal. The exterior of the vault shall be coated with one coat of fluid-applied elastomeric waterproofing, Vulkem 201 or 222 Waterproofing Membranes, or approved equal. The precast vault does not require an elastomeric sheet at seam locations.

8. Installation:

8.1 Transportation of Delivery:

Every precaution shall be taken to prevent injury to the precast sections during the transportation and unloading of the sections. The precast sections shall be unloaded using skids, pipe hooks, rope slings, or suitable power equipment, if necessary and the sections shall be under perfect control at all times. Under no condition shall the precast sections be dropped, dumped or dragged.

If any precast section is damaged in the process of transportation, or handling, such section shall be rejected and immediately removed from the site and replaced at Contractor's expense.

9. Excavation and Backfill:

Excavation and backfill shall be done as specified in Document No. 2001, Staking, Excavation, Backfilling and Compacting for Water Lines of these Technical Specifications. Contractor is to be aware of high ground water conditions which may cause flooding of floating of the vault.

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10. Joint Sealing Compound:

The sealing compound shall be applied as follows:

- 1) The joint shall be cleaned with a brush.
- 2) The Silicon treated protective paper shall be removed from one side of the preformed rope and preformed rope shall be laid paper side up on the cleaned joint surface. The surface shall be pressed firmly end-to-end around the entire joint making one (1) inch laps where necessary.
- 3) The protective paper shall be removed from the preformed rope and the next section shall be lowered into place.
- 4) Sufficient preformed joint sealing compound shall be installed so as to completely fill the joint and show a "squeeze-out" on the inside and outside of the joint.

11. Pipe and Fittings:

All pipe and fittings, including installation shall conform to the provisions of the Specifications for the designated pipe and fittings.

12. Elevation and Installation:

Each section shall be set perfectly plumb. Sections of various heights shall be used in order to bring the top of the vault access opening to the required elevation.

The elevations at which access openings are to be set shall conform to the requirements set forth on the Drawings, but in all cases shall be governed by Engineer in the field. Where the access opening is within the roadway or shoulder, it is to be placed flush with the existing surface. Where the structure is outside the limits of the traveled shoulder, but not in roadside ditch, it should be placed one-tenth (1/10) foot or more above the existing ground surface. Where the access opening falls within the existing roadside ditch or right of way, it is to be placed approximately one and one half (1-1/2) feet above the existing ground surface or as directed by Engineer.

13. Concrete Finish:

Concrete walls, roof and floor shall have surface defects repaired and have a minimum rough form finish as specified in the ACI (American Concrete Institute) Manual of Concrete Practice Section 301, Chapter 9 and 10. Interior surfaces of the vault shall be painted with two coats of water resistant acrylic-vinyl white paint as specified in Document No. 7001 Painting of these Technical Specifications. Exterior surfaces of the vault shall be painted, to a depth of six inches (6") below the final grading line as specified in Document No. 7001 Painting of these Technical Specifications, with color to be selected by Carson City.

14. Cleaning:

Vaults walls, floor and ceiling shall be cleaned of any foreign debris, including forms, tape, form oil, etc., prior to final acceptance. All vaults shall be thoroughly cleaned of any accumulation of silt, debris, or foreign matter of any kind.

Access openings shall be cleaned of foreign matter to insure a satisfactory fit and appearance prior to final acceptance.

15. Testing:

Technical Specifications

It is the intent of the Drawings and Specifications that vaults be as watertight and free from infiltration as possible. Any evidence of leakage throughout the warranty period shall be repaired to the satisfaction of Engineer at the sole expense of Contractor.

END OF DOCUMENT 4006

Technical Specifications

Document No. 4008 CONSTRUCTION STANDARDS (5/31/01)

1. Portland Cement Concrete:

1.1 Portland Cement Concrete Compressive Strength Penalty:

The third sentence of Section 202.01.14, Concrete Strength Evaluation, of the Standard Specifications is hereby amended to read: "Concrete in an area represented by the tests shall be considered structurally adequate if the average of the three cores is equal to at least 92.3 percent of the required minimum strength, and no single core is less than 85 percent of the design strength". In the event any class of Portland cement concrete is placed and is shown by test to be below the specified twenty-eight (28) day compressive strength, a determination shall be made by Engineer as to whether the concrete shall be removed and replaced or allowed to remain in place. This determination shall be based on an evaluation of the durability and other qualities of the concrete necessary to the integrity of the structure. If the concrete is allowed to remain in place, it is agreed by the parties to these Contract documents that a penalty shall be applied to the failing quantity of concrete at a rate of five (5) percent of the Contract unit bid price for each fifty (50) p.s.i. or portion therefore below the specified minimum compressive strength, to a maximum penalty of twenty-five (25) percent, as set forth in the following example for the class of concrete shown:

Specified Min. 28 Day Compressive Strength - p.s.i.	Penalty (Per Unit Bid Price) Percent Deduction
3250	0
3,249 – 3,200	5
3,199 – 3,150	10
3,149 – 3,100	15
3,099 – 3,050	20
3,149 – 3,000	25

The reduced price shall apply to all concrete represented by the strength tests below the specified minimum compressive strength.

When a compressive strength test falls below the specified twenty-eight (28) day compressive strength, Engineer may determine that an alternate strength test is required or Contractor may request such a test. When an alternate strength test is required and the test results show the concrete fails to meet the minimum strength required, Contractor shall be responsible for the costs of such alternate strength tests. In case Engineer has not determined that an alternative strength test is necessary and Contractor elects to have an alternate strength test made, Engineer will then make such a test; however, should this test fail to indicate that the twenty-eight (28) day compressive strength requirements have been met, the cost thereof shall be deducted from any money due or to become due to Contractor. Concrete required to be removed will not be paid for and the removal thereof will be made at Contractor's expense.

2. Bituminous Plantmix Pavement:

2.1 Bituminous Material Penalty:

In the event that any bituminous plantmix pavement is placed and is shown by extraction tests to be outside the job-mix formula specifications limits, a determination shall be made by Engineer as to whether the bituminous plantmix pavement shall be removed and replaced or allowed to remain in place. If the bituminous plantmix pavement is allowed to remain in place, it

Technical Specifications

is agreed by the parties to these Contract documents that a penalty shall be applied to the failing quantity of bituminous plantmix pavement as described below.

There shall be a 10 percent deduction per the unit price bid applied to all bituminous plantmix pavement represented by the failing extraction tests for each 0.1%, or portion thereof, out of job-mix formula specification limits as shown below:

Out Of Specification % Range	Penalty (per Unit Bid Price) Percent Deduction
0.0% - 0.10%	10%
0.11% - 0.20%	20%
0.21% - 0.30%	30%
0.31% - 0.40%	40%
Greater than 0.40%	Rejected, remove and replace

3. Density Penalty:

In the event that any bituminous plantmix pavement is placed and is shown by density tests to be outside the job-mix formula specifications limits, a determination shall be made by Engineer as to whether the bituminous plantmix pavement shall be removed and replaced or allowed to remain in place. If the bituminous plantmix pavement is allowed to remain in place, it is agreed by the parties to these Contract documents that a penalty shall be applied to the failing quantity of bituminous plantmix pavement as described below.

Marshall density (50 blows) Relative Compaction	Penalty (per unit price bid) Percentage Deduction
96.0% and above	-0-
95.0% to 95.9 %	10%
94.0% to 94.9%	20%
93.0% to 93.9%	30%
Below 93.0%	Remove and replace

4. Thickness Penalty:

In the event that any bituminous plantmix pavement is placed and is shown by thickness tests to be outside the specifications limits, a determination shall be made by Engineer as to whether the bituminous plantmix pavement shall be removed and replaced or allowed to remain in place. If the bituminous plantmix pavement is allowed to remain in place, it is agreed by the parties to these Contract documents that a penalty shall be applied to the failing quantity of bituminous plantmix pavement as described below.

Thickness deficiency In inches	Penalty (per unit price bid) Percentage Deduction
0.00" - 0.25"	15%
0.26" - 0.50"	30%
Greater than 0.50"	Remove and replace
(NOTE: All thickness measurement shall be done prior to or exclude the thickness of open grade material.)	

END OF DOCUMENT 4008

Technical Specifications

Document No. 5001 WATER TANK FOUNDATION PREPARATION (9/1/04)

1. General:

The work to be performed under this section shall include final grading of the tank pad and installation of drain rock base.

2. Existing Site Conditions:

Site shall be cleared and grubbed of all vegetation. The depth of grubbing shall be approximately 0.2 to 0.3 feet (see soils report).

3. Subsurface Conditions:

Subsurface conditions are as shown in the geotechnical report. Excavation is unclassified and includes excavation to subgrade elevations indicated, regardless of character of the materials and obstructions encountered.

4. Compaction Test Method:

Where referred to herein, relative compaction or relative density shall mean the in-place dry density of soil expressed as a percentage of maximum dry density of the same material, as determined by ASTM D 1557 Compaction Test Procedure. Optimum moisture content shall mean the moisture content of maximum dry density as determined above. The limits of compaction shall extend five (5) feet minimum outside tank perimeter. The costs of the site compaction tests shall be paid by Carson City. The cost of all retests (from failed tests) shall be paid for by Contractor.

5. Compaction Equipment:

Contractor shall provide and use sufficient equipment of a type and weight suitable for the conditions encountered in the field. The equipment shall be capable of obtaining the required compactions in all areas, including those that are inaccessible to ordinary rolling equipment.

6. Materials:

6.1 Drain Rock Base:

Sieve Size	Percent by Weight Passing Sieve
1 inch	100
3/8 inch	30-100
No. 4	0-40
No. 200	0-5

Drain rock base shall be hard, durable gravel or crushed rock free of organic material, clay, large rocks, etc., and shall meet the following gradation requirements:

Volcanic materials will not be acceptable for drain rock base. Drain rock base shall not be placed until a sample has been submitted to and approved by Engineer.

7. Construction:

7.1 Final Grading:

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After excavation of the tank site has been completed, the tank pad will be final graded. The tank pad shall be defined as the area within a 90-foot radius of the center of the tank. Final grading shall consist of grading the tank pad to the specified elevations, removal of loose rocks and debris and removal of all surface irregularities. The final grade shall not vary more than one half (1/2) inch from the specified elevation at any location.

8. Subgrade Preparation:

The subgrade for the drain rock base shall be prepared as indicated in the geotechnical report. All rocks greater than 2 inches in diameter shall be removed from the surface, and the finished surface shall be smooth and free of any surface irregularities and loose rocks. The subgrade shall not vary more than one half (1/2) inch from the specified elevation at any location.

9. Drain Rock Base Placement:

Drain rock base shall be densified using a vibratory plate. Drain rock base shall be placed in layers not exceeding six inches in thickness. Each layer shall be densified as stated above.

END OF DOCUMENT 5001

Technical Specifications

Document No. 5003 WELDED STEEL WATER STORAGE TANK (4/15/10)

1. General:

This specification concerns the furnishing of all materials, tools, equipment, and incidentals and performing all of the work to erect and coat (1) new steel water storage tank conforming to AWWA D100 Specifications, including all accessories and appurtenances at the location contained herein and as shown on the Plans.

Design, materials and construction shall be in accordance with the latest revision of the "AWWA Standard for Welded Steel Tanks for Water Storage" (AWWA D100). Design by Appendix C of AWWA D100 is allowed.

Contractor shall submit complete design calculations and shop drawings for review by Engineer prior to erection and/or construction of any part of the tank. The design calculations and shop drawings shall be stamped and signed by a registered professional civil or structural engineer licensed in the State of Nevada. Design calculations and shop drawings shall be submitted in accordance with the Special Conditions. Engineer's approval of shop drawings or schedules shall apply in a general sense only deviations from the Contract Drawings or Specifications, unless such deviation is specifically approved in writing by Engineer. Responsibility for agreement of drawings with job dimensions and conditions and for correction of errors in shop drawings with schedules shall rest with Contractor.

Upon final approval of the tank shop drawings by Engineer, Contractor shall furnish to Carson City a minimum of one (2) sets of stamped original shop drawings with the final corrections and any revisions incorporated therein.

2. Design General Requirements:

The lowest one (1) day mean ambient temperature for purposes of design will be +5 degrees F. No additional thickness for corrosion will be required and no cathodic protection will be required.

The reservoir shall be designed for a seismic force with specific requirements defined within the latest edition of the Uniform Building Code, and in accordance with Appendix A of AWWA D100.

The tank shall be designed for wind loading in accordance with AWWA D100 (latest edition), and the Uniform Building Code (latest edition), and the highest and most stringent requirements shall govern.

The reservoir shall have a cone roof.

Shell thickness shall be in accordance with Section 3 of AWWA D100 (latest edition) or Appendix C of same reference.

Floor may be either butt welded or lap welded in accordance with AWWA D100 (latest revision), however, floor shall bear evenly on the tank base. Bubbles or humps in the floor will not be acceptable.

Materials and accessories shall be in accordance with Section 2 of AWWA D100 (latest edition) or Appendix C of same reference.

3. Water Storage Reservoir Accessories:

3.1 Outside Ladder:

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The outside ladder (1 required) shall have side rails, not less than 2 x 3/8 inches, with a spacing between side rails of 16 inches, and rungs not less than 3/4 inches round or square, spaced 12 inches on centers. The ladder shall be equipped with a safety cage locking gate as shown on the Plans. A roof guard rail shall be installed as shown on the Plans.

Two (2) circular shell manholes with a minimum diameter of Thirty (30") inches. The manhole openings shall be adequately reinforced to account for all possible loading conditions.

Roof hatch shall have a minimum opening dimension of twenty-four (24) inches. The hatch shall be provided with suitable hinges and hasps to permit locking. The hatch shall have a curb at least four (4) inches high, and the cover shall overlap it at least two (2) inches.

Inlets and outlets that shall be constructed out of Schedule 40 steel pipe, diameter shall be as shown on the Plans. Steel pipe shall be lined and coated as stated in "Steel Pipe for Water Tank Site".

The overflow shall be constructed out of Schedule 40 steel pipe. It shall be stubbed into and welded to the tank, with reinforcing plate. The overflow piping shall run down the outside of the tank and shall be connected to the tank with maximum spacing between connecting point of six (6) feet as shown on the Plans. The contractor shall provide a calculation that shows the weir box and associated piping has been sized to accommodate the average flow volume into the tank. The Contractor shall request the flow volume information from the Carson City Public Works Department.

Roof vents shall be furnished and installed as shown on the Plans. The contractor shall provide a calculation that shows the roof vents have been sized to accommodate the average flow volume into the tank. The Contractor shall request the flow volume information from the Carson City Public Works Department.

Liquid level indicator shall be "Half Travel" and as shown on the Plans.

Inside ladder shall be constructed using the same dimensions for side rails and rungs as those used for outside ladder.

4. Erection, Inspection, and Weld Tests:

The reservoir shall be erected in accordance with Section 10 of AWWA D100. All inspection and tests of welding shall be completed before application of paint and protective coatings. All welders shall be qualified by ASME requirements in all positions. Inspection shall be in strict accordance with Section II of AWWA D100.

Inspection of welded tank shell joints shall be by radio-graphic testing in accordance with AWWA D100. Contractor shall provide and pay for the radiographic testing. Testing shall be accomplished by a testing firm or laboratory acceptable to Engineer.

All radiographic testing shall be accomplished in the presence of Engineer. Any testing accomplished without Engineer being present shall be redone at Contractor's expense. The x-rays and certified reports of forwarded to Engineer. Any welds found to be defective shall be chipped out, rewelded, re-x-rayed and retested in accordance with applicable provisions of AWWA Standard D100, all at Contractor's expense.

If Appendix C design is used, all specified additional inspections, welding procedure qualifications and testing shall be provided by Contractor at Contractor's expense.

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Painting and Protective Coatings:

The reservoir, associated piping and all appurtenances shall be coated and painted as specified in Document No. 5005 Steel Water Tank Interior Coating and Exterior Painting of these Technical Specifications.

END OF DOCUMENT 5003

Technical Specifications

Document No. 5004 STRUCTURAL AND MISCELLANEOUS METAL (12/31/00)

1. Scope:

This section covers all items fabricated from metal shapes, plates, sheets, rods, bars, or castings and all other wrought or cast metal except component parts of equipment and items covered by other sections.

Fabricated metal items which are detailed on the drawings but not mentioned specifically herein shall be fabricated in accordance with the applicable requirements of this section.

2. Basic Materials:

All materials shall be new and undamaged and shall conform to pertinent ASTM or other industry standard specifications, including the following:

2.1 Steel:

Plates and Shapes: ASTM A36

Sheets: ASTM A366 or A569, zinc coated

Pipe: ASTM A120

2.2 **Bolts:**

Unfinished: ASTM A307

High Strength: ASTM A325

Self-Locking Nuts: Prevailing torque type, IFI-100, Grade A

Flat Washers: ANSI B27.2

Lock Washers: Table 1 of Specifications for Structural Joints using ASTM A325 or A490 bolts, AISC Steel Construction Manual

2.3 **Checkered Plate:**

Fed Spec QQ-F-461;

Inland "4-way floor plate"

U.S. Steel "Multigrip floor plate"

or equal

2.4 **Structural Tubing:**

ASTM A500 or A501

Cast Iron:

ASTM A48, Class 25 or better

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2.5 **Stainless Steel: 188**

Plates: ASTM A167

Bolts: IFI-104, Grade 303 or 305

2.6 **Aluminum:**

Sheet and Plate: ASTM B209, alloy 6061-T6

Rolled Sections: ASTM B308, alloy 6061-T6

Rod and Bar: ASTM B211, Alloy 6061-T6 or 2017-T4

Extrusions: ASTM B221, alloy 6063-T5 or T6

Pipe: ASTM B429, alloy 6061-T6 or 6063-T6

Bolts: IFI-104, Grade 24T4

Castings: ASTM B26 or B85

Bird Screen: 2 mesh, aluminum wire cloth, minimum wire diameter 0.063 inch.

3. General Requirements:

Except as otherwise specifically noted on contract drawings, or specified herein, all materials and work for structural steel and miscellaneous metal work shall be in conformity with applicable provisions of the latest edition of the AISC "Steel Construction Manual" and AISC "Specification for the Design, Fabrication and Erection of Structural Steel for Buildings".

4. Connections:

All connections except those otherwise specifically detailed on the drawings shall be made with unfinished bolts. All bolts shall be equipped with self-locking nuts or lock washers. Where welding is required or permitted, all butt and miter welds shall be continuous and where exposed to view shall be ground smooth. In addition, intermittent welds shall have an effective length of at least two (2) inches and shall be spaced at not more than six (6) inches apart.

5. Shop Fabrication:

Structural steel and miscellaneous metal shall be fabricated in conformity with dimensions, arrangement, sized, and weights or thickness shown on the drawings or stipulated in the specifications.

All members and parts, as delivered and erected, shall be free of warps, local deformations, or unauthorized bends. Holes and other provisions for field connections shall be accurate and shop checked, so that proper fit will result when the units are assembled in the field. Erection drawings shall be prepared, and each separate piece shall be marked as indicated thereon. All field connection materials shall be furnished.

6. **Field Erection:**

Technical Specifications

Structural steel and miscellaneous metal shall be stored on blocking so that no metal touches the ground and water cannot collect thereon. The material shall be protected against bending under its own weight or superimposed loads.

Before assembly, surfaces to be in contact with each other shall be thoroughly cleaned. All parts shall be assembled accurately as shown on the drawings. Light drifting will be permitted to draw parts together, but drifting to match unfair holes will not be permitted. Any enlargements of holes necessary to make connections in the field shall be done by reaming with twist drills. Enlarging holes by burning is absolutely prohibited.

7. Shop Coating:

7.1 Materials:

Unless otherwise authorized, shop applied coatings shall be:

Rust Inhibitive Shop Primer for Steel:

Cook "391-R-254 Clorocon Barrier coat"

Mobil "13-R-50 Chromox Q.D. Primer"

Tnemec "77 Chem-Prime"

or equal.

Zinc Rich Primer:

Ameron "Dimetcote 6"

Carboline "Carbo Zinc 11"

Koppers "Inorganic Zinc 3"

Mobil "Mobilzinc 7"

Tnemec "92 Tneme-Zinc"

or equal.

Coal Tar Paint:

Koppers "Bitumastic Super Service Blac"

Porter "Tarmastic 103"

Tnemec "450 Heavy Tnemecol"

or equal.

8. Cleaning:

Surfaces shall be dry and proper temperature when coated and free of grease, oil, dirt, dust, grit, rust, loose mill scale, weld flux, slag, weld spatter, or other objectionable substance. Surfaces shall be cleaned by power wire brushing or blasting. Welds shall be scraped, chipped, and brushed as necessary to remove all weld spatter.

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9. Edge Grinding:

Sharp corners of cut or sheared edges which will be submerged in operation shall be dulled by at least one pass of a power grinder to improve paint adherence.

10. Galvanizing:

All galvanizing shall be done by the hot-dip process after fabrication in conformity with requirements of ASTM A123, A13, or A385. Articles to be galvanized shall be pickled before galvanizing.

Where galvanized bolts are specified or required by the drawings, cadmium or zinc plated bolts will be acceptable provided cadmium plating conforms to Type NS of ASTM A165 and zinc plating conforms to Type GS of ASTM A164.

11. Castings:

Miscellaneous iron castings shall be hot-dipped in asphalt varnish or given a shop coat of coal tar paint.

12. Steel:

Unless otherwise specified, all ungalvanized structural and miscellaneous steel shall be given a rust inhibitive prime coat in the shop after fabrication. Steel surfaces shall be prime coated as soon as practicable after cleaning. All painting shall be done in a heated structure if the outside air temperature is below 50 F. Steel shall not be moved or handled until the shop coat is dry and hard.

13. Aluminum:

All surfaces of aluminum which will be in contact with concrete, mortar, or dissimilar metals shall be given a heavy coat of coal tar paint.

14. Other Surfaces:

No shop coating will be required for zinc-coated steel, stainless steel, or bronze surfaces.

15. Film Thickness:

The dry film thickness of the shop coating shall be at least 1-1/2 mils for rust inhibitive primer at least 3 mils for zinc rich primer, and at least six (6) mils for coal tar paint.

16. Drawings and Data:

Complete data, detailed drawings, and setting or erection drawings covering all structural and miscellaneous metal items shall be prepared by Contractor before fabrication. Data and drawings shall be submitted as specified in subsection 4 Shop Drawings and Quality Control/Inspections of the General Conditions.

All welds shall be properly identified on the detailed Drawings.

END OF DOCUMENT 5004

Technical Specifications

Document No. 5005 STEEL WATER TANK INTERIOR COATING AND EXTERIOR PAINTING (6/16/10)

1. General:

1.1 Purpose:

The purpose of this specification is to establish methods and procedures for coating, painting and disinfecting new steel water storage tanks, and the repainting of existing steel water storage tanks.

1.2 Scope of Work:

Work to be performed includes application of protective coatings to interior surfaces, paints to the exterior surfaces and disinfection of interior surfaces. Work also includes surface preparation and other work necessary to accomplish the approved end result of a totally protected and usable structure. The surfaces referred to include the tank interior, the tank exterior including the entire above-grade tank plumbing, ladder, cage, hatch, safety fence, vents and guardrail and all tank appurtenances of the new or existing tank.

Prior to erection of steel water storage tanks, all surfaces made inaccessible after erection (except underside of bottom plates and tops of roof rafters and underside of the roof plates that will be in contact with roof rafters) shall be cleaned as specified herein and shall receive the coating/paint system for the specific area. This includes, but is not limited to, metal to metal contact areas, e.g. bolted joints, the underside of column bases and base plates and inaccessible areas such as interior and exterior of the overflow pipe, inlet/outlet pipe and vents.

2. Reference Specifications and Standards:

Without limiting the general aspects or other requirements of this specification, all work and equipment shall conform to applicable requirements of the Steel Structures Painting Council and manufacturer's printed instructions.

Engineer's decision shall be final as to interpretation and/or conflict between any of the referenced specifications and standards contained herein.

3. Contractor:

Contractor performing this work shall be a Nevada licensed Contractor, classification C-28(b). He shall have a minimum of five (5) years practical experience and successful history in the application of the specified products to surfaces of steel water storage tanks. He shall substantiate this requirement by furnishing a written list of references.

4. Pre-Construction Conference:

A Pre-Construction Conference shall be scheduled after the notice to proceed has been issued and prior to the start of blasting and coating operations. The purpose of this conference shall be to establish a working understanding between the parties and to discuss schedule, methods, inspection, access keys, security, etc.

5. Quality Assurance:

Quality assurance procedures and practices shall be utilized to monitor all phases of surface preparation, application and inspection throughout the duration of the project. Procedures or

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practices not specifically defined herein may be utilized, provided they meet recognized and acceptable professional standards and are approved by Construction Manager or his appointed Inspector.

6. Testing:

Construction Manager will make, or have made, such tests as he deems necessary to assure the work is being accomplished in accordance with the requirements of the Contract. In the event such tests reveal non-compliance with the requirements of the Contract, Contractor shall bear the cost of such corrective measures deemed necessary by Construction Manager, as well as the cost of subsequent retesting. It is understood and agreed the making of tests shall not constitute an acceptance of any portion of the work, nor relieve Contractor from compliance with the terms of the Contract.

7. Surface Preparation:

Surface preparation will be based upon comparison with: "Pictorial Surface Preparation Standards for Painting Steel Surfaces: SSPC-Vis 1 ASTM Designation D220, NACE Standard TM-01-70"; and as described below. Anchor profile for prepared surfaces shall be measured by using a non-destructive instrument such as a Keane-Tater Surface Profile Comparator or Testex press-O-Film System. Contractor shall provide said instrument for measuring anchor profile.

8. Application:

No coating shall be applied:

when the surrounding air temperature or the temperature of the surface to be coated is below 50 degrees F.

to wet or damp surfaces or in rain, snow, fog or mist.

when the temperature is less than 5 degrees F. above the dew point.

when it is expected the air temperature will drop below 50 degrees F. or less than 5 degrees F. above the dew point within eight (8) hours after application of coating.

when the wind speed is great enough to cause dust, dirt and plant debris to become air-borne so they become attached to the new paint system.

Dew point shall be measured by use of an instrument such as a Sling psychrometer in conjunction with U.S. Department of Commerce Weather Bureau Psychrometric Tables or equivalent.

If above conditions are prevalent, coating application shall be delayed or postponed until conditions are favorable. The day's coating application shall be completed in time to permit the film sufficient drying time prior to damage by atmospheric conditions.

9. Thickness and Holiday Checking:

Thickness of coatings and paint shall be checked with a non-destructive, magnetic type thickness gauge. An instrument such as a Tooke Gage should be used if a destructive tester is deemed necessary. Coating integrity of all interior coated surfaces shall be tested with an approved inspection device. Holiday detectors shall not exceed the voltage recommended by the manufacturer of the coating system. For thicknesses between 10 and 20 mils a non-sudsing type wetting agent shall be added to the water prior to wetting the detector sponge. No pinholes or other irregularities will be permitted in the final coating.

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10. Inspection Devices:

Contractor shall furnish, until final acceptance of coating and painting, inspection devices in good working condition for detection of holidays and measurement of dry-film thickness of coating and paints. Contractor shall also furnish U.S. Department of Commerce, National Bureau of Standards certified thickness calibration plates to test accuracy of thickness gauges. Dry film thickness gauges and holiday detectors shall be available at all times until final acceptance of application. Inspection devices shall be operated by, or in the presence of Construction Manager with location and frequency basis determined by Construction Manager.

Acceptable devices for ferrous metal surfaces include, but are not limited to k-D "Bird-Dog" and Tinker-Razor —1 Holiday detectors for coatings to 20 mils dry film thickness; Tinker Razor Models AP and AP-W holiday detectors for coatings in excess of 20 mils dry-film thickness, and "Inspector" or "Positest" units for dry film thickness gauging. Inspection devices shall be operated in accordance with the manufacturer's instructions.

11. Warranty Inspection:

Warranty inspection shall be conducted upon completion of all coating and painting work and after one (1) full year of service. All defective work shall be repaired and inspected in strict accordance with this Specification and to the satisfaction of Construction Manager.

11.1 **Notification:**

Construction Manager shall establish the date for the one (1) year inspection and reserves the right to coordinate the inspection with Carson City's normal water tank inspection program. This will allow Carson City up to ninety (90) calendar days past the one (1) year warranty to make all arrangements in order to perform the inspection and/or to drain the tank to allow Contractor to make the necessary interior repairs, if required.

11.2 **Inspection:**

The entire interior/exterior coating system shall be visually inspected as specified in subsection 5 Quality Assurance. Carson City shall make all arrangements to have the tank inspected by an independent certified professional water tank diving company. This company shall provide Carson City with two copies of it's report, one for Carson City and one for Contractor, which shall include photographs of key areas including ladder, rafters, roof support components, floor plates, etc. mapped out and described in sufficient detail. The report shall also include a recommendation of the repair work to be preformed. All defective, damaged or rusting areas shall be satisfactorily repaired and inspected at the sole expense of Contractor. All repaired areas shall then be electrically tested as specified in the above mentioned section. The entire exterior paint system shall be inspected as specified in subsection 5 Quality Assurance. All defective, damaged or rusting areas shall be satisfactorily repaired by and at the sole expense of Contractor.

11.3 **Inspection Report:**

After the inspection report covering the first anniversary inspection has been received by Carson City and Contractor, Contractor shall make arrangements to meet with Carson City to set forth the number and type of failures observed, the percentage of the surface area where failure has occurred and the names of the persons making the inspection.

11.4 **Schedule:**

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Upon completion of the inspection and receipt of Inspection Report as noted herein, Carson City shall establish a date for Contractor to proceed with the remedial work. If the water tank requires internal repair work, the date will include a sufficient amount of time to allow Carson City to drain the tank of all water, open all access hatches and remove excess water from the tank floor. Any delay on the part of Contractor to meet the schedule established by Carson City shall constitute breach of this Contract and Carson City may proceed to have defects remedied as specified under the subsection 8.9 Warranty of the General Conditions.

11.5 **Remedial Work:**

Any location where coating or paint has peeled, bubbled, or cracked and any location where rusting is evident shall be considered to be a failure of the system. Contractor shall make repairs at all points where failures are observed by removing the deteriorated coating or paint, cleaning the surface and re-coating or repainting with the same system. If the area of failure exceeds 25 percent of the total coated or painted surface, the entire coating or paint system may be required to be removed and re-coated or repainted in accordance with the original Specification.

11.6 **Costs:**

All noted costs for Contractor's inspection of all repair work shall be borne by Contractor. Contractor, in figuring his bid, shall include an appropriate amount for the inspection of any repair work; including re-testing and disinfection after all repairs have been completed, as no additional allowances will be paid by Carson City for said inspection and repair.

12. Safety and Health Requirements:

12.1 **General**

Ventilation, electrical grounding, and care in handling coatings, paints, solvents and equipment are important safety precautions during coating and painting projects. Contractor shall conform with safety requirements set forth by regulatory agencies applicable to the construction industry and manufacturer's printed instructions and appropriate technical bulletins and manuals. Contractor shall provide and require use of personal protective life saving equipment for persons working in or about the project site.

12.2 **Access Facilities and Ventilation:**

All ladders, scaffolding and rigging shall be designed for their intended uses. Ladders and scaffolding shall be erected where requested by Construction Manager to facilitate inspection and be moved by Contractor to locations requested by Construction Manager.

Where ventilation is used to control hazardous exposure, all equipment shall be explosion-proof. Ventilation shall reduce the concentration of air contaminant to the degree a hazard does not exist. Air circulation and exhausting of solvent vapors shall be continued until coatings have fully cured. Forced air ventilation during blast cleaning and coating application operations is mandatory.

12.3 **Head and Face Protection and Respiratory Devices:**

Equipment shall include protective helmets which shall be worn by all persons while in the vicinity of the work.

Technical Specifications

During abrasive blasting operations, nozzle men shall wear air-supplied helmets and all other persons who are exposed to blasting dust shall wear filter-type respirators and safety goggles. Contractor shall provide two sets of filter-type respirators, air-supplied masks and safety goggles to be used by Inspection personnel.

All of the above mentioned devices shall be kept in good working order.

12.4 **Grounding:**

Blasting, spray and air hoses shall be grounded to prevent accumulation of charges of static electricity.

12.5 **Illumination:**

Spark-proof artificial lighting shall be provided for all work in confined spaces. Light bulbs shall be guarded to prevent breakage. Lighting fixtures and flexible cords shall comply with the requirements of NFPA 70 "National Electric Code" for the atmosphere in which they will be used.

Whenever required by Construction Manager, Contractor shall provide additional illumination and necessary supports to cover all areas to be inspected. The level of illumination for inspection purposes shall be determined by Construction Manager.

12.6 **Toxicity:**

The solvents used with specified protective coatings are explosive at low concentrations and are highly toxic. Because of toxicity, the maximum allowable concentration of vapor shall be kept below the maximum safe concentration for eight-hour exposure.

12.7 **Protective Clothing:**

Coating and paint materials may be irritating to the skin and eyes. When handling and mixing coating and paints, workmen shall wear gloves and eye shields.

12.8 **Fire:**

During mixing and application of coatings and paints, all flames, welding and smoking shall be prohibited in the vicinity. Appropriate type fire extinguishers shall be kept nearby.

12.9 **Sound Levels:**

Whenever the occupational noise exposure exceeds the maximum allowable sound levels, Contractor shall provide and require the use of approved ear protective devices for all persons exposed to the noise including Carson City and Construction Manager's personnel.

13. Coating and Paint Materials:

13.1 General:

Materials specified in subsection 14 Interior Coating Materials for New Water Tank Construction are those which have been evaluated for the specific service. Products of Engard Coating Corporation, Tnemec Company, Inc., and Koppers Company, Inc., are listed to establish a standard of quality. Standard products of manufacturers other than those specified will be accepted when it is proved to the satisfaction of Construction Manager they are equal in

Technical Specifications

composition, durability, usefulness and convenience for the purpose intended. Substitutions will be considered provided the following minimum conditions are met:

The proposed coating or paint system shall have a dry film thickness equal to or greater than that of the specified system.

The proposed coating or paint system shall employ an equal or greater number of separate coats.

The proposed coating or paint system shall employ coatings or paints of the same generic type.

All requests for substitution shall carry full descriptive literature and directions for application, along with complete information on generic type, non-volatile content by volume and a list of 10 similar projects, all at least three (3) years old, where the coatings or paints have been applied to similar exposure.

If the above mentioned data appears to be in order, Construction Manager may require that Contractor provide certified laboratory data sheets showing the results of complete spectrographic and durability tests performed on the proposed substitute. Tests shall be performed by an independent testing laboratory satisfactory to Construction Manager and all costs incurred in the testing program shall be borne by Contractor.

In any case, Construction Manager shall be sole and final judge of the acceptability of any proposed substitution.

All materials shall be brought to the jobsite in the original sealed containers. They shall not be opened or used until Construction Manager has physically inspected the contents and obtained necessary data from information printed on containers or labels. Materials exceeding storage life recommended by the manufacturer shall be rejected.

Flammability, toxicity, allergenic properties, and any other characteristic requiring field precautions shall be identified and specific safety practices shall be stipulated.

All coatings, paint and disinfection materials shall be stored in enclosed structures to protect them from weather and excessive heat or cold. Flammable coatings and paints must be stored to conform with City, County, State and Federal safety codes for flammable coating and paint materials. At all times coatings and paints shall be protected from freezing.

Contractor shall use products of same manufacturer for all coats.

14. Interior Coating Materials for New Water Tank Construction:

Interior coating materials must be listed by the National Sanitation Foundation (NSF) for testing and certification for compliance with NSF Standard 60 & NSF Standard 61. They shall conform to the requirements of local and state air pollution regulatory agencies. Products containing perchloroethylene or trichloroethylene will not be permitted. Interior coating materials shall have a letter of acceptability from the State Health Department. NSF standards will supersede AWWA allowable material, if there is a conflict. Selected coatings must be NSF cleared for use inside the tank.

The interior of the tank shall be coated with epoxy coating. Epoxy coatings shall comply with AWWA Standard D102 (Latest Edition), Inside Coating System No. 1.

Polyurethane joint sealant shall be similar or equal to Federal Specifications TT-S-230 and approved for use in a potable water reservoir.

15. Exterior Paint Materials for New Water Tank Construction:

Technical Specifications

The exterior paint system shall comply with AWWA Standard D102 (Latest Edition), Outside Coating System No. 5.

Upon completion of the new paint system, the first eight feet of the tank exterior shall receive one clear coat of an approved, sacrificial anti-graffiti coating system such as "Graffiti-Melt", or approved equal.

16. Exterior Paint Materials for Re-Painting of Existing Water Tanks:

The exterior paint system of the existing Tank may contain lead. Carson City will verify this with the necessary tests and will provide this information to Contractor. If lead is found to be present, the project will be considered an "encapsulation" and the existing exterior paint system shall be power washed only. Power washing operations will utilize only potable water and the equipment will be operated using just enough pressure to clean, but not remove, any of the existing paint system. All vents and hatches shall be hand washed to prevent any of the wash water from entering the interior of the tank. Over-spray from power washing shall also not be allowed to drift over or around any of the vents or hatches.

The exterior paint system of the existing tank may contain paint that was used to cover graffiti and may not be compatible with the new paint system. It is the responsibility of Contractor to visit the site and include in his bid any additional work required to remove such paint.

The new exterior paint system shall consist of one coat, 3 mils minimum, of a two-part epoxy and one coat of a urethane color coat which shall conform to the requirements of California Air Resources Board Rule 1113. Contractor is responsible for assuring that the new paint system is compatible with these specifications and also with the existing paint system.

Areas of the steel tank that have experienced any of the following shall receive one coat of a rust inhibitive exterior primer coat, as specified in subsection 16 Exterior Paint Materials for New Water Tank Construction, with a dry film thickness of not less than 2 mils.; rusting due to the deterioration or failure of the existing paint system, rusting due to dents and/or scratches, or areas of bare metal that were exposed due to the surface washing operations.

The finish coat shall be a urethane paint of the final color. The color of the tank exterior shall be at the discretion of Carson City. After award of the project, Carson City will provide a current color chart to Contractor for color matching. Application rate shall be sufficient enough to cover the primer coat. All painting work near vents or hatches shall be applied by hand using rollers or brushes. Solar Panels, if so equipped, shall not be painted and shall only be covered with an opaque material for no more than four (4) hours per day, or a maximum of two (2) calendar days if covered with a transparent material. Antennas shall not be painted.

Upon completion of the new paint system, the first eight feet of the tank exterior shall receive one clear coat of an approved, sacrificial anti-graffiti coating system such as "Graffiti-Melt", "Seal Krete" or approved equal.

17. Execution:

17.1 General:

All surface preparation, coating and paint application shall conform to applicable standards of the Steel Structures Painting Council and the manufacturer's printed instructions. Material applied prior to approval of the prepared surface by Construction Manager shall be removed and reapplied to the satisfaction of Construction Manager at the expense of Contractor.

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All work shall be performed by skilled craftsmen qualified to perform the required work in a manner comparable with the best standards of practice. Continuity of personnel shall be maintained and transfers of key personnel shall be coordinated with Construction Manager.

Dust, dirt, oil, grease, existing graffiti repair paint or any foreign matter which will affect the adhesion or durability of the finish must be removed by either washing with clean rags dipped in an approved cleaning solvent and wiped dry with clean rags, or by light sanding with the necessary tools.

Contractor's coating and painting equipment shall be designed for application of materials specified and shall be maintained in first class working condition. Compressors shall have suitable traps and filters to remove water and oils from the air. Contractor's equipment shall be subject to approval of Construction Manager or his appointed Inspector.

Application of the first coat shall follow immediately after surface preparation and cleaning within an eight hour working day. Any cleaned areas not receiving first coat within an eight-hour period shall be re-cleaned prior to application of first coat.

17.2 Surface Preparation, General:

The latest revision of the following surface preparation specifications of the Steel Structures Painting Council (SSPC) shall form a part of this specification. (Note: An element of surface area is defined as any given square inch of surface.)

Solvent Cleaning (SSPC-SP1): Removal of oil, grease, soil and other contaminants by use of solvents, emulsions, cleaning compounds, steam cleaning or similar materials and methods, which involve a solvent or cleaning action.

Hand Tool Cleaning (SSPC -SP2): Removal of loose rust, loose mill scale and other detrimental foreign matter present to degree specified by hand chipping, scraping, sanding and wire brushing.

Power Tool Cleaning (SSPC SP3): Removal of loose rust, loose mill scale and other detrimental foreign matter present to degree specified by power wire brushing, power impact tools or power sanders.

Commercial Blast Cleaning (SSPC-SP6): Blast cleaning until at least two-thirds of each element of surface area is free of all visible residue.

Brush-off Blast Cleaning (SSPC-SP7): Blast cleaning to remove loose rust, loose mill scale, and other detrimental foreign matter present to the degree specified.

Near-White Blast Cleaning (SSPC-SP10): Blast cleaning to near-white metal cleanliness, until at least ninety-five percent of each element of surface area is free of all visible residues.

Slag and weld metal accumulation and spatters not previously removed by the Fabricator, Erector or Installer shall be removed by chipping and grinding. All sharp edges shall be preened, ground or otherwise blunted as required by Construction Manager.

Field blast cleaning for all purposes shall be dry method unless otherwise directed. Particle size of abrasives used in blast cleaning shall be that which will produce a 2.0 mil (.002) surface profile or in accordance with recommendations of the manufacturer of the specified coating or paint system to be applied, subject to approval of Construction Manager.

Abrasive used in blast cleaning operations shall be new, washed, graded and free of contaminants which would interfere with adhesion of coatings and paints and shall not be reused unless specifically approved by Construction Manager.

Technical Specifications

During blast cleaning operations, caution shall be exercised to insure existing coatings and paints are not exposed to abrasion from blast cleaning.

Contractor shall keep the area of his work in a clean condition and shall not permit blasting materials to accumulate as to constitute a nuisance or hazard to the prosecution of the work or the operation of the existing facilities. Spent abrasives and other debris shall be totally removed from the site once the project is completed.

Blast cleaned surfaces shall be cleaned prior to application of specified coatings or paints via a combination of blowing with clean dry air, brushing/brooming and/or vacuuming as directed by Construction Manager. Air hose for blowing shall be at least 1/2" in diameter and shall be equipped with a shut-off device.

All welds, when required, shall be neutralized with a suitable chemical compatible with the specified coating or paint materials.

Water blast cleaning (hydro blasting) shall be used as directed by Construction Manager. Pressures shall be those necessary to effectively perform removal of loose, peeling/flaking paint or coating unless directed otherwise as specified in subsection 8 Application, General.

18. Surface Preparation of New Water Storage, Specific:

18.1 ***Interior Surfaces of Water Tank:***

Surfaces shall be abrasively blast cleaned to "Near-White Blast Cleaning" in conformance to Steel Structures Painting Council Surface Preparation Specifications SSPC-SP10.

18.2 ***All Exterior Surfaces of Water Tank, Including Appurtenances:***

Surfaces shall be abrasively blast cleaned to "Commercial Blast Cleaning" in conformance to Steel Structures Painting Council Surface Preparation Specification SSPC-SP6.

18.2.1 Application, General:

Coating and paint application shall conform to the requirements of the Steel Structures Painting Council Paint Application Specification SSPC-PA1, latest revision, for "Shop, Field and Maintenance Painting" and the manufacturer of the coating and paint materials printed literature and as specified herein.

Thinning shall only be permitted as recommended by the manufacturer and approved by Construction Manager.

Each application of coating and paint shall be applied evenly, free of brush marks, sags, runs and no evidence of poor workmanship. Care shall be exercised to avoid lapping on glass or hardware. Coating and paint shall be sharply cut to lines. Finished surfaces shall be free from defects or blemishes.

Protective coverings or drop cloths shall be used to protect floors, fixtures, equipment, prepared surface and applied coatings or paints. Personnel entering reservoir or walking on exterior roof of reservoir shall take precautions to prevent damage or contamination of coated or painted surfaces. Contractor shall prevent coating or paint from being spattered onto or into surfaces which are not to be coated or painted. Surfaces from which such material cannot be removed satisfactorily shall be repainted or re-coated as required to produce a finish satisfactory to Construction Manager.

Technical Specifications

All material shall be applied as specified herein and as per manufacturers instructions.

All welds and irregular surfaces shall receive a brush coat of the specified product sufficient to fill or seal the irregular surfaces prior to application of each complete coat.

19. Application and Quality Control, Cold-Applied Coating System:

19.1 **Interior Surfaces of New Water Tank:**

Surfaces shall receive the epoxy coating system listed below:

Epoxy - after completion of surface preparation as specified, all surfaces shall receive three coats of coating specified in subsection 14 Interior Coating Materials for New Water Tank Construction. Total dry film of the completed system shall be a minimum of 15 mils (.015).

19.2 **Quality Control:**

All coating components shall be mixed in exact proportions specified by the manufacturer. Care shall be exercised to insure all materials are removed from containers during mixing and metering operations.

All coatings shall be thoroughly mixed, utilizing an approved slow-speed power mixer until all components are thoroughly combined and are of a smooth consistency. Coatings shall not be applied beyond pot-life limits specified by manufacturer.

Thinners shall be added to coating materials only as required in accordance with manufacturer's printed literature and in the presence of Construction Manager or his appointed Inspector.

Application shall be by airless spray method except as otherwise specified. Drying time between coats shall be strictly observed as stated in manufacturer's printed instruction.

When two or more coats are specified, each coat shall contain sufficient approved color additive to act as an indicator of coverage or the coats must be of contrasting color.

Care shall be exercised during spray operations to hold the spray nozzle perpendicular and sufficiently close to surfaces being coated to avoid excessive evaporation of volatile constituents and loss of material into the air or the bridging of cracks and crevices. All over spray shall be removed as directed by Construction Manager or his appointed Inspector.

Polyurethane joint sealant may be applied by caulking gun, trowel or other approved method. Sealant shall be pressed firmly into voids to insure 100% filling/sealing.

Upon completion of coating operations, holiday detection shall be performed, using the specified low voltage instrument. Repair and retesting shall be performed as specified in subsection 5 Quality Assurance.

All mixing, thinning, application and holiday detection of coatings shall be performed in the presence of Construction Manager or his appointed Inspector.

20. Painting of Exterior Surfaces of New Water Tank:

After completion of surface preparation as previously specified herein (subsections 17.2 Surface Preparation, General and 18 Surface Preparation of new Water Storage, Specific) all bare metal shall receive an exterior rust inhibitive prime coat, specified under subsection 15

Technical Specifications

Exterior Paint Materials for New Water Tank Construction. Dry film thickness shall be not less than 2 mils.

The primer shall be clean, dry and show no evidence of oxidation, after which all exterior surfaces shall receive and intermediate alkyd coat and silicone alkyd finish coat, specified in subsection 15 Exterior Paint Materials for New Water Tank Construction. Total dry film thickness of the entire three coat exterior paint system shall be not less than 6 mils at any point in the painted surface. A minimum of twenty-four (24) hours time is required before additional coats may be applied to the prime or finish coats or until the previous coat has dried firm.

20.1 **Quality Control:**

All provisions of subsection 5 Quality Assurance shall apply to work performed under this section.

20.2 **Color Scheme:**

The color and gloss of the new tank exterior shall be at the discretion of Carson City. After award of the project, Carson City will provide a current color chart to Contractor for color matching.

Upon completion of painting operations, inspection shall be performed as specified herein.

21. Disinfection:

Disinfection shall be performed after the protective coating has been applied and cured as per the manufacturers instructions. If workers have re-entered the previously disinfected tank to make any necessary repairs or to complete warranty work, disinfection shall be repeated as per these specifications.

Prior to disinfecting, the complete interior shall be cleaned by hosing with clean water and thoroughly flushed out. This operation shall be performed after completion of interior coating work as directed by Construction Manager, and shall be performed in the presence of his appointed Inspector.

Upon completion of cleaning/washing operations, Contractor shall furnish an approved exhaust fan or blower of sufficient capacity to insure removal of solvent vapors during the curing process. The fan or blower shall be installed and shall remain in continuous operation until coating is completely cured as determined by the manufacturer of the coating system. Operation and maintenance of blower during curing operations shall be the responsibility of Contractor.

After completion of curing cycle as noted above, the interior surfaces shall be jet washed with a chlorine solution having a content of 200 P.P.M. Contractor shall request that the chlorine solution be tested and approved by the inspector prior to beginning the disinfection process. All Chlorine solution which accumulates on the bottom of the tank shall be drained to waste by Contractor. Rinsing with clean water is not required. Contractor shall re-seal all hatches then notify Construction Manager so that the tank can then be filled and tested. (Reference AWWA C652-92)

All aspects of the new tank construction shall comply with "Public Water System Design, Construction, Operation and Maintenance" manual, LCB File No. R057-96, effective February 12, 1997

END OF DOCUMENT 5005

Technical Specifications

Document No. 5006 ANCHOR BOLTS AND EXPANSION ANCHORS (12/31/00)

1. Scope:

This section covers cast-in-place anchor bolts and expansion anchors to be installed in hardened concrete.

2. General:

Except where specifically shown or specified otherwise, all anchor bolts shall be carbon steel at least 1/2 inch in diameter and expansion anchors shall be of the type specified herein.

3. Materials:

3.1 Bolts and Nuts:

Carbon Steel: ASTM A307

Stainless Steel: IFI-104, Grade 303 or 305

Galvanized Steel: Carbon steel bolts and nuts; hot-dip galvanized ASTM A153 or zinc plated ASTM A164 Type GS.

3.2 Flat Washers:

ANSI B27.2; of the same material as bolts and nuts.

3.3 Expansion Anchors:

Fed Spec FF-2-325; cinch anchor type, Group I, Type I, Class 2 (3 unit) or Group I, Type 2, Class 2, Style I (3 unit); or self-drilling type, Group III, Type I.

3.4 Anchor Bolts:

Anchor bolts shall be delivered in time to permit setting when structural concrete shall be provided with sufficient threads to permit a nut to be installed on the concrete side of the concrete form or supporting template. Two nuts shall be furnished for each anchor bolt. At least two threads shall extend beyond nut.

3.5 Expansion Anchors:

Expansion anchors shall be of the cinch anchor or self-drilling type. Installation methods shall be in conformity with the manufacturer's recommendations for maximum holding power, but in no case shall the depth of hold be less than four bolt diameters. Minimum distance between the center of any expansion anchor and an edge or exterior corner of concrete shall be not less than four and one half (4-1/2) times the diameter of the hole in which it is installed.

END OF DOCUMENT 5006

Technical Specifications

Document No. 5007 PIPE SUPPORTS (4/7/08)

1. Scope:

This section covers pipe supports. Pipe supports shall be furnished complete with all necessary inserts, bolts, nuts, rods washers, and other accessories.

Fabricated steel supports shall be as shown on the plans, as specified in other sections, or in the absence of such requirements, as approved by Engineer.

All piping shall be rigidly supported and anchored so that there is no movement or visible sagging between supports.

Pipe supports shall be provided with a shop-applied fusion-bonded epoxy coating on interior and exterior surfaces conforming to AWWA C550.

2. Materials:

2.1 Pipe Support:

Adjustable, NPS Industries GBS-030, Grinnell 264, or equal.

END OF DOCUMENT 5007

Technical Specifications

Document No. 6003 PRESSURE GAUGES (12/31/00)

1. General:

Pressure gauges shall be installed in the locations shown on the Plans.

1.1 Materials:

Pressure gauges shall be the direct reading type and shall be furnished with a shut-off cock. The gauges shall be calibrated in one (1) pound per square inch in not more than five (5) pound increments. Unless otherwise specified, the gauge shall range from 0 to 200 psi. The dial shall be not less than four (4) inch in diameter and be glycerine filled. Gauges shall be Ashcroft Brand or approved equal. Gauges shall be furnished with pressure snubbers.

1.2 Installation:

Pressure gauges shall be installed in accordance with the manufacturer's recommendations.

END OF DOCUMENT 6003

Technical Specifications

Document No. 6009 MAGNETIC FLOW METER (3/25/04)

1. General:

This section specifies the requirements for the magnetic flow meter to be used in the locations specified.

2. Materials:

The magnetic flow meter shall be 150 lb. flanged for mounting between AWWA flanges. The magnetic flow meter shall utilize DC bi-polar pulsed coil excitation, automatically re-zeroing after every cycle. Accuracy shall be $\pm 2\%$ of rate over a 33.1 turndown at all flow rates above 1 fps. Accuracy shall be verified by calibration in a flow lab and the results provided to Carson City. Meter shall have polyurethane liner with 316SS electrodes and grounding rings/electrodes. Power supply shall be 117 VAC $\pm 10\%$, 50/60 HZ or as otherwise noted on the plans. The electronic display shall be of the remote design and shall include indication and totalization in both forward and reverse directions where specified. Output shall be isolated 4-20MA made proportional to flow in both forward and reverse direction. Remote flow indicators shall be wall mounted in a NEMA-4X enclosure. Water Meter shall be Foxboro Magnetic Flow Tube, no substitutions.

3. Installation:

Meter shall be installed as per the manufacturer's instructions and located as shown on the plans. All manufacturer information included with the meter shall be provided to Carson City. The meter shall be installed on a dedicated circuit. Verify from the plans whether the meter is to be supplied by Contractor, or by Carson City.

END OF DOCUMENT 6009

Technical Specifications

Document No. 7003 RIPRAP (4/18/08)

1. Scope of Work:

Rock Rip Rap shall be per Section 200.07, Rip Rap, of the Standard Specifications and these Technical Specifications.

2. Quality:

Individual rock fragments shall be dense, sound and free from cracks, seams and other defects conducive to accelerated weathering. The rock fragments shall be angular to subrounded in shape. The least dimension of an individual rock fragment shall be not less than one-third (1/3) the greatest dimension of the fragment.

Except as provided below, the rock shall have the following properties:

Bulk specific gravity (saturated surface-dry basis not less than 2.5.)

Absorption not more than two percent (2%).

Soundness - weight loss in 5 cycles not more than ten percent (10%) when sodium sulfate is used or fifteen percent (15%) when magnesium sulfate is used.

The bulk specific gravity and absorption shall be determined by ASTM method C 127. The test for soundness shall be performed by ASTM method C 88 for course aggregate.

Rock that fails to meet the requirements stated above may be accepted only if similar rock from the same source has been demonstrated to be sound after five (5) years or more of service under conditions of weather, wetting and drying, and erosive forces similar to those anticipated for the rock to be installed under this Technical Specification.

3. Grading:

The rock riprap shall conform to the specified grading limits as shown on the Plans.

END OF DOCUMENT 7003

Technical Specifications

Document No. 7005 CHAIN LINK FENCES (12/31/00)

1. General:

The work to be performed under this section shall be the construction and installation of a 6-foot chain link fence with 3 strands of barbed wire on top. Fence to stand 6 feet above grade. The fence shall be constructed and installed per this specification and as shown on the Plans.

The fence may be erected at any time after the earthwork, pipe work, and structures, to which the fence is related, have been completed. The fence shall be protected against damage and, if damaged, it shall be repaired to the satisfaction of Engineer prior to final acceptance.

2. Materials:

The chain link fence and gates shall be a USS Cyclone-Type I, Anchor Post Products, Inc., or equal. The components shall be as listed and specified below:

Fabric	
Height	6'0"
Mesh	2-inch
Size wire	9-gauge
Coating	Zinc coating
Coating specifications	ASTM A 392 - Class 1
Tensile strength	80,000 psi minimum

Barbed Wire	
Total number strands	3
Wires per strand	2
Size wires	12 gauge
Barbs	14-gauge, 4-point_@ 4 inches o.c.

Coating	
Coating	Galvanized
Coating specifications	ASTM A 121 - Class 3
Style	Angled Outward

Top Rail: 1-5/8-inch O.D. Sch. 40 pipe weighing 2.27 pounds per lineal foot galvanized

Tension Wire: 7-gauge galvanized coil spring wire

Terminal, Corner etc: Terminal, Corner, Angle, and Pull Posts Size - 3-inch O.D. Sch. 40 weighing 5.79 pounds per L.F.

Except where shown differently on the Plans, gate posts shall be as determined by the following schedule:

Technical Specifications

Gate Leaf Width (Feet)	Size OD (Inches)	Weight (lb/LF)
0 to 6	3	5.79
Over 6 to 13	4	9.11
Over 13 to 18	6 5/8	18.75
Over 18	8 5/8	24.70

Gate posts shall have vertical extension arms with 3 strands of barbed wire.

All posts, rails, and appurtenances shall be hot-dipped zinc coated steel per ASTM A 120, A 121, A 123, or A 153, whichever is applicable. Pipe posts shall have tops which exclude moisture. End, corner, and gate posts shall be braced with the same material as top rail and trussed to line posts with 3/8-inch rods and tighteners.

The fabric shall be connected to the line posts with 6-gauge hot-dip galvanized wire clips every 14 inches, to end, corner, and gate posts by using 1/4" x 3/4" stretcher bars tied to posts every 14 inches with 11-gauge, 1-inch wide, hot-dip galvanized steel bands and 3/8 inch diameter bolts and nuts, and to tension wires and top rail with 11-gauge hog rings every 24 inches.

Post top fittings shall have galvanized, 45 degree angle extension arms. Three barbed wire stands shall be carried on each extension arm with the top most wire 12" above the fabric. The top rail shall pass through the extension arm fitting.

A 7-gauge, galvanized coiled, spring tension wire shall be installed along the bottom of the fence fabric and at the top when the top rail is not shown on the Plans.

Swing chain link gates shall be provided where indicated on the Plans. Gate frames shall be made of 2.00-inch O.D. galvanized pipe weighing 2.72 pounds per linear foot. Corner fittings shall be heavy pressed steel or malleable castings.

2. Construction:

2.1 Fence:

Chain link fence shall be located as indicated on the Plans. Finished fence shall be plumb, taut, true to line and grade and complete in all details. End, corner, slope, and gate posts shall be braces used as compression members and the said line posts trussed from the brace back to the bottom of the end, corner, slope, or gate post with 3/8 inch steel truss rods with turnbuckles or other suitable tightening devices used as tension members.

Unless otherwise specified, all fence shall be installed with a top rail and a bottom tension wire. When top rail is omitted, a top and bottom tension wire shall be used.

The fabric shall be placed on the outward facing side of the posts and shall be installed so that the top edge projects over the top rail of the fence. The fabric shall be stretched taut and securely fastened to the posts, the top rail and the bottom tension wire. The tension wire shall be installed parallel to the line of the fabric.

The fence shall follow the general finished grade of the ground and shall have pull posts at all points where required to conform to a change in grade. Space between the bottom of the fence and the finished groundline shall not exceed 3 inches. The ground shall be graded before fence posts are located to permit the grade of the fence to remain constant over any local elevations

Technical Specifications

or depressions in the groundline. The surplus dirt, concrete, etc., shall be cleaned up and the grade dressed up after completion of the work.

Fence posts shall be set in concrete foundations at least 3 feet into the ground and shall be spaced not over 10 feet apart. Concrete shall be a minimum of 10 inches in diameter for line posts and 12 inches in diameter for corners and gates or 3 times the diameter of the post, whichever is greater. Solid rock is to be cored and grouted 2" annulus to 2' depth. Exposed concrete fence post caps shall be finished off in a workmanlike manner. A minimum of 1-inch of concrete shall be above the finished grade and shall be sloped to drain away from the post.

3. Swing Gates:

Except as otherwise shown or specified, all chain link fence gates shall be swing gates.

The corners of gate frames shall be fastened together and reinforced with a fitting designed for the purpose or by welding. All welds shall be ground smooth.

Chain link fence fabric shall be attached to the gate frame by the use of tension bars and tie wires as specified for fence construction, and suitable tension connectors spaced at approximately 16-inch intervals.

Gates shall be provided with a combination steel or malleable iron catch and locking attachment of approved design. Stops to hold gates open and a center rest with catch shall be provided where required.

END OF DOCUMENT 7005

END OF TECHNICAL SPECIFICATIONS

ATTACHMENT A

2010 PREVAILING WAGE RATES
CARSON CITY

DATE OF DETERMINATION: October 1, 2009

APPLICABLE FOR PUBLIC WORKS PROJECTS BID/AWARDED
OCTOBER 1, 2009 THROUGH SEPTEMBER 30, 2010*

*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."

As Amendments/Addenda are made to the wage rates, such will be posted to sites of the respective counties. Please review regularly for any amendments posted or contact our offices directly for further assistance with any amendments to the rates.

AIR BALANCE TECHNICIAN
ALARM INSTALLER
BOILERMAKER
BRICKLAYER
CARPENTER
CEMENT MASON
ELECTRICIAN-COMMUNICATION TECH.
ELECTRICIAN-LINE
ELECTRICIAN-NEON SIGN
ELECTRICIAN-WIREMAN
ELEVATOR CONSTRUCTOR
FENCE ERECTOR
FLAGPERSON
FLOOR COVERER
GLAZIER
HIGHWAY STRIPER
HOD CARRIER-BRICK MASON
HOD CARRIER-PLASTERER TENDER
IRON WORKER
LABORER
MECHANICAL INSULATOR
MILLWRIGHT
OPERATING ENGINEER
OPERATING ENG. STEEL FABRICATOR/ERECTOR
OPERATING ENGINEER-PILEDRIVER
PAINTER

ATTACHMENT A

PILED RIVER (NON-EQUIPMENT)
PLASTERER
PLUMBER/PIPEFITTER
REFRIGERATION
ROOFER (Does not include sheet metal roofs)
SHEET METAL WORKER
SPRINKLER FITTER
SURVEYOR (NON-LICENSED)
TAPER
TILE /TERRAZZO WORKER/MARBLE MASON
TRAFFIC BARRIER ERECTOR
TRUCK DRIVER
WELL DRILLER
LUBRICATION AND SERVICE ENGINEER (MOBILE AND GREASE RACK)
SOIL TESTER (CERTIFIED)
SOILS AND MATERIALS TESTER

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.

CRAFT	RATE
AIR BALANCE TECHNICIAN	ADD SHEET METAL ZONE RATE
Air Balance-Journeyman	46.60
Air Balance-Foreman	49.62
Air Balance-General Foreman	52.64
ALARM INSTALLER	
Alarm Installer-Journeyman	23.63

ATTACHMENT A

BOILERMAKER	
Boilermaker	59.50
 BRICKLAYER ADD ZONE RATE	
Bricklayer-Journeyman	32.68
Bricklayer-Foreman	33.93
Bricklayer-General Foreman	35.68
 CARPENTER ADD ZONE RATE	
Carpenter-Journeyman	38.30
Carpenter-Foreman	41.05
 CEMENT MASON	
Cement Mason-Journeyman	34.40
Cement Mason-Foreman	36.40
 ELECTRICIAN COMMUNICATION TECHNICIAN	
Communication Technician-Installer	25.73
Communication Technician	25.73
Communication-Senior Technician	25.73
 ELECTRICIAN-LINE	
Electrician-Groundman	39.19
Electrician-Lineman	57.91
Electrician-Foreman	63.02
Electrician-General Foreman	68.12
Heavy Equipment Operator	47.86
 ELECTRICIAN-NEON SIGN -	
Electrician-Neon Sign	44.31
 ELECTRICIAN-WIREMAN -	
Wireman	46.39
Cable Splicer	46.39
Wireman-Foreman	46.39
Wireman-General Foreman	46.39
 ELEVATOR CONSTRUCTOR -	
Elevator Constructor-Journeyman Mechanic	46.01
Elevator Constructor-Mechanic in Charge	46.01
 FENCE ERECTOR -	
Fence Erector	37.56
 FLAGPERSON ADD LABORER ZONE RATE	
Flagperson	27.95

ATTACHMENT A

FLOOR COVERER	
Floor Coverer-Journeyman	36.26
Floor Coverer-Foreman	38.90
GLAZIER -	
Glazier	21.25
HIGHWAY STRIPER	
Highway Striper	ADD LABORER ZONE RATE 33.57
HOD CARRIER-BRICK MASON TENDER	
Brick Mason-Journeyman	ADD ZONE RATE 30.10
Brick Maons-Foreman	30.60
HOD CARRIER-PLASTER TENDER	
Plasterer Tender-Journeyman	ADD ZONE RATE 33.76
Plasterer-Gun Tender	34.76
Plasterer Tender-Foreman	35.12
IRON WORKER	
Ironworker-Journeyman	SEE AMENDMENT 1 54.38
Ironworker-Foreman	57.68
Ironworker-General Foreman	61.04
LABORER	
	SEE GROUP CLASSIFICATIONS ADD ZONE RATE
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
MECHANICAL INSULATOR -	
Mechanical Insulator-Mechanic	57.06
Mechanical Insulator-Foreman	59.56
Mechanical Insulator-General Foreman	61.06

ATTACHMENT A

MILLWRIGHT

Millwright 49.70

OPERATING ENGINEER

SEE GROUP CLASSIFICATIONS
ADD ZONE RATE

Group 1	41.33
Group 1A	44.09
Group 2	44.62
Group 3	44.89
Group 4	45.63
Group 5	45.93
Group 6	46.10
Group 7	46.35
Group 8	46.94
Group 9	47.26
Group 10	47.61
Group 10A	47.80
Group 11	48.04
Group 11A	49.68
Group 11B	50.49
Foreman	49.68

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	56.63
Group 1 Truck Crane Oiler	50.46
Group 1 Oiler	48.50
Group 2	55.12
Group 2 Truck Crane Oiler	50.21
Group 2 Oiler	48.29
Group 3	53.88
Group 3 Truck Crane Oiler	49.99
Group 3 Oiler	48.07
Group 3 Hydraulic	49.66
Group 4	52.15
Group 5	51.05

Add 7% to base rate for "Second" Shift -

Add 12.5% to base rate for "Special" Shift

ATTACHMENT A

OPERATING ENGINEER -PILEDRIVER
SEE GROUP CLASSIFICATIONS

ADD ZONE RATE

Group 1	56.10
Group 1 Truck Crane Oiler	50.64
Group 1 Oiler	48.72
Group 2	54.56
Group 2 Truck Crane Oiler	50.43
Group 2 Oiler	48.52
Group 3	53.11
Group 3 Truck Crane Oiler	50.21
Group 3 Oiler	48.29
Group 4	51.60
Group 5	50.49
Group 6	49.38
Group 7	48.42
Group 8	47.46

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

PILEDRIVER

Piledriver-Journeyman	58.47
Piledriver-Foreman	62.05

PLASTERER

ADD ZONE RATE

Plasterer-Journeyman	34.27
Plasterer-Foreman	35.59

PLUMBER/PIPEFITTER -

Plumber-Journeyman	45.20
Plumber-Foreman	48.16
Plumber-General Foreman	51.12

REFRIGERATION

Refrigeration-Journeyman	30.92
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ATTACHMENT A

ROOFER (Does not include sheet metal roofs) - Roofer	18.88
SHEET METAL	WORKER ADD ZONE RATE
Sheet Metal-Journeyman	46.60
Sheet Metal-Foreman	49.62
Sheet Metal-General Foreman	52.64
SPRINKLER FITTER	
Sprinkler Fitter-Journeyman	34.52
Sprinkler Fitter-Foreman	34.52
Sprinkler Fitter-General Foreman	34.52
SURVEYOR	ADD OPERATING ENG. ZONE RATE
Surveyor	44.89
TAPER - Taper	35.49
TILE SETTER/TERRAZZO WORKER/MARBLE MASON-FINISHER	ADD ZONE RATE
Tile, Terrazzo and Marble Finisher	32.48
TILE SETTER/TERRAZZO WORKER/MARBLE MASON	
Tile Setter-Journeyman	25.00
Tile Setter-Foreman	25.00
Tile Setter-General Foreman	25.00
Terrazzo/Marble Mason-Journeyman	25.00
Terrazzo/Marble Mason-Foreman	25.00
Terrazzo/Marble Mason-General Foreman	25.00
TRAFFIC BARRIER ERECTOR	ADD LABORER ZONE RATE
Traffic Barrier Erector	30.82
TRUCK DRIVER	
Truck Driver	21.61
WELL DRILLER	
Well Driller	21.32

ATTACHMENT A

LUBRICATION AND SERVICE
ENGINEER (MOBILE AND GREASE RACK)

ADD OPERATING ENG.
ZONE RATE

Lubrication and Service Engineer
(mobile and grease rack)

46.10

SOIL TESTER (CERTIFIED)
Soil Tester (Certified)

44.64

SOILS AND MATERIALS TESTER
Soils and Materials Tester

44.64

09/21/2009

Job Descriptions for Recognized Classes of Workmen

Regarding job descriptions for public works projects, please take notice of the following:

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."

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.

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.

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.

The following specific provisions, where applicable, shall prevail over any general provisions of the job descriptions:

Amendments to the prevailing wage determinations;

ATTACHMENT A

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.

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:

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;
Installing of wiring and signaling units;
Repairing electrical protective signaling systems
Starting up, programming and documenting systems;

BOILERMAKER, includes but is not limited to:

Constructing, assembling, maintaining and repairing stationary steam boilers and boiler house auxiliaries;
Aligning structures or plate sections to assemble boiler frame tanks or vats;
Assisting in the testing of assembled vessels, directing cleaning of boilers and boiler furnaces;
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:

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;
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
Fastening or fusing brick or other building materials to structures with wire clamps, anchor holes, torches or cement.
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.
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:

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;

ATTACHMENT A

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;

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;

Plywood decking, including, without limitation, stacking and installation of the plywood and the plywood decking;

Cutting, setting, removing of beam sides and soffits, bracing, and pads;

Constructing all wood panel forms and frame wall;

Building, erecting and disassembling self-supporting scaffolds that are more than 14 feet in height;

Laying out, cutting, joining, fitting of Foam Architectural Elements if same are attached mechanically; and

Shaping, cutting and planing by any means if done by hand or machine.

CEMENT MASON, includes but is not limited to:

Smoothing and finishing surfaces of poured concrete floors, walls, sidewalks and curbs to specified textures;

Patching holes with fresh concrete or an epoxy compound;

Molding expansion joints and edges through the use of edging tools, jointers and straightedges;

Setting of curb and gutter forms one board high;

ELECTRONIC COMMUNICATION TECHNICIAN, includes but is not limited to:

Pulling cable, installing and trimming devices, terminating loops, circuits, or other data gathering points;

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;

Utilizing test equipment for the purpose of troubleshooting and verifying the integrity of the circuits in question;

Using hand tools to assemble and install data communication lines and equipment computer systems, antennas and towers;

Disassembling equipment to adjust, repair or replace parts using hand tools;

Starting up, programming and documenting systems;

Measuring, cutting, splicing, connecting, soldering and installing wire and cable associated with communication systems

ELECTRICIAN LINEMAN, includes but is not limited to:

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;

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;

Climbing erected poles or towers and installing equipment such as transformers

ATTACHMENT A

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:

Working under the direct supervision of linemen, including the operation of jackhammers and man hauls;

Loading and unloading of materials and equipment used by electrician lineman.

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:

Installing, servicing and repairing plastic, neon and illuminated signs;

Ascending ladders or operating hydraulic or electric hoist to install, service, or examine sign to determine cause of malfunction;

Wiring, rewiring or removing defective parts and installing new parts using electrician's tools;

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:

Laying out plans, installing, testing and repairing wiring, electrical fixtures, apparatus and control equipment;

Measuring, cutting, bending, threading, assembling and installing electrical conduit by using tools including, without limitation, a hacksaw, pipe threader, or conduit bender;

Pulling wiring through conduit;

Splicing wires;

Connecting wiring to lighting fixtures and power equipment;

Installing control and distribution apparatus, including, without limitation, switches, relays and circuit breakers, and fastening such apparatus into place;

Connecting power cables to equipment, including, without limitation, electric ranges and motors, and installing grounding leads;

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;

As necessary, cutting and welding steel structural members;

ELEVATOR CONSTRUCTOR, includes but is not limited to:

Assembling, installing, repairing and maintaining electric and hydraulic freight and passenger elevators, escalators and dumbwaiters;

Cutting pre-fabricated sections of framework, rails and other elevator components to specified dimensions, using acetylene torch, power saw, and disc grinder;

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:

Erecting or repairing chain link, wooden, tortoise, wire/wire mesh, or temporary fencing;

ATTACHMENT A

Mixing and pouring concrete around bases of posts and tamping soil into post hole to embed post;

Digging post holes with a spade, post hole digger or power driven auger;

Aligning posts through the use of lines or by sighting;

Verifying vertical alignment of posts with a plumb bob or spirit level;

FLAG PERSON, includes but is not limited to:

Directing movement of vehicular traffic through construction projects;

Distributing traffic control signs and markers along site in designated pattern;

Informing drivers of detour routes through construction sites;

FLOOR COVERER, includes but is not limited to:

Applying blocks, strips or sheets of shock-absorbing, sound-deadening or decorative covering to floors and walls, including carpets or rugs;

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;

Spreading adhesive cement over floor to cement foundation material to floor for sound-deadening, and to prevent covering from wearing at the board joints;

Rolling finished floors to smooth the floor and press cement into base and covering;

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:

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;

Installing glass on surfaces, including, without limitation, fronts of buildings, interior walls and ceilings;

Installing pre-assembled framework for windows and doors designed to be fitted with glass panels, including stained glass windows by using hand tools;

Loading and arranging of glass on trucks at the site of the public work;

HIGHWAY STRIPER, includes but is not limited to:

Painting highways, streets and parking surfaces by using manually propelled or mechanically propelled machines, brushes, rollers or spray guns;

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:

Tending to or assisting brick masons, bricklayers and stonemasons;

Mixing, packing, wheeling and tempering mortar and fire clay;

Mixing, supplying and holding materials or tools;

Mixing, handling and conveying all other materials used by brick masons, bricklayers and stone masons;

Building scaffolds, trestles, boxes and swinging staging used exclusively by bricklayers and stone masons;

ATTACHMENT A

Hanging cables and placing putlogs;
Carrying bricks and mortar in a hod;
Cleaning work area and equipment of bricklayers and stone masons

HOD CARRIER-PLASTERER TENDER, includes but is not limited to:

Serving Plasterers in any capacity;
Handling materials after the materials are delivered as used by a Plasterer;
Building and handling all necessary trestle, scaffolding and planking of scaffolding for the exclusive use of Plasterers;
Building mortar boxes, mortar boards and stands.

IRONWORKER, includes but is not limited to:

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;
Setting up hoisting equipment for raising and placing structural steel members;
Fastening steel members to cable of hoist, using chains, cable or rope;
Forcing steel members into final position using turnbuckles, crowbars, jacks, hand tools;
Aligning rivet holes in steel members with corresponding holes in previously placed steel members by driving drift pins to handle of wrench through holes;
Bolting aligned steel members to keep them in position until the steel members can be permanently riveted, bolted or welded into place;
Cutting and welding steel members;
Installing and repairing gates, iron doors, flagpoles, iron fences and roof decking;
Installing corrugated sheets when attached to steel frames;
Stud welding of all iron, steel and metal to structural steel;
Handling and setting of steel and metal joists;
Loading, unloading, hoisting, handling, signaling, placing and erecting of pre-stressed and pre-cast materials;
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:

Cutting, tooling, and setting marble slabs in floors and walls of buildings and renovating and polishing marble slabs previously set in buildings;
Trimming, facing and cutting marble to a specific size using a power saw, cutting and facing equipment, and hand tools
Drilling holes in marble slabs and attaching brackets;

ATTACHMENT A

Spreading mortar on the bottom and sides of a marble slab and on the side of adjacent marble slabs;
Setting blocks in positions, tamping a marble slab into place and anchoring bracket attachments with wire;
Filling joints between marble slabs with grout and removing excess grout with a sponge;
Cleaning and beveling cracks and chips on marble slabs using hand tools and power tools;
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
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:

Covering and lining structures with cork, canvas, tar paper, magnesia and related materials;
Installing blown-on insulation on pipe and machinery;
Lining of mechanical room surfaces and air handling shafts;
Filling and damming of fire stops and penetrations including, but not limited to, electrical and mechanical systems;
Foam applications for the purpose of thermal, acoustical, or fire protective purposes, including RTV foams or equivalents, applied to mechanical or electrical systems;
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;
Insulation of field joints on pre-insulated underground piping and the pouring of Gilsilite or its equivalent;
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:

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;
Dismantling machines by using hammers, wrenches, crowbars and other hand tools;
Assembling and installing equipment, including, without limitation, shafting, conveyors, monorails and tram rails, by using hand tools and power tools;
Constructing foundations for machines by using hand tools and building materials, including, without limitation, wood, cement and steel;
Assembling machines and bolting, welding, riveting or otherwise fastening them to a foundation or other structure by using hand tools and power tools; and
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.

ATTACHMENT A

PAINTER, includes but is not limited to:

All painting of walls, equipment, buildings, bridges and other structural surfaces by using brushes, rollers and spray guns;
Application of wall coverings/wall paper;
Removing old paint to prepare surfaces before painting the surface;
Mixing colors or oils to obtain desired color or consistency;
Sanding surfaces between coats and polishing final coat to a specified finish;
Cutting stencils and brushing and spraying lettering and decorations on surfaces;
Washing and treating surfaces with oil, turpentine, mildew remover or other preparations;
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:

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;
Barking, shoeing, splicing, form building, heading, centering, placing, driving, staying, framing, fastening, automatic pile threading, pulling and/or cutting off of piling;
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:
Cutting, threading and hammering pipe to specifications using tools, including, without limitation, saws, cutting torches and pipe threaders and benders;
Attaching pipes to walls, structures and fixtures, including without limitation, radiators or tanks, using brackets, clamps, tools, or welding equipment;
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:

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;
Creating decorative textures in finish coat by using sand, pebbles or stones;
Installing guide wires on exterior surfaces of buildings to indicate thickness of plaster or stucco;
Applying weatherproof, decorative covering to exterior surfaces of a building;
Molding and installing ornamental plaster pieces, panels and trim;
Directing workers to mix plaster to a desired consistency;
Assembly of EFIS panels;
Laying out, cutting, joining, fitting and installation of Architectural Foam Elements which are trowel applied or adhesive set;
Applying, shaping, cutting, and planing in preparation for netting done by hand or machine;
All plaster or synthetic finishes applied to Foam Architectural Elements

ATTACHMENT A

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:

Repairing and maintaining plumbing by replacing defective washers, repairing or mending broken pipes, and opening clogged drains;

Assembling pipe sections, tubing and fittings by using screws, bolts, solder, plastic solvent and caulking;

Installing pipe assemblies, fittings, valves and fixtures, including, without limitation, sinks, toilets and tubs, by using hand tools and power tools;

Cutting openings in structures, excluding concrete, to accommodate pipe and pipe fittings by using hand tools and power tools;

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:

Installing and repairing industrial and commercial refrigeration systems;

Mounting compressors, condensers and other refrigeration components to the frame of a refrigerator by using hand tools and acetylene welding equipment;

Assembling structural and functional components needed for refrigeration, including, without limitation, controls, switches, gauges, wiring harnesses, valves, pumps, compressors, condensers, cores and pipes;

Installing expansion and control valves by using hand tools and acetylene welding equipment;

Cutting, bending, threading and connecting pipe from functional components to water, power or refrigeration systems;

Fabricating and assembling components and structural portions of a refrigeration system;

ROOFER, includes but is not limited to:

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;

Spraying roofs, sidings and walls with material to bind, seal, insulate or soundproof sections of a structure;

Installation of all plastic, slate, slag, gravel, asphalt and composition roofing, and rock asphalt mastic when used for damp and waterproofing;

Installation of all damp resisting preparations when applied on roofs with mop, three-knot brush, roller, swab or spray system;

All types of preformed panels used in waterproofing;

Handling, hoisting and storing of all roofing, damp and waterproofing materials;

The tear-off and/or removal of roofing and roofing materials;

SHEET METAL WORKER, includes but is not limited to:

Fabricating, assembling, dismantling, installing or repairing:

Sheet metal roofs, including #30 felt roofing paper installed to form a metal roofing system;

Sheet metal parts or equipment, including, without limitation, duct work, metal lockers and kitchen equipment;

Air-veyor and air-handling systems, regardless of materials used;

Setting up and operating fabrication machines to cut, bend and straighten sheet metal;

ATTACHMENT A

Shaping metal over anvils, blocks or forms using a hammer;
Operating soldering and welding equipment to join sheet metal parts;
Inspecting, assembling and smoothing seams and joints of burred surfaces;
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:

Planning ground surveys designed to establish base lines, elevation and other geodetic measurements;

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;

Surveying bodies of water to determine navigable channels and to secure data for construction of breakwaters, piers and other marine structures;

Computing data necessary for driving and connecting underground passages, underground storage and volume of underground deposits.

TAPER, includes but is not limited to:

Sealing joints between plasterboard or other wallboards to prepare a wall surface for painting or papering;

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;

Filling cracks and holes in walls and ceilings with sealing compound ;

Applying texturing compound and primer to walls and ceiling to prepare a surface for a final finish by using brushes, rollers and spray guns;

Coating of joint compound or taping mud;

TERRAZZO WORKER, includes but is not limited to:

Applying cement, sand, pigment and marble chips to floors and stairways to attain durable and decorative surfacing according to specifications or drawings;

Spreading mixtures of sand, cement and water over surface with a trowel to form terrazzo;

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;

Spreading mixtures of marble chips, cement, pigment and water over a terrazzo base to form a finished surface by using a float and trowel;

Pre-casting terrazzo blocks in wooden forms

ATTACHMENT A

TILE SETTER, includes but is not limited to:

Applying tile and materials made for tile in tile-like units to walls, floors, ceilings and promenade roof decks following design specification;

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;

Applying and floating all setting beds into which glazed, unglazed, mosaic, or other ceramic tiles are set;

Leveling and plumbing tiles to a specified grade

TILE, TERRAZZO AND MARBLE FINISHER, includes but is not limited to:

Supplying and mixing construction materials for a tile setter, terrazzo worker or marble setter;

Applying grout and finishing the surface of installed tile, terrazzo and marble;

Cleaning installed tile, terrazzo and tile surfaces;

Renovation and filling chipped, cracked and broken pieces of tile, terrazzo and marble;

Grinding and polishing tile, terrazzo and marble;

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:

Setting, operating or tending to portable drilling rig machinery and related equipment to drill wells;

Extending stabilizing jackscrews to support and level a drilling rig;

Installing water well pumps;

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

ATTACHMENT A

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 Group 3
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)

ATTACHMENT A

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

ATTACHMENT A

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

ATTACHMENT A

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

ATTACHMENT A

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)

ATTACHMENT A

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)

ATTACHMENT A

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

ATTACHMENT A

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

ATTACHMENT A

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

ATTACHMENT A

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 Teamster 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 A

AMENDMENT 1

CLASSIFICATION:	IRONWORKER
COUNTY:	CARSON, CHURCHILL, CLARK, DOUGLAS, ELKO, ESMERALDA, EUREKA, HUMBOLDT, LANDER, LINCOLN, LYON, MINERAL, NYE, PERSHING, STOREY, WASHOE AND WHITE PINE
EFFECTIVE DATE:	JANUARY 25, 2010

THE FOLLOWING REPRESENTS THE AMENDED WAGE RATES

IRONWORKER	
IRONWORKER-JOURNEYMAN	56.74
IRONWORKER-FOREMAN	60.04
IRONWORKER-GENERAL FOREMAN	63.40

DAVIS BACON WAGE RATES ATTACHMENT B

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GENERAL DECISION: NV20100023 03/12/2010 NV23

Date: March 12, 2010

General Decision Number: NV20100023 03/12/2010

Superseded General Decision Number: NV20080023

State: Nevada

Construction Type: Heavy

County: Carson City County in Nevada.

HEAVY CONSTRUCTION PROJECTS (including sewer/water construction).

Modification Number	Publication Date
0	03/12/2010

CARP0971-007 07/01/2009

	Rates	Fringes
CARPENTER		
Including Form Work.....	\$ 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.

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.

* ELEC0401-001 12/01/2009

	Rates	Fringes
ELECTRICIAN.....	\$ 35.40	13.02+3%

ENGI 0003-030 07/01/2009

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
(02) Bulldozer.....	\$ 28.47	16.02
(03) Skid Loader/Bobcat, Excavator.....	\$ 28.74	16.02
(06) Roller.....	\$ 29.95	16.02
(08) Loader up to and including 2-1/2 cu. yds. and Scraper.....	\$ 30.79	16.02
(09) Mechanic and Backhoe Loader Combo.....	\$ 31.11	16.02

DAVIS BACON WAGE RATES ATTACHMENT B

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(10) Loader over 2-1/2 cu. yds. up to and including 4 cu. yds), Grader/Blade.....	\$ 31.46	16.02
(11) Backhoe, Loader over 4 cu. yds. up to and including 12 cu. yds., Trackhoe.....	\$ 31.89	16.02
(11a) Loader over 12 cu. yds.....	\$ 33.53	16.02

ZONE PAY:

Zone 1: All work within 50 road miles of Carson City Courthouse of Washoe County Courthouse shall be considered a Free Zone.

Zone 2: All work 50 to 150 road miles from Washoe County Courthouse shall receive \$2.00 additional per hour.

Zone 3: All work 150 to 300 road miles from Washoe County Courthouse shall receive \$3.00 additional per hour.

Zone 4: All work over 300 road miles from Washoe County Courthouse shall receive \$4.00 additional per hour.

IRON0118-004 07/01/2009

	Rates	Fringes
IRONWORKER: Reinforcing and Structural.....	\$ 33.00	23.71

LAB00169-017 10/01/2006

	Rates	Fringes
LABORER		
(1) Common or General.....	\$ 21.25	6.87
(1A) Flagger.....	\$ 18.38	6.87
(3) Form Stripping, Mason Tender - Cement/Concrete and Piplayer.....	\$ 21.50	6.87

PAI N0567-012 07/01/2007

	Rates	Fringes
PAINTER.....	\$ 23.44	7.80

PLAS0797-003 10/01/2007

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 20.82	11.43

SUNV2007-028 09/19/2007

	Rates	Fringes
LABORER: Concrete Saw.....	\$ 23.92	0.00
LABORER: Landscape.....	\$ 18.51	0.00

DAVIS BACON WAGE RATES ATTACHMENT B

OPERATOR: Crane.....	\$ 29.21 ^{getdoc}	10.42
TRUCK DRIVER: Dump Truck.....	\$ 19.49	5.00
TRUCK DRIVER: Flatbed Truck.....	\$ 19.49	3.95

TEAM0533-005 12/01/2007

	Rates	Fringes
TRUCK DRIVER: Water Truck		
2,500 gallons & over.....	\$ 22.26	11.94
Up to 2,500 gallons.....	\$ 22.24	11.94

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.

ZONE 2: All work 50 to 150 road miles from the Washoe County Courthouse shall receive \$2.00 additional per hour.

ZONE 3: All work 150 to 300 road miles from the Washoe County Courthouse shall receive \$3.00 additional per hour.

ZONE 4: Any work performed more than 300 road miles from the Washoe County Courthouse shall receive \$4.00 additional per hour.

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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)).

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.

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

DAVIS BACON WAGE RATES ATTACHMENT B

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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
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

Page 4

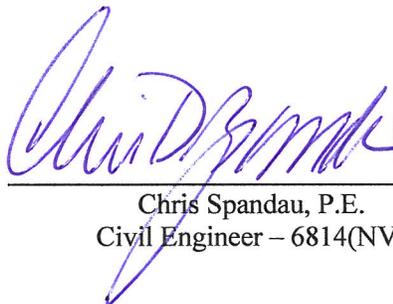
Geotechnical Investigation
for
Prison Hill Water Tank #2
Carson City, Nevada

Prepared for:

Carson City Public Works Department
3505 Butti Way
Carson City, Nevada 89701

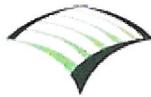
Project No. 8059.018

September 11, 2009


Chris Spandau, P.E.
Civil Engineer - 6814(NV)


9/11/09

Prepared By:



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Distribution

EXECUTIVE SUMMARY

The following paragraphs summarize some of the findings and recommendations of our geotechnical investigation for the proposed Prison Hill Water Tank #2. This tank will be constructed adjacent and just south of the existing Prison Hill Water Tank #1 in the southeastern portion of Carson City. This summary should be read in conjunction with the attached report.

General: Based on the results of our investigation, the site appears suitable for support of the proposed steel reservoir tank from a geotechnical perspective, provided the recommendations presented in this report are incorporated into design and construction.

Soil: From review of the *New Empire Quadrangle Geologic Map* (Bingler, 1977), the site is underlain by a metavolcanic andesitic breccia. This material is highly fractured and breaks out as an angular gravel and cobble mix. The bedrock is overlain by shallow topsoil containing abundant cobbles.

The site soils encountered during our field investigation were in general agreement with the regional geologic mapping. During our investigation, we encountered topsoil deposits consisting of surface and near surface silty gravels and clayey gravels over shallow bedrock. Subsurface conditions are presented in more detail on the test pit logs (Figures 5 through 10).

Groundwater: Groundwater was not encountered during our field investigation. Groundwater is not anticipated to interfere or intercept the proposed construction.

Site Earthwork: We understand the tank will be founded entirely within cut material. Cuts within the tank footprint will range from 1 to 13 feet. The majority of the tank will be underlain by fractured metavolcanic rock. This material is expected to be relatively rippable though resistant hard rock zones may be encountered.

Cut slopes will expose highly fractured rock materials. Rock fall potential is expected to be moderate. We suggest creating a catchment area along the base of the cut slopes to collect rock fragments in an area away from the water tank.

Shallow Foundations: The tank will generally be underlain by metavolcanic rock. Highly weathered bedrock and rocky soils may be present along the areas of shallowest cut. The tank pad should be observed during earthwork to verify that all of the weaker materials have been removed by the site grading.

The proposed tank may be supported on a reinforced concrete ring foundation. The exterior foundation should have a minimum embedment of 24 inches below lowest adjacent grade. The top of the foundations should be a minimum of 6 inches above finished grade.

The ring foundation may be designed for an allowable bearing pressure of 5,000 psf. This applies to dead loads plus frequently applied live loads and may be increased by up to one-third for the inclusion of wind or seismic forces.

Seismic Design: Seismic design forces should be determined using Section 13 of the *AWWA Standard, Welded Carbon Steel Tanks for Water Storage* (AWWA, 2006). Design parameters are listed below. The AWWA seismic design parameters listed below are equivalent to ASCE 7-05 as specified in Section 1622 of the 2006 IBC.

Site Class: C (Very dense soil and soft rock; shear wave velocity $1,200 < v_s \leq 2,500$ feet/second) (Table 25, AWWA D100-05)

S_s : 1.58g (mapped maximum earthquake spectral response, 5 percent damped, at 0.2-sec period for Site Class B) (Figure 7, AWWA D100-05)

S_1 : 0.60g (mapped maximum earthquake spectral response, 5 percent damped, at 1-sec period for Site Class B) (Figure 8, AWWA D100-05)

Flat Tank Bottom: The tank bottom will be constructed with ground supported, welded steel plates. An aggregate cushion should be provided under the tank bottom and comply with the specifications provided in Section 4.2

Leak detection/drainage of the inside of the ring wall should be provided. Recommendations for a perforated subdrain or a ring footing weep hole system to collect and dispose of any subsurface water are provided in Section 4.3.

Corrosion Testing: The results of the corrosion testing on soil samples from test pits TP-1 and TP-A are presented in Table 3.

Testing was performed to provide sufficient information for Carson City to assess the corrosion potential per AWWA C105.

Resistivity: 8,200 to 20,000 ohm-cm
pH: 6.55 to 7.02
Chlorides: <15 ppm
Sulfates: <15 ppm

We recommend that similar testing be performed on any proposed import soils prior to site grading.

1.0 INTRODUCTION

This report presents Wood Rodgers, Inc.'s (Wood Rodgers) geotechnical investigation for the proposed Prison Hill II Water Tank #2 to be constructed in Carson City, Nevada. The project site is located at the eastern end of Koontz Lane adjacent to the existing Prison Hill water tank #1. The general project location is provided on the Vicinity Map (Figure 1)

Wood Rodgers understands the project will include the construction of a single 3-million gallon water storage tank. The tank will be of welded steel construction with an inside diameter of 133 feet and supported on a concrete ring foundation. Inlet/outlet, tank drain, and overflow pipes will be constructed with welded and bolted steel piping.

The project site will be excavated into the existing hillside area. The tank itself will be founded within 1 to 13 feet of cut. Soils generated from the excavation will be used to create an access road and an earthen berm downslope and west of the tank.

Wood Rodgers provided the following scope of services.

- Marked our explorations per Underground Services Alert (USA) requirements and notified them of our intent to excavate the site.
- Excavated, logged, and sampled six test pits. The test pits were excavated to depths of 3.8 to 11 feet below existing grade.
- Performed laboratory testing that included particle size analysis, Atterberg limits (plasticity), and chemical tests (pH, chlorides, sulfates and resistivity).
- Prepared conclusions and recommendations addressing site preparation, earthwork, fill and compaction specifications, spread footing design criteria, lateral earth pressures, and seismic design soil parameters per *AWWA Standard, Welded*

Steel Tanks for Water Storage (AWWA, 2006).

- Prepared this report that summarizing field observations, subsurface soil conditions, and laboratory test results. This report also includes a vicinity map, site plan with approximate test pit locations, test pit logs, and the above conclusions and recommendations.

This report was prepared for the sole use of the City of Carson City, the only intended beneficiary of Wood Rodgers' work. No other party should rely on the information contained herein without prior written consent from Wood Rodgers and the City.

2.0 FIELD EXPLORATION AND LABORATORY TESTING

(WET Labs) and analyzed for pH, chlorides, sulfate and resistivity. Results of corrosivity testing are presented in Table 3 at the end of this report.

2.1 Field Exploration

Wood Rodgers investigated subsurface materials by excavating six test pits (TP-1 through TP-3 and TP-A through C). The exploration program consisted of three primary and three secondary test pit locations. We were able to excavate all of the test pits within the allotted time constraints. The test pits were excavated on June 24, 2009.

Test pits were excavated using a Volvo EC290B trackhoe provided by the City. The test pits were excavated to depths of 3.8 to 11 feet below existing grade. All six of the test pits met practical refusal in hard bedrock materials. Approximate test pit locations are presented on Figure 4.

During field activities, our geologic technician logged the soil conditions exposed in the test pits and borings. The test pit logs are presented on Figures 5 through 10.

Soil samples were collected as grab samples in the test pits. Rocky conditions prevented us from performing in-place density testing.

At the completion of logging and sampling, the test pits were loosely backfilled with excavated material using the equipment at hand. NOTE: Test pits should be overexcavated and the spoils recompacted, prior to the construction of future improvements.

2.2 Laboratory Testing

Soil and rock samples were delivered to the Wood Rodgers material testing laboratory for further examination and select laboratory testing. Laboratory testing included particle size analysis and Atterberg limits (plasticity). Results of laboratory testing are presented in the Appendix A

In addition, two soil samples were delivered to Western Environmental Testing Laboratories

3.0 SURFACE, SUBSURFACE CONDITIONS, AND FAULTING

3.1 Surface Conditions

The tank site is located just south and adjacent to the existing Prison Hill water tank #1. An unimproved portion of Koontz Lane extends eastward to the site from Edmonds Drive. The ground surface at the site slopes moderately downward to the west with a total relief of approximately 35 feet. Vegetation consists of a sparse cover of annual grasses, weeds and sage brush. Rock outcrops are located to the southeast and east of the site.

3.2 Subsurface Conditions

The tank site is located within an area mapped on the *New Empire Quadrangle Geologic Map* (Bingler, 1977) as: **Metavolcanic Breccia (Jb)** – Gray to greenish-gray and greenish-black very poorly sorted coarse andesitic mud-flow breccia. A breccia is a sheared and broken bedrock material which is recemented or reformed back into a solid rock mass by metamorphosis. Breccia are by their nature highly fractured.

The site materials encountered during our field investigation were in general agreement with the geologic map. During our investigation, we encountered metavolcanic bedrock at depths ranging from 0.5 to 5.5 feet. The overlying topsoil was noted to be one foot thick or less in all of the test pits with the exception of TP-C which was excavated adjacent to the existing access road. This deeper material may represent fill materials associated with the past tank construction.

Topsoils generally consisted of silty gravels with abundant angular cobbles up to 6 inches in greatest dimension. The underlying bedrock material consisted of highly fractured metavolcanic rock. The bedrock broke out of the excavations as a slightly silty to silty gravel. Fines contents for material excavated from the rock ranged from 11 to 26%. Atterberg Limit testing indicated that these fines are non-plastic. We did note some clay minerals were locally

present along some of the rock fractures. However, the clays do not appear to significantly affect the engineering characteristics of the rock materials. The metavolcanic rock becomes increasingly hard with depth. All of the test pits met refusal at depths ranging from 5.5 to 11 feet. Extensively fractured bedrock was present in all of the pits. However, we cannot rule out the presence of hard, resistant zones existing at depth.

Subsurface conditions are presented in more detail on the test pit logs (Figures 5 through 10). Soil samples were classified in accordance with the Unified Soil Classification System (ASTM D2487-00) presented on Figure 11.

Groundwater was not encountered during our field investigation.

3.3 Faulting

The Nevada Bureau of Mines and Geology have mapped a potentially active fault in close proximity of the tank site. This mapping is shown on the Earthquake Hazards Map (Figure 3). The fault is believed to have experienced movement between 10,000 and 35,000 years ago. No active faults (movement within the last 10,000 years) have been previously mapped crossing the project site.

The potentially active fault is mapped as forming a contact between the metavolcanic rock and deeper pediment soils. We did not observe any pediment soils within our test pits. This infers that the fault boundary is located west and downslope of the site. Due to the inferred location and age of the mapped fault, no mitigation measures, such as construction offsets are required.

4.0 CONCLUSIONS AND RECOMMENDATIONS

4.1 Site Grading

4.1.1 Site Preparation

Prior to site grading, the tank site should be stripped of the existing surface vegetation, underlying roots, and organics. The estimated depth of stripping is approximately 2 to 4 inches. Deeper stripping/grubbing of old fill soils, roots, etc., may be required in localized areas. The stripped organic soil is unsuitable for reuse as backfill material and should be limited to landscaping or areas outside of future improvements.

Excavation within the tank footprint will encounter highly fractured metavolcanic rock. This material is expected to be rippable with heavy, single shank equipment. However, hard resistant layers and zones may be encountered at depth and at locations between our test pits. The contractor should verify that his equipment, means and methods are suitable to accomplish the required earthwork.

Cut slopes up to 17 feet high will be created. These slopes are expected to be grossly stable at inclinations up to 1.5:1.0. However, the fractured nature of the exposed rock will present a rock fall risk to the tank and any personnel working in the area. We suggest that a horizontal setback or catchment area be created at the base of the cut slope. This catchment will serve as a “landing zone” to capture any rock fragments which may become dislodged from the slope face. Regular collection and disposal of accumulated rock debris should be expected.

4.1.2 Structural Fill Criteria

The tank site proper will be founded entirely within cut. Structural fill soils will be placed along the access road where waterlines will be supported. Soils used as structural fill should meet the requirements for Class E backfill as outlined in Section 200.03.06 of the *Standard Specifications for Public Works Construction* (2007). The materials should be non-expansive, well-graded soil and be free of organics, other

perishable material and construction debris. In addition, they should meet the following criteria.

<u>Sieve Size</u>	<u>Percent Passing (by dry weight)</u>
4”	100
¾”	70-100
No. 40	15-65
No. 200	5-25
Max. LL	Max. PI
35	12

We believe that the majority of the excavated materials will meet the above specifications with the exception of possible oversize rock fragments. Oversize material should be screened prior to placing structural fill materials. We suggest identifying a disposal area for rocky fill materials such as the earthen berm located downslope of the tank.

4.1.3 Fill Placement

Before structural fill is placed, exposed soil surfaces should be scarified to a minimum depth of 8 inches, moisture conditioned to optimum moisture content or above, and recompacted to at least 90 percent relative compaction¹.

Structural fill should be placed in lifts not exceeding 8 inches (loose thickness). The materials should be moisture conditioned to above optimum and compacted to at least 90 percent relative compaction. Structural fill (top surface) should extend laterally a minimum of 5 feet beyond site improvements. Drying of the compacted soils should be avoided. Moisture contents should be maintained until at least additional fill is placed or project improvements are completed. Compaction of fill should be accomplished under continuous engineering inspection and testing.

¹ Relative compaction refers to the in-place dry density of soil expressed as a percentage of the maximum dry density of the same material as determined by the ASTM D1557-00 laboratory test procedure. Optimum moisture content is the moisture content corresponding to the maximum dry density.

Test pits excavated for this investigation were loosely backfilled. Where test pits fall within structural improvements (e.g. foundations, slab-on-grade, roadways, etc.), the Contractor should overexcavate and recompact the material to at least 90 percent relative compaction. Failure to properly compact the test pit backfill may result in excessive settlement of improvements.

During fill placement, the work surface should be graded to direct runoff away from engineered select fill areas to prevent saturation of the exposed surface of fill material during a precipitation event. The Contractor should also provide positive drainage away from all excavations.

No frozen fill should be placed and no fill should be placed on frozen ground, upon standing water, or on yielding soil.

4.2 Aggregate Cushion

The tank bottom will be constructed with ground supported, welded steel plates. An aggregate cushion should be provided under the tank bottom in accordance with the AWWA design standards. The cushion should be a minimum of 6 inches thick, possess very high hydraulic conductivity, have resistivity of greater than 3,000 ohm-cm when saturated (with distilled or deionized water), and comply with the specifications for a Class B backfill per Section 200.03.03 of the *Standard Specifications for Public Works* (2007). The cushion should be moisture conditioned to within 2 percent of optimum and compacted to at least 95 percent relative compaction.

4.3 Leak Detection

Leak detection/drainage along the inside of the ring wall should be provided. We recommend a perforated subdrain be provided beneath the tank bottom. Weep holes penetrating the ring foundation may be used as an alternate. If the weep hole is selected, care should be taken that the aggregate cushion material exhibits a very high permeability value. The Class B backfill specification listed in Section 4.2 should meet

this requirement. For the subdrain option, the perforated pipe should be a minimum of 4-inches in diameter, and placed on approximately 50-foot centers beneath the tank. Subdrains should daylight or drain a minimum of 10 feet beyond the tank exterior foundation.

The subdrain should be surrounded by a minimum of 6 inches of drain rock on each side, wrapped in a filter fabric. Drain rock should comply with the specifications for Class B backfill per Section 200.03.3 of the *Standard Specifications for Public Works* (2007). Filter fabric should be a Mirafi 160N or an approved equivalent.

4.4 Temporary Excavations

The need for large excavation equipment should be anticipated for the construction of underground utilities extending into the native soils. Trenches will need to be opened up to removed over sized materials.

Trench excavations should comply with current OSHA safety requirements (Federal Register 29 CFR, Part 1926) for Type B soil. The Contractor is responsible for site safety. The Contractor should evaluate the stability of site excavations, prior to occupation by construction personnel.

Heavy construction equipment, building materials, excavated soil, and vehicular traffic should not be allowed within a distance of one-third the slope height from the top of any excavation.

Backfills for trenches or other excavations should be compacted in approximately 8-inch layers with mechanical tampers. Jetting and flooding should not be permitted. We recommend backfill be compacted to a minimum of 90% relative compaction within narrow trenches (less than 24 inches wide). Backfill within wider trenches should be compacted to 95%. The moisture content of compacted backfill soils should be within 2% of optimum moisture. (Poor compaction in utility trench backfill will likely cause excessive

settlements resulting in damage to overlying improvements.)

4.5 Foundations

The proposed tank may be supported on a reinforced concrete ring foundation, founded in undisturbed metavolcanic rock materials. The exterior foundation should have a minimum embedment of 24 inches below lowest adjacent grade. The top of the foundations should be a minimum of 6 inches above finished grade.

The bottom of foundation excavations should be inspected by the Geotechnical Engineer to verify that the foundations fully penetrate into firm bedrock materials. If topsoils or disturbed rock is present, this material should be moisture conditioned to near optimum moisture content in the upper 8-inches and then be compacted to a minimum of 95 percent relative compaction.

Spread foundations founded as described above may be designed for a maximum allowable soil bearing pressure of 5,000 pounds per square foot (psf) for dead plus live loads including snow loads. This value may be increased one-third for total loads including wind and seismic loads.

Spread footings designed as described above are estimated to have total settlement of less than 1-inch and differential settlement of less than 1/2-inch along any 15 foot section of ring foundation.

Resistance to lateral loads for footings can be obtained from a combination of passive earth pressures acting against the sides of the footing and soil friction at the base of the footing. Wood Rodgers recommends a passive pressure of 350 psf/foot of depth. Passive resistance should be neglected in the upper two feet unless confined by slab or pavement. For computing base friction, Wood Rodgers recommends using a friction coefficient of 0.45. The coefficient of friction should be applied to vertical dead loads only.

4.6 Retaining Walls

Lateral earth pressures will be imposed on subterranean structures (e.g. foundations, retaining walls, etc.). Table 1 presents a list of soil parameters, which we recommend for design of these structures assuming a level backfill. The uppermost two feet of the backfill should not be used for calculation of passive soil resistance unless it is protected by a permanent surface covering (pavement, slab, etc.).

TABLE 1

Earth Pressure	Equivalent Fluid Density (pcf)
Active	35
At-rest	50
Passive	350
Friction Coefficient	0.40

Recommended minimum factors of safety against sliding, overturning, and bearing failure are listed in Table 2, below.

TABLE 2

Factor of safety against sliding	1.5
Factor of safety against overturning	2
Factor of safety against bearing failure	3

The at-rest case is applicable for braced walls where rotational movement is confined to less than 0.001H. If greater movement is possible, the active case applies. These values are for horizontal backfill and do not include hydrostatic pressures that might be caused by groundwater or surface water trapped behind a structure. Where backfill is placed against structures, we recommend that non-expansive, free-draining materials meeting filter criteria be used in the zone immediately adjacent to the structure to reduce hydrostatic forces. Alternately, the use of pre-manufactured drainage panels should be considered. Furthermore, adequate drainage of the backfill in the form of subdrains and/or weepholes should be provided at the base of the any retaining walls.

This backfill should be moisture conditioned to above optimum and compacted to at least 90 percent relative compaction where minor structural loads are to be supported. The relative compaction should be increased to 95% if the backfill will support the ring foundation or surface loaded tank base plate.. Care should be taken that compaction equipment is appropriate to achieve the required density without overstressing the wall sections. Heavy compaction equipment or other loads should not be allowed in close proximity to the wall unless planned for in the structural design. Hand tamping may be required immediately adjacent to the wall stem.

4.7 Seismic Design

Seismic design forces should be determined using Section 13 of the *AWWA Standard, Welded Carbon Steel Tanks for Water Storage* (AWWA, 2006). The AWWA seismic design parameters listed below are equivalent to ASCE 7-05 as specified in Section 1622 of the 2006 IBC. Specific seismic design criteria is presented below.

Site Class: C (Very dense soil and soft rock; shear wave velocity $1,200 < v_s \leq 2,500$ feet/second) (Table 25, AWWA D100-05)

S_s: 1.58g (mapped maximum earthquake spectral response, 5 percent damped, at 0.2-sec period for Site Class B) (Figure 7, AWWA D100-05)

S_i: 0.60g (mapped maximum earthquake spectral response, 5 percent damped, at 1-sec period for Site Class B) (Figure 8, AWWA D100-05)

The Site Class is based on the dense soil/soft rock classification. The Site Class may qualify as Site Class B based on our visual observations. However, AWWA does not allow the use of the Site Class B designation in fractured bedrock unless detailed geophysical testing is undertaken.

4.8 Site Concrete

Any exterior concrete slabs should be supported by a minimum of 4 inches of crushed aggregate base (AB). AB should comply with specifications for Type II, Class B per Section 200.01.03 of the *Standard Specifications for Public Works Construction*” (2007). AB should be compacted to at least 95 percent relative compaction at or near optimum moisture content.

The Structural Engineer should determine final slab thickness, construction joint spacing, and structural reinforcing requirements as required for temperature, strength, and load requirements. Based on sulfate testing, conventional Type II cement may be used for site concrete.

The Carson City area is a region with exceptionally low relative humidity. As a consequence, concrete flatwork is susceptible to excessive shrinking and curling. Concrete mix proportions and construction techniques, including the addition of water and improper curing, can adversely affect the finished quality of the concrete and result in cracking, curling and spalling of slab-on-grade areas. Wood Rodgers recommends that placement and curing be performed in accordance with procedures outlined by the American Concrete Institute (ACI).

4.9 Steel Corrosion

The results of the corrosion testing on soil samples from TP-1 and TP-A are presented below and in Table 3 at the end of this report.

Testing was performed to provide sufficient information for the City to assess the corrosion potential per AWWA C105.

Resistivity: 8,200 to 20,000 ohm-cm
 pH: 6.55 to 7.02
 Chlorides: <15 ppm
 Sulfates: <15 ppm

Fair drainage was assumed due to the landscaping of the surrounding residences.

4.10 Site Drainage

It is important that surface drainage be directed away from tank foundations. Finish grade should be designed to slope at least 2 percent away from structures for a minimum distance of 10 feet. Landscape irrigation adjacent to site improvement should be monitored to minimize excessive watering.

**5.0 ADDITIONAL SOILS
ENGINEERING SERVICES**

It is important that prior to and during construction, the following operations be performed under Wood Rodgers' observation:

1. Site preparation and grading;
2. Suitability of imported fill materials;
3. Backfill placement and compaction;
4. Engineered select fill placement and compaction;
5. Footing excavations, prior to concrete and reinforcement placement.

Observation of these operations will allow us to check that soil conditions are consistent with this geotechnical investigation and to evaluate variations in soil conditions, which may require special consideration or modification of the recommendations.

We are also available to provide observation and testing services during concrete placement for foundations, welding, and the installation of interior and exterior coatings.

6.0 LIMITATIONS

Recommendations contained in this report are based on our field explorations, laboratory tests, and our understanding of the proposed construction. The study was performed using a mutually agreed upon scope of work. It is our opinion that this study was a cost-effective method to evaluate some of the potential geotechnical concerns. A more detailed, focused, and thorough investigation is recommended for design.

The soils data used in the preparation of this report were obtained from test pits, borings, and geophysical data. It is possible that variations in soils exist between the points explored. The nature and extent of soil variations may not be evident until construction occurs. If any soil conditions are encountered at this site, which are different from those described in this report, our firm should be immediately notified so that we may make any necessary revisions to our recommendations.

This report has been prepared solely for design purposes specific to the proposed Prison Hill Water Tank #2 in accordance with the generally accepted standards of practice at the time the report was written.

Other standards or documents referenced in any given standard cited in this report, or otherwise relied upon by the authors of this report, are only mentioned in the given standard; they are not incorporated into it or “included by reference,” as that latter term is used relative to contracts or other matters of law.

This report may be used only by the Client and only for the purposes stated within a reasonable time from its issuance, but in no event later than three years from the date of the report. Land or facility use, on and off-site conditions, regulations, or other factors may change over time, and additional work may be required with the passage of time.

It is the CLIENT’S responsibility to see that all parties to the project including the Contractor, Subcontractors, etc., are made aware of this report in its entirety.

The use of information contained in this report for bidding purposes should be done at the Contractor’s option and risk.

The findings, recommendations and professional opinions presented in this report were prepared in accordance with generally accepted professional engineering practice at this time in Carson City, Nevada. This report does not constitute a warranty, either expressed or implied.

7.0 REFERENCES

AWWA Standard, Welded Carbon Steel Tanks for Water Storage, American Water Works Association, ANSI/AWWA D100-05, May 1, 2006.

Bingler, E.C., *New Empire Quadrangle Geologic Map*, Map, Nevada Bureau of Mines and Geology, 1977.

Trexler, Dennis T., *Earthquake Hazards Map, New Empire Quadrangle*, , Nevada Bureau of Mines and Geology, 1979.

Standard Specifications for Public Works Construction, Sponsored and Distributed by Regional Transportation Commission of Washoe County, Carson City, Churchill County, City of Reno, City of Sparks, City of Yerington, Washoe County, 2007.

ATTACHMENT C

TABLE 3

CORROSIVITY TEST RESULTS

Test Pit No.	Sample Depth (ft.)	Sulfates (mg/Kg)	Chloride	Resistivity (ohm-cm)	pH
TP-1	1-2	<15	<15	8,200	6.55
TP-A	3.5 – 5.5	<15	<15	20,000	7.02

ATTACHMENT C



Vicinity Map
Prison Hill Water Tank #2
Carson City Nevada

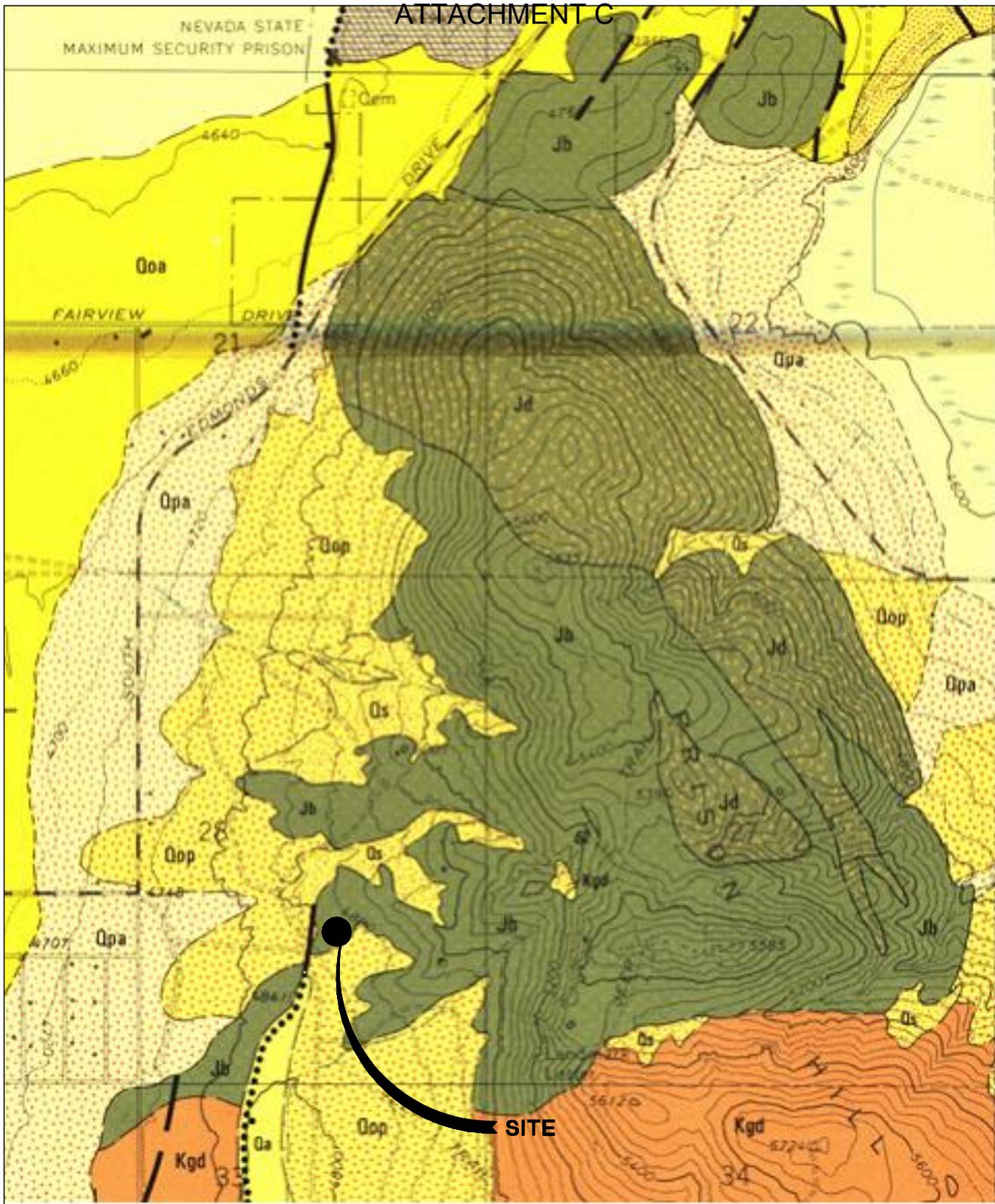
Figure 1

DRAWN BY TAH

JOB NUMBER 8059.018

DATE AUGUST 2009

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Base Map—New Empire Geologic Map
 by E.C. Bingler, 1977,
 (Nevada Bureau of Mines & Geology)



Geologic Map
Prison Hill Water Tank #2
 Carson City Nevada

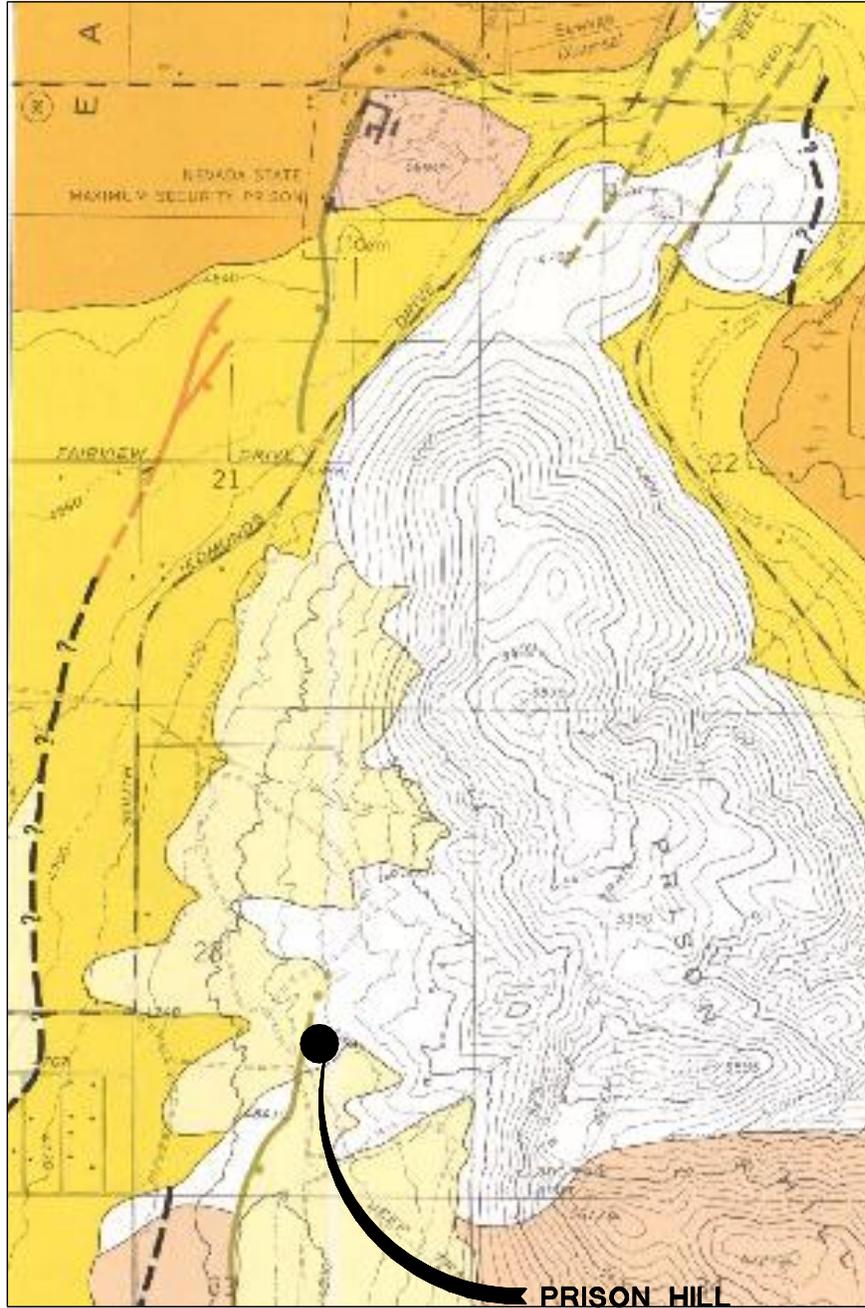
Figure 2

DRAWN BY TAH

JOB NUMBER 8059.018

DATE AUGUST 2009

ATTACHMENT C



PRISON HILL
TANK #2 SITE

Base Map—Earthquake Hazards Map,
New Empire Quadrangle by John W. Bell
and Dennis T. Trexler, 1979
(Nevada Bureau of Mines & Geology)



Earthquake Hazards Map
Prison Hill Water Tank #2
Carson City Nevada

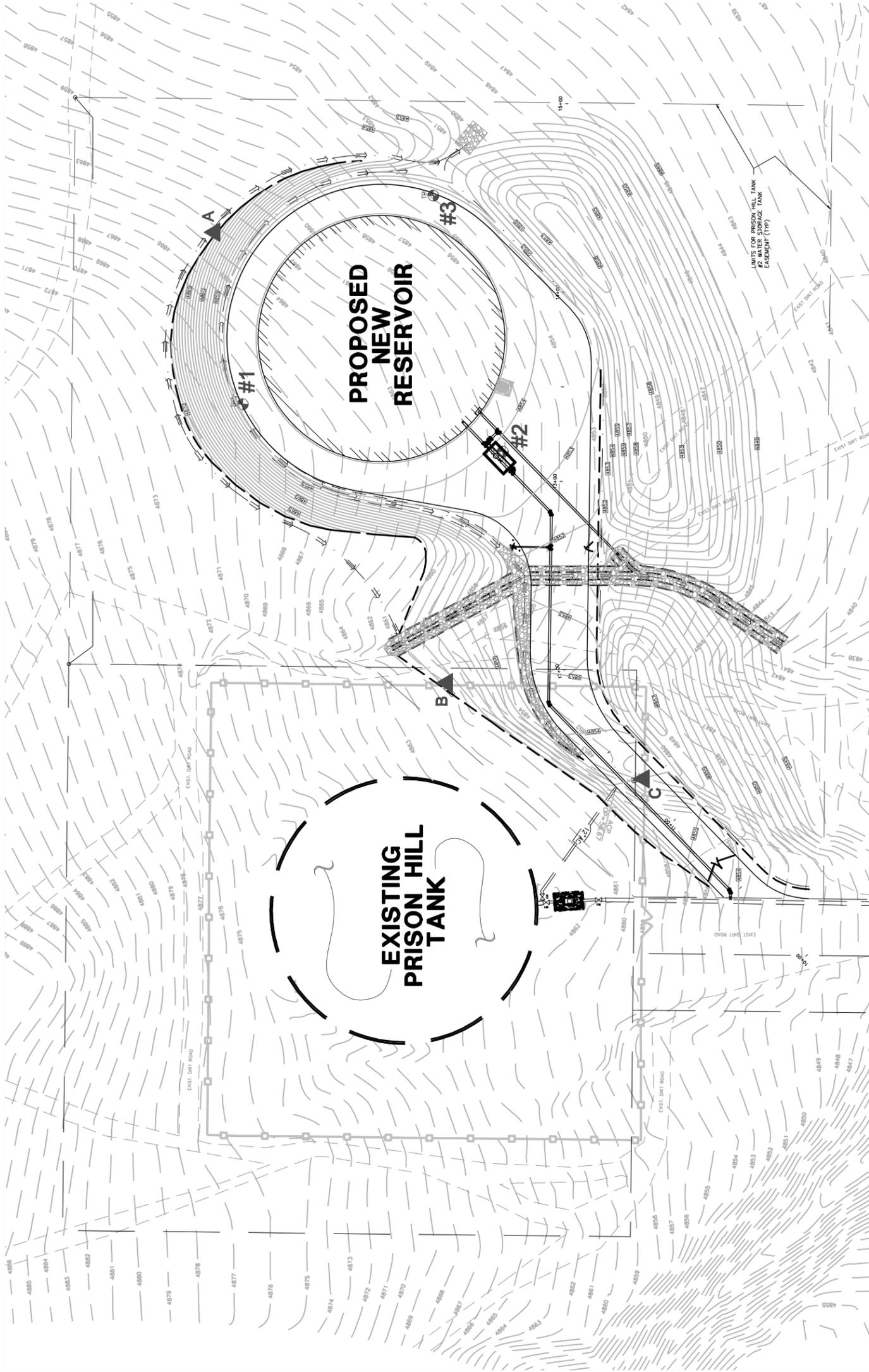
Figure 3

J:\Jobs\8059 Carson City On-Call Geotech\Prison Hill Tank #2\Civil\Dwg\Equake_Haz_Map_plate3.dwg 9/14/09 9:46am thail

TEST PIT LOCATIONS PRISON HILL WATER TANK #2

NEVADA

CARSON CITY AUGUST, 2009



▲ SECONDARY TEST PIT LOCATIONS

TP ◻ PRIMARY TEST PIT LOCATION

TEST PIT LOCATIONS	
#	NORTHING EASTING
1	14724045.75 2297323.07
2	14724070.75 2297185.67
3	14723935.17 2297222.29



WOOD RODGERS
 DEVELOPING INNOVATIVE DESIGN SOLUTIONS
 5440 Reno Corporate Drive Tel 775.823.4068
 Reno, NV 89511 Fax 775.823.4066

ATTACHMENT C

TEST PIT LOG

SURF. EL. :	WATER EL. :	DEPTH : 5.5 FEET	LOCATION :
EQUIPMENT : EC290 B Excavator			

DEPTH, Ft.	GRAPHIC LOG SAMPLE	SOIL DESCRIPTION	LABORATORY TESTING
	(Symbol: Circles in a matrix)	LIGHT BROWN SILTY GRAVEL WITH SAND (GM); angular metavolcanic rock fragments, dry, medium dense (weathered bedrock)	
1	(Symbol: Diagonal lines /)	MEDIUM GREY TO GREY-BROWN (BEDROCK); metavolcanics, FeOx and minor clays on fractures, soft to easy digging, highly fractured rock	
2	(Symbol: Diagonal lines \)	MEDIUM GREY (BEDROCK); metavolcanics, weak FeOx and MnOx on fractures, less fractured than above	
3	(Symbol: Diagonal lines /)		
4	(Symbol: Diagonal lines \)	LIGHT TO MEDIUM GREY (BEDROCK); moderately fresh weak altered, micro crystalline ground mass with notable mica, small phenocrysts of quartz, angular but some "shaley" fractures, difficult digging.	
5	(Symbol: Diagonal lines /)		
6	(Symbol: Diagonal lines \)	Refusal at 5.5 feet, terminate hole.	
7			
8			
9			
10			

REMARKS :

FIELD ENG. : EDL

WATER DEPTH @ COMPL. :

DATE : 06-24-09



LOG OF TEST PIT TP-1
 Prison Hill Water Tank #2
 Carson City, Nevada

FIGURE

5

DRAWN
ALH

JOB NUMBER
8059.018

APPROVED

DATE
08-28-09

REVISED

DATE

BORING LOG 8059.018_PRISON HILL TANK GPJ WOOD RODGERS GDT 9/14/09

ATTACHMENT C

TEST PIT LOG

SURF. EL. :	WATER EL. :	DEPTH : 3.8 FEET	LOCATION :
EQUIPMENT : EC290 B Excavator			

DEPTH, Ft.	GRAPHIC LOG SAMPLE	SOIL DESCRIPTION	% PASSING #200 SIEVE	LABORATORY TESTING
		LIGHT BROWN SILTY GRAVEL WITH SAND (GM); dry, angular rock fragments, trace organics, trace clays (TOPSOIL)	17.0	
1		MEDIUM BROWN (BEDROCK); highly weathered, metavolcanics, intensely fractured, clays on fractures, pervasive FeOx, soft to easy digging		
2		MEDIUM GREY TO GREY-BROWN (BEDROCK); weathered, metavolcanics, minor FeOx and MnOx on fractures, trace clays on fractures, less fractured than above, "solid" digging		
3				
4		Refusal at 3.8 feet, terminate hole.		
5				
6				
7				
8				
9				
10				

REMARKS :

FIELD ENG. : EDL

WATER DEPTH @ COMPL. :

DATE : 06-24-09



LOG OF TEST PIT TP-2
Prison Hill Water Tank #2
Carson City, Nevada

FIGURE

6

DRAWN
ALH

JOB NUMBER
8059.018

APPROVED

DATE
08-28-09

REVISED

DATE

ATTACHMENT C

TEST PIT LOG

SURF. EL. :	WATER EL. :	DEPTH : 11 FEET	LOCATION :
EQUIPMENT : EC290 B Excavator			

DEPTH, Ft.	GRAPHIC LOG SAMPLE	SOIL DESCRIPTION	% PASSING #200 SIEVE	LABORATORY TESTING
1		LIGHT BROWN SILTY GRAVEL WITH SAND (GM); trace clays and organics (TOPSOIL)		
2		MEDIUM BROWN CLAYS (WEATHERED BEDROCK); soft, angular, fragments of metavolcanics, heavy FeOx MEDIUM BROWN TO GREY-BROWN (BEDROCK); intensely fractured, weathered metavolcanics clays on fractures, strong FeOx, commonly 2" rock fragments (angular "shaley" breakage) some pieces up to 6", abundant fines, soft easy digging	26.1	
3				
4				
5				
6				
7				
8				
9				
10				

REMARKS :

FIELD ENG. : EDL	WATER DEPTH @ COMPL. :	DATE : 06-24-09
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LOG OF TEST PIT TP-3
Prison Hill Water Tank #2
Carson City, Nevada

FIGURE

7a



DRAWN ALH	JOB NUMBER 8059.018	APPROVED	DATE 08-28-09	REVISED	DATE
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BORING LOG - 8059.018 - PRISON HILL TANK GPJ - WOOD RODGERS GDT 9/14/09

ATTACHMENT C

TEST PIT LOG

SURF. EL. :	WATER EL. :	DEPTH : 11 FEET	LOCATION :
EQUIPMENT : EC290 B Excavator			

DEPTH, FL.	GRAPHIC LOG	SAMPLE	SOIL DESCRIPTION	% PASSING #200 SIEVE	LABORATORY TESTING
-11	[Hatched Box]		MEDIUM GREY (BEDROCK); weakly fractured, weakly weathered, metavolcanics, trace FeOx, MnOx on fracture more difficult excavation		
-12			Refusal at 11 feet, terminate hole.		
-13					
-14					
-15					
-16					
-17					
-18					
-19					
-20					

REMARKS :

FIELD ENG. : EDL	WATER DEPTH @ COMPL. :	DATE : 06-24-09
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LOG OF TEST PIT TP-3
Prison Hill Water Tank #2
Carson City, Nevada

FIGURE

7b

BORING LOG - 8059 018 - PRISON HILL TANK GPJ WOOD RODGERS GDT 9/14/09

DRAWN ALH	JOB NUMBER 8059.018	APPROVED	DATE 08-28-09	REVISED	DATE
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ATTACHMENT C

TEST PIT LOG

SURF. EL. :	WATER EL. :	DEPTH : 5.5 FEET	LOCATION :
EQUIPMENT : EC290 B Excavator			

DEPTH, Ft.	GRAPHIC LOG	SOIL DESCRIPTION	% PASSING #200 SIEVE	LABORATORY TESTING
1		LIGHT BROWN POORLY GRADED GRAVEL WITH SILT (GP-GM); angular rock, fragments of metavolcanics, trace clay on rock fragment surfaces (TOPSOIL)	11.4	
2		GREY-BROWN (BEDROCK); weathered metavolcanics, FeOx and clays on fractures, minor MnOx undulating bedrock surface, highly fractured, easy digging	14.3	
3		MEDIUM GREY (BEDROCK); weakly weathered, trace FeOx and MnOx on fractures, less fractured than above, fine crystalline mafic ground mass with small pheynocrysts of quartz, more solid with increasing depth, dark grey, micro crystalline with mica inside, medium grey (bleached) on fractures		
4				
5				
6		Refusal at 5.5 feet, terminate hole.		
7				
8				
9				
10				

REMARKS :

FIELD ENG. : EDL	WATER DEPTH @ COMPL. :	DATE : 06-24-09
------------------	------------------------	-----------------



LOG OF TEST PIT TP-A
Prison Hill Water Tank #2
Carson City, Nevada

FIGURE

8

BORING LOG 8059 018, PRISON HILL TANK GPJ, WOOD RODGERS GDT, 9/14/09

DRAWN ALH	JOB NUMBER 8059.018	APPROVED	DATE 08-28-09	REVISED	DATE
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ATTACHMENT C

TEST PIT LOG

SURF. EL. :	WATER EL. :	DEPTH : 5.5 FEET	LOCATION :
EQUIPMENT : EC290 B Excavator			

DEPTH, Ft.	GRAPHIC LOG SAMPLE	SOIL DESCRIPTION	LABORATORY TESTING
1	[Hatched Pattern]	REDDISH-BROWN (BEDROCK); intensely fractures, weathered metavolcanics with abundant brown clays holding angular rock fragments together, pervasive FeOx, max rock fragment \leq 3", soft to very easy digging	
2	[Hatched Pattern]	GREY-BROWN (BEDROCK); moderately weathered metavolcanics angular "shaley" breakage, rock fragments up to 8", minor FeOx, MnOx and clays on fractures, more solid than above	
3	[Hatched Pattern]		
4	[Hatched Pattern]		
5	[Hatched Pattern]	MEDIUM GREY TO GREEN (BEDROCK); pyroxene/epidote/hornblende (?) rich metavolcanics, more solid, trace FeOx, difficult digging	
6	[Blank]	Refusal at 5.5 feet, terminate hole.	
7	[Blank]		
8	[Blank]		
9	[Blank]		
10	[Blank]		

REMARKS :

FIELD ENG. : EDL

WATER DEPTH @ COMPL. :

DATE : 06-24-09



LOG OF TEST PIT TP-B
Prison Hill Water Tank #2
Carson City, Nevada

FIGURE

9

DRAWN
ALH

JOB NUMBER
8059.018

APPROVED

DATE
08-28-09

REVISED

DATE

BORING LOG 8059 018_PRISON HILL TANK GPJ_WOOD RODGERS GDT 9/14/09

ATTACHMENT C

TEST PIT LOG

SURF. EL. :	WATER EL. :	DEPTH : 9.5 FEET	LOCATION :
EQUIPMENT : EC290 B Excavator			

DEPTH, Ft.	GRAPHIC LOG SAMPLE	SOIL DESCRIPTION	LABORATORY TESTING
1	[Dotted pattern]	REDDISH-BROWN SLIGHTLY SILT SAND (SP-SM); dry, loose, trace organics, wind blown (?) or possibly imported	
2	[Dotted pattern]	LIGHT BROWN SILTY SAND WITH GRAVEL (SM); damp, medium dense, weak CaCo3 (?) cementation	
3	[Dotted pattern]		
4	[Dotted pattern]		
5	[Dotted pattern]		
6	[Cross-hatched pattern]	REDDISH-BROWN TO YELLOWISH BROWN (BEDROCK); intensely fractured, weathered metavolcanics with abundant brown clays, pervasive FeOx, very soft, easy digging	
7	[Cross-hatched pattern]	LIGHT GREY TO LIGHT GREY-BROWN (BEDROCK); weathered, moderately fractured, metavolcanics, FeOx, MnOx and minor clays on fractures, "shaley" breakage, angular rock, fragments up to 8"	
8	[Cross-hatched pattern]		
9	[Cross-hatched pattern]	LIGHT GREY (BEDROCK); medium hard, weakly fractured, difficult digging (light grey in surface, dark grey internally)	
10	[Cross-hatched pattern]	Refusal at 9.5 feet, terminate hole.	

REMARKS :

FIELD ENG. : EDL	WATER DEPTH @ COMPL. :	DATE : 06-24-09
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LOG OF TEST PIT TP-C
 Prison Hill Water Tank #2
 Carson City, Nevada

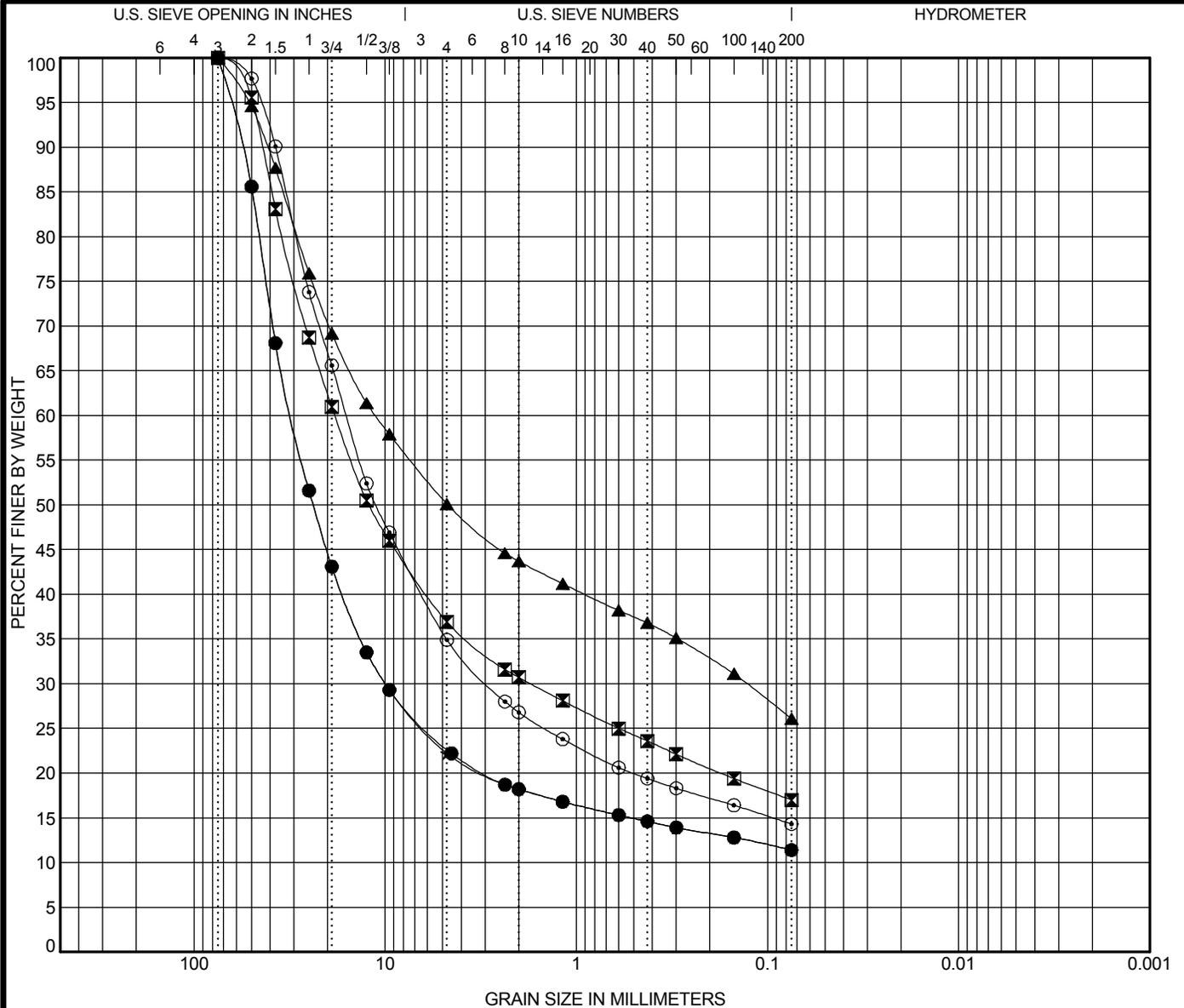
FIGURE

10

DRAWN ALH	JOB NUMBER 8059.018	APPROVED	DATE 08-28-09	REVISED	DATE
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BORING LOG 8059.018_PRISON HILL TANK GPJ WOOD RODGERS GDT 9/14/09

ATTACHMENT C



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification (ft)	Classification	LL	PL	PI	Cc	Cu		
● ALT-A 0.9-3.5	POORLY GRADED GRAVEL with SILT(GP-GM)	NP	NP	NP	85.81	819.51		
■ TP-2 2.5-3.8	SILTY GRAVEL with SAND(GM)	NP	NP	NP				
▲ TP-3 1.2-11.0	SILTY GRAVEL with SAND(GM)	NP	NP	NP				
★ TP-A 0.9-3.5	POORLY GRADED GRAVEL with SILT(GP-GM)	NP	NP	NP	85.81	819.51		
⊙ TP-A 3.5-5.5	SILTY GRAVEL with SAND(GM)	NP	NP	NP				
Specimen Identification (ft)	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● ALT-A 0.9-3.5	75	30.732	9.945		77.3	11.3	11.4	
■ TP-2 2.5-3.8	75	18.257	1.735		63.1	19.9	17.0	
▲ TP-3 1.2-11.0	75	11.2	0.129		49.9	24.0	26.1	
★ TP-A 0.9-3.5	75	30.732	9.945		77.8	10.8	11.4	
⊙ TP-A 3.5-5.5	75	15.908	2.89		65.1	20.6	14.3	



GRAIN SIZE DISTRIBUTION

Project: Prison Hill Water Tank #2

Location: Carson City, Nevada

Number: 8059.018

U.S. GRAIN SIZE 8059.018 PRISON HILL IIGPJ WOOD RODGERSHYD.GDT 9/14/09

DISTRIBUTION

**Geotechnical Investigation
Prison Hill Water Tank #2
Carson City, Nevada**

September 11, 2009

Copies 1-6: Carson City Public Works Department
3505 Butti Way
Carson City, Nevada 89701
Attn: Mr. Mark Brethauer, P.E.

Copy 7: Job File

Copy 8: Bound Report File

Prison Hill Water Tank

BJG

ARCHITECTURE + ENGINEERING



ATTACHMENT D

BJG ARCHITECTURE + ENGINEERING

January 28, 2008

Reno NV
Las Vegas NV
Pleasanton CA

Mark Brethauer, PE
Carson City Development Services
3505 Butti Way
Carson City, NV 89701-3498

Re: Prison Hill Water Tank Structural Evaluation
BJG Project No. 20070123

Dear Mr. Brethauer,

Per your request, BJG has conducted a structural evaluation of the Prison Hill water tank located in Carson City, Nevada. The purpose of the review was to assess the structural condition of the water tank. The tank is a critical component of the city's water system and there is a need to get an opinion of the life expectancy.

BACKGROUND

The Prison Hill water tank is a 3 million gallon water tank built in 1978. The tank is located in Carson City, Nevada on the southeast side of the valley. It sits on the side of a mountain with a sweeping slope from east to west. The cylindrical tank is a prestressed composite construction, having shotcrete walls. The roof varies in thickness from 3 to 11 ½ inches and is a concrete clear span dome. The roof is supported by the twenty four inch by approximately nine inch tension ring, causing the roof to be in compression. The tension ring resists the outward thrust forces that are caused by the domed roof's self weight and live loads. The ring is made up of concrete and prestressed No. 6-gauge wires. The water tank walls are concrete with a seventy foot radius, a height of approximately twenty six feet, and an approximate thickness of 7 inches. The forces in the tank walls are resisted by the horizontal rings in the walls made up of concrete and steel prestressed wires. The original design of the tank was performed by Crom Prestressing, Inc. and was based on formulas for stress and strain by Roark. The tank appears to be designed in accordance with the 1976 UBC. The design values used in the 1976 code are comparable to today's code with the exception that the seismic design values are somewhat higher today.

PURPOSE

The purpose of the structural observation is to evaluate the visual signs of deterioration of the Prison Hill water tank. The method of evaluation is based on visual evidence supported with minor destructive testing due to the on going operation of the water tank.

FINDINGS

The investigation of the Prison Hill water tank was done between August and December of 2007. The resources that BJG used consisted of, the structural calculations by Crom Prestressing, Inc. dated April 26, 1978, drawings dated November 4, 1977, and a video of a diving investigation conducted by Inland Marine Services dated October 8, 2007. The investigation consisted of numerous site visits, digital concrete scanning, concrete coring, and concrete chipping to acquire visual

ATTACHMENT D

evidence of the steel reinforcement. During the site visits the distress observed has been recorded with the help of photographs as seen in the appendix. There are three different areas that will be discussed: the domed roof, the shotcrete walls, and the tension ring.

ROOF

The roof has prominent concaving (see photo 1), delaminating (see photo 2), and cracking (see photo 2) at numerous points. The major concaved section occurs at the top of the roof (See Sketch 1). When walking across the concaved sections at this location the roof seems to vibrate excessively. Our investigation on the roof consisted of four concrete cores each of which was cored on December 12th, 2007. The first core was taken adjacent to the ladder (see sketch 1, 1st concrete core) with a three inch diameter and a six and a half inch depth. The core was not drilled to full depth; it was drilled to seven and a half inches and intentionally broken free for testing. The core that was drilled contained a six gauge wire at a depth of five inches; also the core contained crazing cracks (1" +/- blocks) that extended to ¾ of an inch depth.

The first core was tested by Earth Science Consultants Associated. The results showed that the compressive strength was more or less 5000 psi with a cone failure mode. The concrete batch consisted of 3/8 inch maximum size. The second core was taken at approximately sixteen feet from the edge of the tension ring (see sketch 1, 2nd concrete core). The core was taken with a dry drill so the core wouldn't fall into the tank. It was measured to be two and a half inches (note calculations called for three inch roof, see photo 4). The third core was taken at about twenty one feet from the center of the roof (see sketch 1, 3rd concrete core). The roof thickness at this core is approximately two and one half inches thick. The last and final core revealed a thickness of two and one half inches (see sketch 1, 4th concrete core). The core contained two No. 6 gauge wires perpendicular to each other at one and three quarter inches below the roof top. After the coring of the roof was completed the delaminating underneath the roof was evident at each location. The delaminating of the roof was also pointed out in a DVD of an inspection dated 10/08/2007 conducted by Inland Marine Services.

Our investigation of the roof included the measurement of deflection of concaved area 1 (see Sketch 1). The deflection was measured by taking measurements at every 15 degrees using string that was stretched across the deflected area (see photo 5). The deflection was measured at every three inches along the string. The deflection was interpolated between the strings and then modeled in a structural analysis program. The dome was analyzed with the original design intent (a concrete dome, see photo 6) and then was analyzed with the deformation entered into the structural model (see photo 7). We found that in the location of the concaved area, the concrete dome was subjected to bending forces causing the concrete to be in tension. The structural concrete dome model was analyzed with two loads, snow load and self weight.

The concaved areas greatly reduce the dome's capacity. It causes the compressive forces to be rerouted around the area and creates local bending in sections that were not designed to resist bending. The attached stress contour diagrams show this.

ATTACHMENT D

WALLS

The walls have numerous sections of alligator cracking (see photos 8 & 9). During the investigation, the wall reinforcement was exposed by chipping away at the outside face of the walls. The reinforcement was exposed in three different locations at three different heights. The first was done at roughly a height of 24 feet at a location where there was a considerable amount of alligator cracking (see sketch 1, wall chipping area 1). The next exposed reinforcement was done at about 15 feet high at wall chipping area 2 (see sketch 1). The last and final exposed reinforcement was done at wall chipping area 3 and a height of 5 feet (see sketch 1). The steel reinforcement found during the chipping consisted of approximately #4 bars running vertical and prestressed No. 6 gage wires running horizontal. At the first location the vertical bars were spaced at approximately 18 inches on center with a horizontal bar spacing of about an inch on center (see photo 10). The second location exposed a vertical reinforcement spacing of 12 inches on center with a horizontal bar spacing of about a ½ inch on center (see photo 11). The final location vertical bar spacing was roughly 6 inches on center with a horizontal bar spacing of about 2 bars per ½ inch on center (see photo 12). At the three exposed areas the reinforcement visually looked to be in good condition.

TENSION RING

The tension ring investigation involved two locations of chipping one at tension ring area 1 and another at tension ring area 2 (see sketch 1). Both locations had already seen some delaminating occurring at the base of the tension ring. At the first location a good amount of the steel reinforcement looked like it had been exposed to the weather for a considerable amount of time (see photo 13-15). At both exposed reinforcement areas there were signs of some corroded and broken reinforcement. At the first location of the tension ring there were multiple broken No. 6 gage wire causing a reduction in the capacity of the tension ring.

CONCLUSION

Based on our investigation the roof appears to be structurally inadequate. Extensive delaminating exists on both the top and bottom of the roof itself. Furthermore we believe that the deformations (concaving) cause the domed roof to not perform as it was originally designed. The original design intent of the roof dome causes the concrete to be in compression. The current state of the roof is not completely domed, due to concaving in several locations. This causes tension forces to be distributed into the clear span concrete domed roof. Photos 6 and 7 shows that the stress distribution changes dramatically from the original design to the actual condition of the concrete domed roof. The original design shows that the concrete is in compression and is working according to the original design intent. The model that was analyzed using the deflected shape only took into account one of the deformed areas, there are several more concaved areas across the roof. The multiple concaved areas several affect the design intent of the roof. Normal concrete design does not allow concrete in tension. The model that was analyzed shows that the stresses don't effectively distribute across the dome applying bending forces to concaved areas.

ATTACHMENT D

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February 4, 2008

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The tension ring also appears to be structurally inadequate due to the exposure of the steel reinforcement in the observed areas. The exposure of the reinforcement illustrates that water and weather have infiltrated the tension ring and corroded the steel within. The steel reinforcement has corroded, deteriorated, and broken throughout the areas that were exposed. We believe that the tension ring could be restored, but may not be worth the cost due to the current state of the roof.

The wall cracking was likely caused by water exposure and the change in weather that occurs in the geographical location of the tank. There has been a considerable amount of freeze and thaw damage throughout. We believe that the exposure of water could be linked to the leak in the interior liner (noted in the inspection by the Inland Marine Services). It is our opinion that with the water exposure in the walls, the steel reinforcement could corrode more quickly than expected.

The condition of the tank is a result of gravity loads and deterioration of materials. The seismic capacity of the tank has also decreased with this deterioration. Our investigation did not include a seismic analysis, but with the increase in forces required by today's code there is an increase in damage potential should there be a major event.

RECOMENDATION

In our opinion the water tank needs to be replaced in the relatively near future. We believe that it is not economically practical to repair the structure to make the water tank structurally sound for prolonged life.

It should be noted that the report is based on visual observations and that not all conditions were necessarily observed. The structural evaluation goal was to draw conclusions and recommendations regarding the life expectancy and the durability of the tank.

Please call if you would like to discuss this furthermore.

Sincerely,

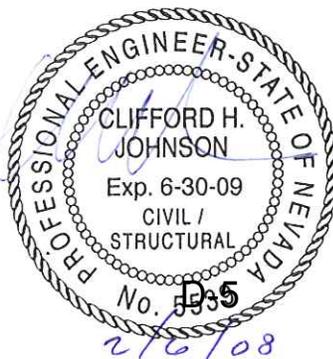
BJG | ARCHITECTURE + ENGINEERING



Tyler Haack, EIT

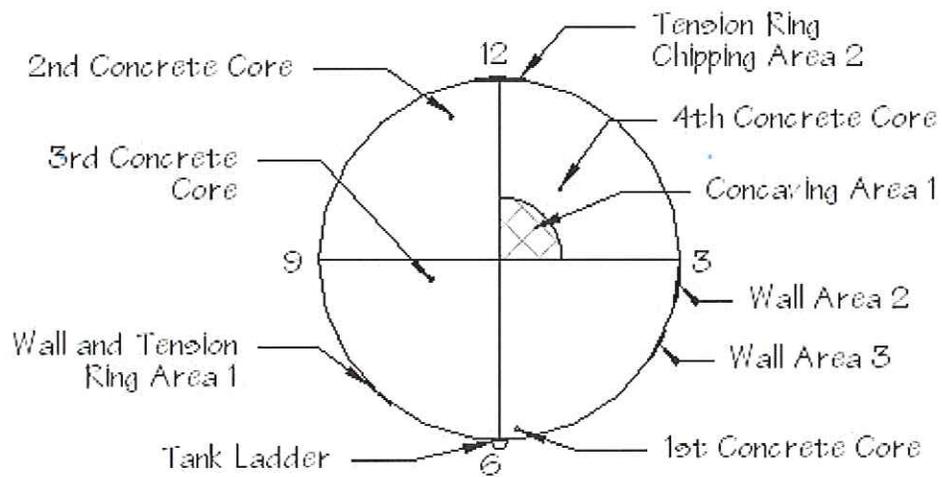


Clifford H. Johnson, SE



ATTACHMENT D

Prison Hill Water Tank



Sketch 1

ATTACHMENT D

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February 4, 2008

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Photo 1:
Concaving Roof



Photo 2:
Delaminating/Cracking Roof

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February 4, 2008

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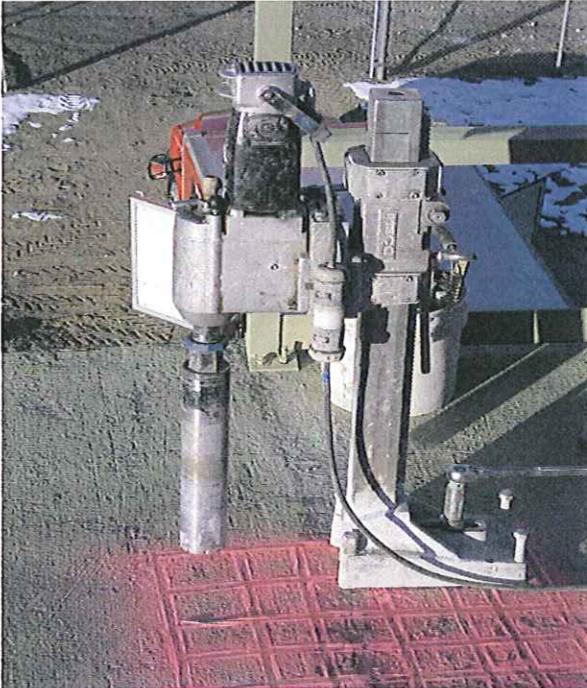


Photo 3:
Concrete core #1 located next to the ladder



Photo 4:
Concrete core #2

ATTACHMENT D

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February 4, 2008

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Photo 5:
Concaving Area

ATTACHMENT D

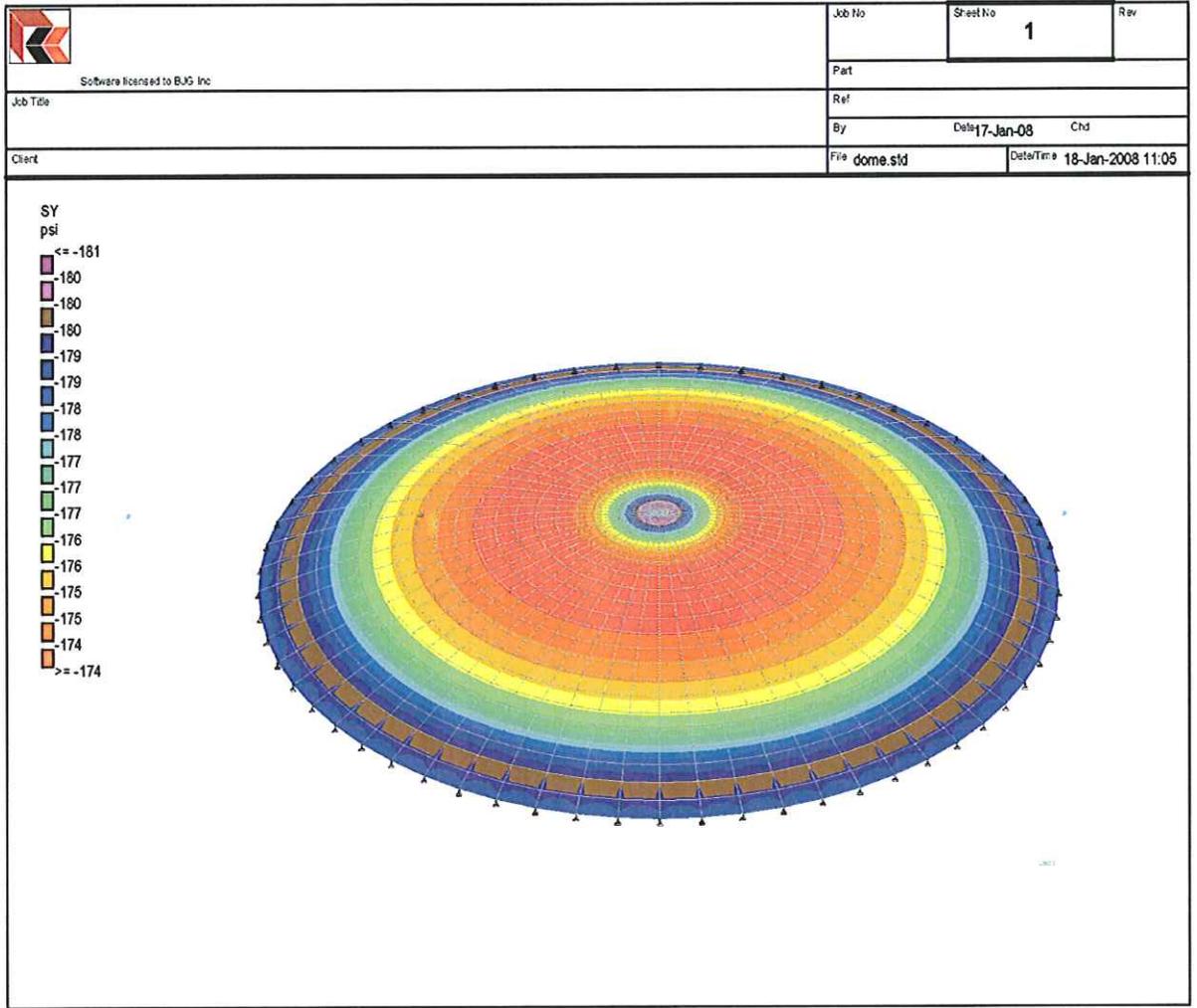


Photo 6:
Original Design Stress Distribution

ATTACHMENT D

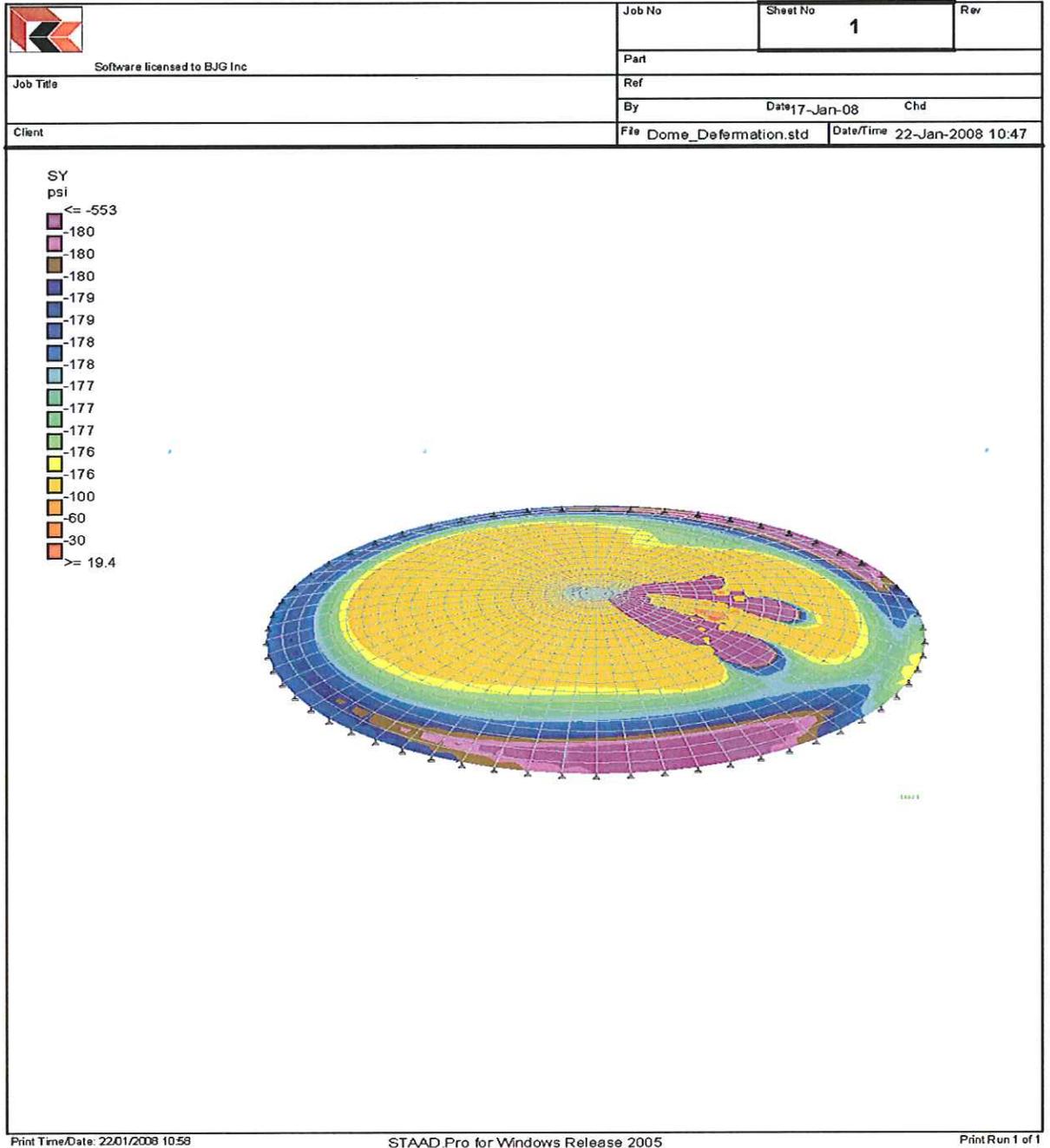


Photo 7:
Dome with Deformation

ATTACHMENT D

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February 4, 2008

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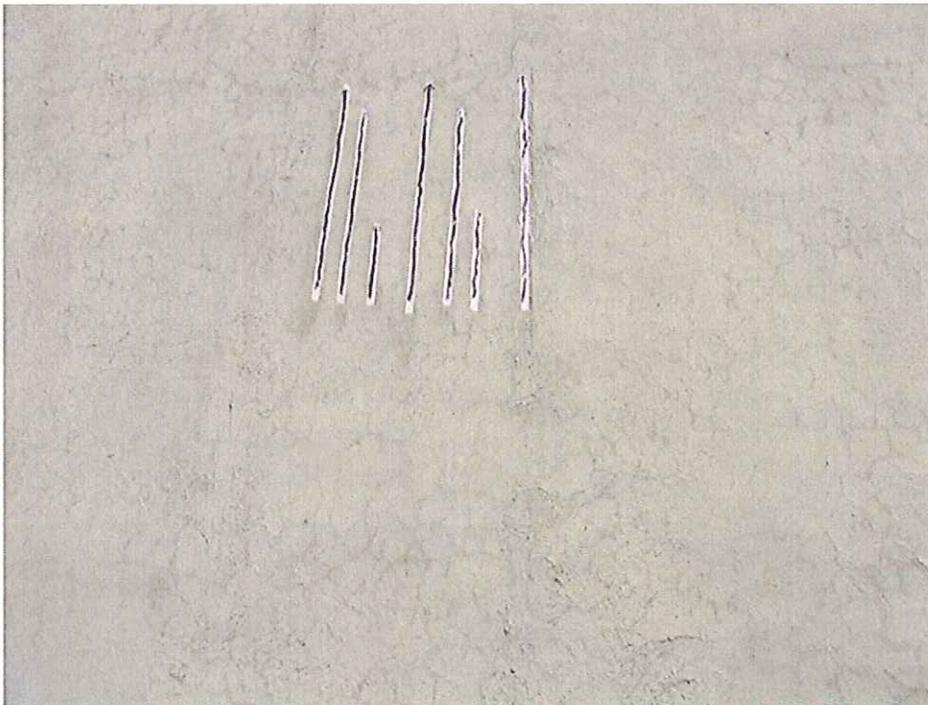


Photo 8 & 9:
Wall Alligating Cracking

ATTACHMENT D



Photo 10:
Wall Chipping Area 1



Photo 11:
Wall Chipping Area 2



Photo 12:
Wall Chipping Area 3

ATTACHMENT D

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February 4, 2008

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Photo 13, 14, & 15:
Tension Ring exposed at 8 o'clock.

ATTACHMENT E

RIGHT-OF-WAY GRANT NVN 013400 AMENDMENT

By application dated September 10, 2009, Carson City applied for amendment of grant NVN 013400 for new water supply facilities.

The application to amend conforms to the appropriate laws and regulations. Therefore, pursuant to the Act of October 21, 1976 (90 Stat 2776; 43 U.S.C. 1761), Grant NVN 013400 is hereby amended to include the right to construct, operate, maintain, and terminate a new water tank, water pipeline and related facilities on public lands described as follows:

Mount Diablo Meridian

T. 15 N., R. 20 E.,
sec. 28, NW¼SE¼.

The approved amendment area is approximately 420 feet in length and 400 feet in width and contains 3.03 acres, more or less.

The right-of-way grant is further amended to include the following stipulations:

- a. *The holder shall construct and operate the authorized facilities as described under Section 2.2 (Preferred Alternative) of Environmental Assessment DOI-BLM-NV-2010-14-EA, Prison Hill Water Tank #2, Carson City, Nevada, May 2010.*
- b. *The holder and its contractors shall consider the possibility of wildfire danger and take into account the need for prevention and suppression of fire on the right-of-way or adjacent public lands. Construction crews should be cautioned as to the potential fire danger of welding activities, open flames, and tobacco use. Basic firefighting equipment such as shovels, fire extinguishers, axes, or other tools should be readily available to crews to assist in putting out fires, if necessary. All fires should be reported to the Minden Interagency Dispatch Center at (775) 883-5995.*
- c. *The holder shall seed all disturbed areas, using an agreed upon method suitable and seed mixture for the location (Attachment 1). Seeding shall be repeated if a satisfactory stand is not obtained as determined by the authorizing officer upon evaluation after the growing season.*
- d. *All above-ground structures, including fencing, not subject to safety requirements shall be painted by the Holder to blend with the natural color of the landscape. The paint used shall be a flat, non-reflective color which simulates "Standard Environmental Color" Sudan Brown. (Color Chart is attached – Attachment 2.)*
- e. *The holder shall contact the Washoe Tribe of Nevada and California and provide the opportunity for a tribal monitor to be onsite to monitor surface disturbing activities authorized by this grant.*

ATTACHMENT E

Furthermore, Exhibit A, incorrectly referenced in the grant renewal, is hereby replaced with the attached Exhibit A-1, titled "Amendment to Appl. No. N-13400" and stamped – "Received by BLM Nevada State Office May 19, 1977") and is supplemented by Exhibit A-2, which reflects the additional area and facilities authorized by this amendment.

All other terms and conditions of the original grant continue to apply.

IN WITNESS WHEREOF, The undersigned agrees to the terms and conditions of this right-of-way grant.

(Signature of Holder)

(Signature of Authorized Officer)

(Title)

Manager, Sierra Front Field Office
(Title)

(Date)

(Effective Date of Grant)

ATTACHMENT E

ATTACHMENT 1

Prison Hill Water Tank #2 ROW NVN 013400

Native Seed Mix for Restoration and Reclamation.

The following native species are adapted to the environmental conditions at the site. Availability of the seed for each species may vary. If certain species are not available, then a native species substitute may be used when approved by the BLM office.

Seeding Rate Calculations

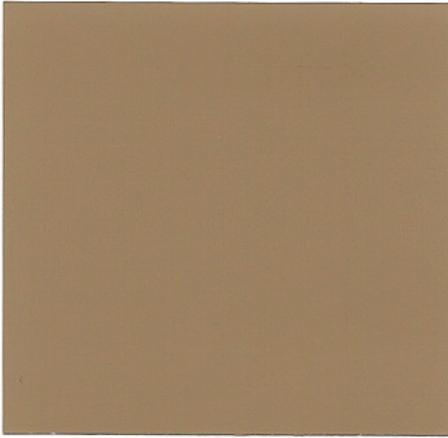
Seeding Method: Broadcast
Acres to seed: 1.0
Rate Calculation method: NRCS Seed Rate

Species	Mix %	Standard Seeding Rate(lb/acre)	Standard Seeds/ft2	Actual Seeding Rate(lb/acre)	Actual Seeds/ft2	Total lb PLS	Germ %	Purity %	Total lb. Bulk
antelope bitterbrush	10	50.67	20	5.06	2	5.06	0.90	0.95	6
Sandberg bluegrass	35	1.66	40	0.58	14	0.58	0.80	0.9	1
squirreltail	35	9.07	40	3.17	14	3.17	0.80	0.9	5
winterfat	10	7.86	20	0.78	2	0.78	0.50	0.6	3
woolly mule-ears	10	69.69	40	6.96	4	6.96	0.80	0.9	10

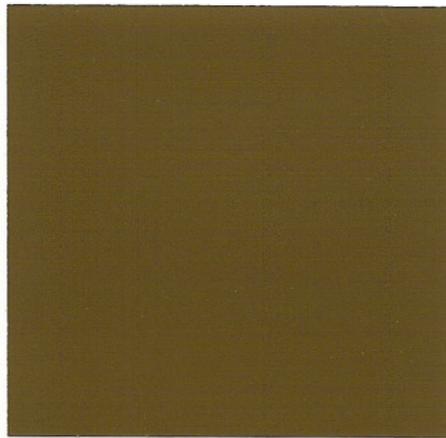
Total Mix: 100
 Total Seeds/ft2: 36

Total Seed required(lb): 24

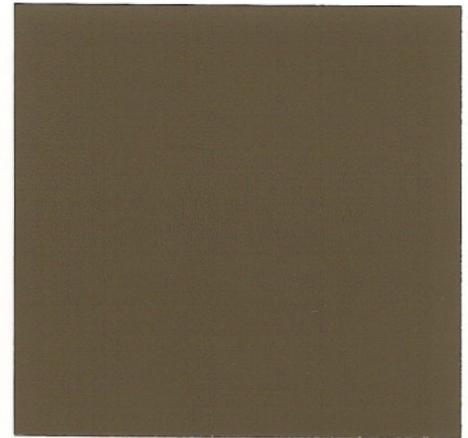
*The Total lb. Bulk, is the actual amount of seed to be purchased and would need to be calculated at the time of the seed purchase as each seed lot will have different percentages for seed purity and germ that is specific to each seed lot. All seed purchased must be certified as “weed free”.



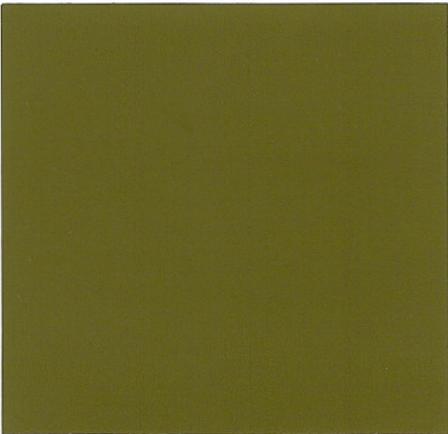
Carlsbad Canyon



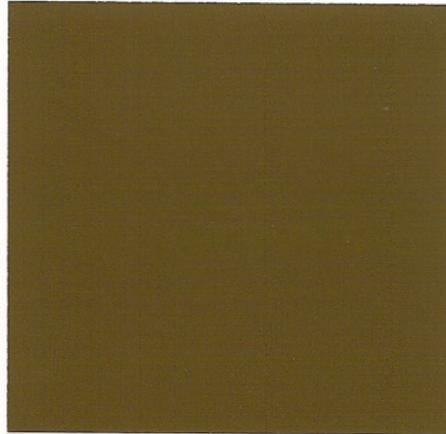
Covert Green



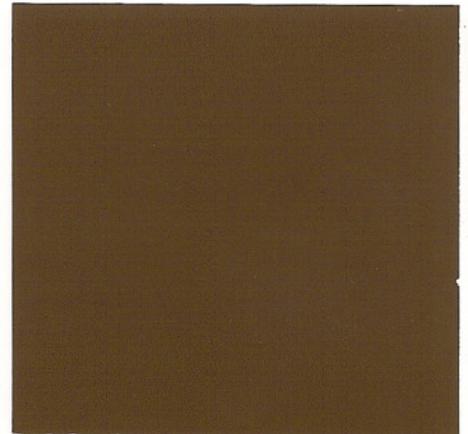
Shadow Gray



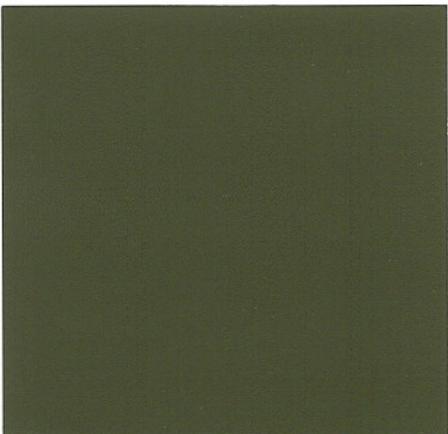
Juniper Green



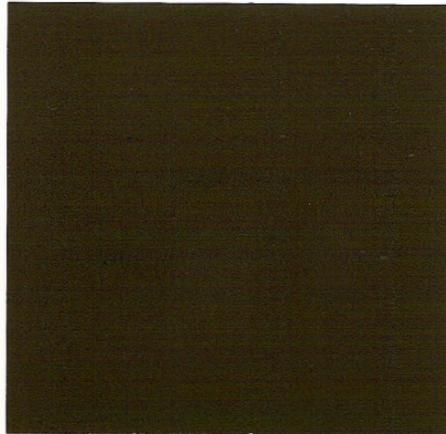
Shale Green



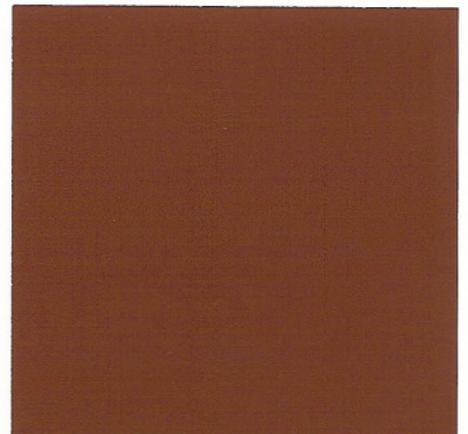
Sudan Brown



Beetle



Yuma Green



Carob Brown

The **Standard Environmental Colors** chart was developed to assist with color selection to minimize the visual contrast of a facility in the landscape.

In order to ensure color accuracy, use an original color chart to match paint. When matching the color chip, request the paint company to have their computer scan set on "natural light." Compare the new paint sample to the color chip under indirect natural sunlight. Use semi-gloss paint, where appropriate, to enhance durability yet reduce reflectivity. Select colors a shade or two darker than the surrounding landscape to account for natural shadows, normal fading, and weathering.

Order **Standard Environmental Colors** charts by emailing your request to: Printed Material Distribution System (PMDS), BLM_NOC_PMDS@blm.gov or fax to 303-236-0845. Provide the quantity requested along with a contact name, physical address (no P.O. Boxes), and telephone number. For more information or questions, please call 202-785-6574.