NOTICE TO CONTRACTORS

CARSON CITY PURCHASING AND CONTRACTS
201 NORTH CARSON STREET, SUITE 3
CARSON CITY, NEVADA 89701
775-887-2133 extension 30137 / FAX 775-887-2107
http://www.carson-city.nv.us/Index.aspx?page=998

ADVERTISED BID #0910-181

BID TITLE "Carson City Municipal Well #50 and 24 Inch Water Line Construction"

Labor Commissioner PWP# CC-2010-236
Public Works Project No. 4.0817
Engineer's Estimate: $900,000.00
PREPARED DATE: March 25, 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 install the required mechanical components to extract water from a new municipal well located in Carson City. This project also includes the installation of approximately 1,700 feet of new 24" PVC water line. This project will include all earth work, plumbing, concrete, asphalt, electrical conduits and concrete pads for the complete installation of a new, underground, prefabricated pump control equipment vault, above ground prefabricated chlorination system and above ground prefabricated electrical control cabinet. The Contractor will install a City provided submersible pump (all column pipe and electrical wire by contractor). 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 Contractor's license issued by the Nevada State Contractor's Board at the time of the bid.

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

You may download this Bid Document, excluding the drawings, and a pdf version of the Bid Bond and Bid Proposal to prepare your bid from the Carson City website http://www.carson–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 10:00 a.m. on April 19, 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 10:10 a.m. on April 19, 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 at SScott@ci.carson-city.nv.us 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, May 6, 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, Contracts Coordinator

Signature in Project File

_____

Andrew Burnham, Public Works Director

Signature in Project File

_____

Mark Brethauer, Project Manager

TABLE OF CONTENTS

SECTIONS		PAGE
Notice to Contractors		**NC-1 thru NC- 3**
Table of Contents		**TOC-1 thru TOC-3**
Project Coordination		**PC-1 thru PC-1**
Instructions to Bidders		**ITB-1 thru ITB-9**
Bid Proposal Forms		**BP-1 thru BP-15**
Bid Bond		
Bid Proposal Summary		
Contract Award		**CA-1 thru CA-5**
Sample Contract and Bonds (For Use after Bid Opening)		**C-1 thru C-16**
Sample Contract		
Performance Bond		
Labor and Material Payment Bond		
General Conditions		**GC-1 thru GC-8**
Section 1.0	**Intent, Definitions, Abbreviations**	**GC-1**
GC 1.1	Intent of Contract Documents	GC-1
GC 1.2	Partial Invalidity	GC-1
GC 1.3	Governing Order of Bidding and Contracting Documents	GC-1
GC 1.4	Headings	GC-2
GC 1.5	Definitions	GC-2
GC 1.6	Abbreviations	GC-7
Section 2.0	**Contract Administration and Responsibilities: Owner's Representative, Construction Manager, Design Consultant, and Contractor**	**GC-9 thru GC-20**
GC 2.1	Administration	GC-9
GC 2.2	Owner's Representative	GC-9
GC 2.3	Construction Manager	GC-9
GC 2.4	Design Consultant	GC-10
GC 2.5	City	GC-11
GC 2.6	Contractor	GC-13
Section 3.0	**Progress of Work, Meeting, Schedules**	**GC-21 thru GC-29**
GC 3.1	Beginning of Work	GC-21
GC 3.2	Performance of the Work	GC-21
GC 3.3	Plans and Specifications Furnished by the City	GC-21
GC 3.4	Order of Work	GC-21
GC 3.5	Time of Completion	GC-21
GC 3.6	Means and Methods	GC-21
GC 3.7	City-furnished Materials	GC-22
GC 3.8	Defective and Unauthorized Work	GC-22
GC 3.9	Pre-construction Conference	GC-22
GC 3.10	Progress Meetings	GC-22
GC 3.11	Construction Schedules	GC-23
GC 3.12	Notice of Delays	GC-25
GC 3.13	Liquidated Damages	GC-26
GC 3.14	Rights Beyond Liquidated Damages	GC-26
GC 3.15	Extension of Time	GC-26
GC 3.16	Temporary Suspension of Work	GC-27
GC 3.17	Protection of Antiquities	GC-28
GC 3.18	Contract Termination	GC-28
GC 3.19	City's Right to Terminate for Convenience	GC-29

TABLE OF CONTENTS

SECTIONS		PAGE
GC 3.20	Work During Disputes and Litigation	GC-29
GC 3.21	Lands and Right-of-way	GC-29
GC 3.22	Waiver of Rights	GC-29
Section 4.0	**Shop Drawings and Quality Control/inspections**	**GC-30 thru GC-34**
GC 4.1	Contractor's Responsibilities	GC-30
GC 4.2	Source of Materials	GC-30
GC 4.3	Transmittal Procedures	GC-30
GC 4.4	Review Procedure	GC-31
GC 4.5	Quality Control – General	GC-32
Section 5.0	**Payment**	**GC-35 thru GC-37**
GC 5.1	General	GC-35
GC 5.2	Payment for Patents and Patent Infringement	GC-35
GC 5.3	Payment of Taxes	GC-35
GC 5.4	Payment for Labor and Materials	GC-35
GC 5.5	Partial Payments	GC-35
GC 5.6	Retention	GC-36
GC 5.7	Other Withholds	GC-36
Section 6.0	**Change Orders**	**GC-38 thru GC-44**
GC 6.1	General	GC-38
GC 6.2	Differing Site Conditions	GC-38
GC 6.3	Resolution of Disputes	GC-38
GC 6.4	Modification Procedures	GC-39
GC 6.5	Disputes	GC-43
GC 6.6	Alternative Dispute Resolution	GC-44
Section 7.0	**Construction Facilities and Temporary Controls**	**GC-45 thru GC-54**
GC 7.1	General	GC-45
GC 7.2	Temporary Utilities and Construction Facilities	GC-45
GC 7.3	Construction Controls	GC-46
GC 7.4	Public Safety/convenience and Traffic Controls	GC-49
GC 7.5	Project Signs	GC-51
GC 7.6	Project Office	GC-51
GC 7.7	Storage of Materials	GC-51
GC 7.8	Hazardous Materials	GC-52
GC 7.9	System Testing	GC-52
GC 7.10	Coordination/cooperation with Utilities	GC-52
GC 7.11	Contaminated Groundwater And/or Soil	GC-53
GC7.12	Dust Control	GC-53
GC7.13	By-Pass Pumping of Sanitary Sewer	GC-53
Section 8.0	**Contract Completion, O& M Manuals**	**GC-55 thru GC-58**
GC 8.1	Intermediate Completion	GC-55
GC 8.2	Substantial Completion	GC-55
GC 8.3	Construction Completion, Final Inspection, Payment, and Acceptance	GC-55
GC 8.4	Operation and Maintenance Manuals	GC-56
GC 8.5	Equipment Start-up	GC-56
GC 8.6	Final Clean up	GC-56
GC 8.7	Warranty of Title	GC-56
GC 8.8	Record Drawings	GC-56
GC 8.9	Warranty	GC-56
	Warranty Form	GC-58
Section 9.0	**Prevailing Wage**	**GC-59 thru GC-60**
GC 9.1	Prevailing Wage Rates	GC-59

TABLE OF CONTENTS

SECTIONS		PAGE
GC 9.2	No Extra Compensation	GC-59
Special Conditions		**SC-1 thru SC-9**
Technical Specifications		**TS-1 thru TS-129**

Attachment A 2010 Prevailing Wage Rates for Carson City
Attachment B Right of Entry Agreement for access through State Property to well site

Drawing Sheets (23 Sheets)
No. Title

G.1 TITLE SHEET.
G.2 INDEX, ABBREVIATIONS, SURVEY DATA.
G.3 STORMWATER POLLUTION PREVENTION PLAN
G.4 STORMWATER POLLUTION PREVENTION PLAN DETAILS
C1. WATERLINE “PW” & “WST” PLAN AND PROFILE
C2. WATERLINE PLAN AND PROFILE (STA 9+00 TO 17+00)
C3. WATERLINE PLAN AND PROFILE (STA 17+00 TO 24+00)
C4. WATERLINE PLAN AND PROFILE (STA 24+00 TO 27+00)
C5. WELL SECTIONS AND DETAILS.
C6. VAULT AND PARKING SITE PLAN.
C7. VAULT SECTIONS AND DETAILS
C8. CONSTRUCTION DETAILS
C9. CONSTRUCTION DETAILS
C10. CONSTRUCTION DETAILS
C11. CONSTRUCTION DETAILS
C12. CROSS SECTIONS
C13. CROSS SECTIONS
C14. CROSS SECTIONS
E1. ELECTRICAL
E2. ELECTRICAL
E3. ELECTRICAL
E4. ELECTRICAL
E5. ELECTRICAL

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, Contracts Coordinator
Carson City Purchasing and Contracts
201 North Carson Street, Suite 3
Carson City, Nevada 89701
775-887-2133 x30137
FAX 775-887-2107
SScott@ci.carson-city.nv.us

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 30367
FAX No. 775-887-2112
ABurnham@ci.carson-city.nv.us

C. Construction Manager
Mark Brethauer, PE, Senior Project Manager
Carson City Public Works Department
3505 Butti Way
Carson City, Nevada 89701
775-887-2355 x 30364
FAX No. 775-887-2112
MBrethauer@ci.carson-city.nv.us

D. Design Engineer - Civil
Mark Brethauer, PE, Senior Project Manager
Carson City Public Works Department
3505 Butti Way
Carson City, Nevada 89701
775-887-2355 x 30364
FAX No. 775-887-2112
MBrethauer@ci.carson-city.nv.us

E. Design Engineer - Electrical
Gary Barrett, P.E., Senior Electrical Engineer
Brown and Caldwell
3264 Goni Road
Carson City, Nevada 89706
775-883-4118
FAX No. 775-883-5108
gbarrett@brwncald.com

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

END OF DOCUMENT

INSTRUCTIONS TO BIDDERS

IB.1 BIDDING PROCEDURES

A. Pre-bid Conference

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

B. Designated Contacts

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

C. Contract Drawings

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

CONTRACT DRAWING TITLE: Carson City Production Well #50 and 24 inch Water Line Construction

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.

2. 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.: 0910-181
OPENING: April 19, 2010, at 10:10 a.m.
COMPANY NAME:

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

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

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

F. Documents Necessary for Submittal

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

G. Bid Security

1. Each Bid Proposal must be accompanied by a Cashier's check, Certified Check, or Bid Bond acceptable to Carson City in an amount equal to at least five percent (5%) of the Bidder's "Base Bid" Proposal. Said Bid Security shall be payable without condition to Carson City as a guarantee that the Bidder, if awarded the Contract, will promptly execute such Contract in accordance with the Bid Proposal and, in the manner and form required by the Bid Document, and will furnish the required PERFORMANCE and PAYMENT bonds. (Refer to Documents # 2151 and 2152). Should the Bidder refuse to enter into such Contract or fail to furnish such bonds, the amount of the Bid Security may be forfeited to the City as liquidated damages, not as penalty. All checks must indicate the Payee as "Carson City, Nevada" and reflect the Bid Title and Number. Failure to enclose a Bid guarantee with the sealed Bid will cause the Bid to be rejected and not considered.

2. Surety companies issuing bonds must be licensed to issue surety by the State of Nevada Insurance Division pursuant to NRS 683A.090 and issued by an appointed agent pursuant to NRS 683A.280. Bonds issued by an individual surety are not acceptable to the City.

3. The City will have the right to hold the Bid Security of Bidders to whom an award is being considered until either: (a) the Contract has been executed and bonds have been furnished, (b) the specified time has elapsed so that Bids may be withdrawn, or (c) all Bids have been rejected.

H. Quantities

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

I. Compensation

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

J. Schedule of Values

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

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

2. **AFTER AWARD OF BID** Carson City will request a Schedule of Values for any or all item(s) included in the Bid Proposal for the purpose of making partial payments to the Contractor.

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

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

K. Validity of Bid

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

L. Bidders Preference

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

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

M. Bidders Representation

Each Bidder by submitting its Bid represents that:

1. The Bidder, signing the Bid Response and submitting the bid represents that he/she has familiarized himself with the Notice to Contractors, Contract Drawings, Specifications, and Contract Documents and has found them fit and sufficient for the purpose of preparing his/her Bid. By submission of his/her Bid, he/she agrees to all the terms and conditions of the Bid Document and further agrees that no claim will be made against the City, the Construction Manager, or the Design Consultant for any damage that he/she or his/her subcontractors may have suffered due to the inadequacy of his/her Bid on account of any alleged errors, omissions, or other deficiencies in the Notice to Contractors, Drawings, Specifications, or Contract Documents supplied to him/her by the City.

2. The submission of a Bid shall constitute an acknowledgment upon which the City may rely that the Bidder has thoroughly examined and is familiar with the Bid Documents. The Bidder shall in no way be relieved from any obligation with respect to its proposal or to the Contract. No claim for additional compensation will be allowed which is based upon a lack of knowledge of the Contract Documents.

3. The Bidder has inspected the site(s) of the Work and is satisfied, by personal examination or by other means, of the locations of the proposed Work, of the actual conditions, including subsurface conditions, of and at the site(s) of the Work. If, during the course of its examinations, a Bidder finds facts or conditions which appear to be in conflict with the letter or spirit of the Bid Documents before submitting his/her bid, the Bidder shall request the City, in writing, to provide additional information and explanation.

4. Submission of a Bid by a Bidder shall constitute conclusive evidence that the Bidder has relied on his/her own examination of (1) the site of the Work, (2) access to the site, (3) all other data and matters requisite to the fulfillment of the Work and on its own knowledge of existing facilities on and in the vicinity of the site of the Work to be constructed under the Contract, (4) the conditions to be encountered, (5) the character, quality and scope of the proposed Work, (6) the quality and quantity of the materials to be furnished, and (7) the requirements of the Bid, the Drawings and Specifications. The Bidder is aware that soil classifications do not represent any particular stability or drainability characteristics, and are aware that water table levels can vary.

5. The information provided by the City is not intended to be a substitute for, or a supplement to, the independent verification by the Bidder to the extent such independent investigation of site conditions is deemed necessary or desirable by the Bidder.

6. The Bidder, by signing the Bid Proposal, agrees that all material and workmanship on this Project shall meet or exceed OSHA standards and NOSHA standards.

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

   The successful Bidder must obtain a valid Carson City Business License within ten (10) days 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.

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.

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.

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;

13. Any other reason determined, in good faith, to be in the best interest of the City.

IB.4 BID PROTESTS

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

IB.5 BID PREPARATION EXPENSES

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

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

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

END OF INSTRUCTIONS TO BIDDERS

BID PROPOSAL

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that I/We _____

as Principal, hereinafter called Contractor, and _____

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

(state sum in words)_____

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

WHEREAS, the Principal has submitted a bid, identified as **BID # 0910-181** and titled "Carson City Production Well #50 and 24 Inch Water Line Construction"**.**

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: _____

(Seal)

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 # 0910-181
BID TITLE: Carson City Production Well #50 and 24 Inch Water Line Construction

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.

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: Well Equipping and Water Line Work					
BP.1	Mobilization/demobilization and Cleanup. (1.5.10.1)	1	LS		
BP.2	Clearing and Grubbing. (1.5.10.2)	1	EA		
BP.3	Pot-holing and Layout Prior to Commencement of Work. (1.5.10.3)	5	EA		
BP.4	New 6" PVC Water Main. (1.5.10.4)	150	LF		
BP.5	New 12" Water Main. (1.5.10.5)	285	LF		
BP.6	New 24" PVC Water Main and Access Road.(1.5.10.6)	1650	LF		
BP.7	New submersible pump and motor, pitless adaptor and column pipe. (1.5.10.7)	1	LS		
BP.8	Below Grade Pre-Fabricated Steel Well Equipment & Meter Vault, Above Grade Prefabricated Electrical Enclosure & electrical site work and Above Grade Prefabricated Chlorination Enclosure (1.5.10.8)	1	LS		
BP.9	New 4", PVC Electrical Conduit. (1.5.10.9)	285	LF		
BP.10	Traffic Control. (1.5.10.10)	1	LS		
	Schedule A: Subtotal				
Schedule B: Additive Alternates					
BP.11	New 12" C900, DR 18 150 PSI Fusible PVC Water Main. (1.5.11.1)	285	LF		
BP.12	New 4", Fusible PVC Electrical Conduit. (1.5.11.2)	285	LF		
BP.13	Stabilize Subgrade under 12" and 6" Pipe. (1.5.11.3)	1	LF		
BP.14	Stabilize Subgrade Under 24" Pipe. (1.5.11.4)	1	LF		
	Schedule B: Subtotal				
BP.15	**Total Bid Price Schedule A + B**				

BP.16 Total Bid Price Written in Words:

_____

BID PROPOSAL

BP.17 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.18 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.19 DISCLOSURE OF PRINCIPALS:

Individual and/or Partnership:

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

Corporation:

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

BID PROPOSAL

BP.20 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.21 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:
Company Name 3):
Contract Person:
Mailing Address:
City, State, Zip Code:
Complete Telephone Number:
E-Mail Address:

BID PROPOSAL

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. 22

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]**
2008		
2007		

[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.23 **INSTRUCTIONS:** for Subcontractors **exceeding five (5) percent of bid amount.** This information must be submitted with your bid proposal. The bidder shall enter "**NONE**" under "**Name of Subcontractor**" if not utilizing subcontractors exceeding this amount. (This form must be complete in all respects. If, additional space is needed, attach a separate page).

Name of Subcontractor	Address	
Phone	Nevada Contractor License #	Limit of License
Description of work		
Name of Subcontractor	Address	
Phone	Nevada Contractor License #	Limit of License
Description of work		
Name of Subcontractor	Address	
Phone	Nevada Contractor License #	Limit of License
Description of work		
Name of Subcontractor	Address	
Phone	Nevada Contractor License #	Limit of License
Description of work		
Name of Subcontractor	Address	
Phone	Nevada Contractor License #	Limit of License
Description of work		
Name of Subcontractor	Address	
Phone	Nevada Contractor License #	Limit of License
Description of work		

BID PROPOSAL

SUBCONTRACTORS

BP.24 **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.25 **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

BP.26 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 "Production Well 41 Drilling, Construction and Testing Project", contract number 0910-143, 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)

CONTRACT AWARD

Contract Award

CA.1 METHOD OF AWARD

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

CA.2 TIME OF AWARD

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

CA.3 BONDS

A. Bonds Required

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

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

B. Bond Forms

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

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

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

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

CA.4 INSURANCE REQUIREMENTS

A. General

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

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

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

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

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

Contractor is responsible for and must remedy all damage or loss to any property, including property of City, caused in whole or in part by Contractor, any subcontractor or anyone employed, directed or supervised by Contractor**.** Contractor is responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work.

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

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

B. Insurance Coverage

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

1. Final acceptance by the City of the completion of this Contract; or

2. Such time as the insurance is no longer required by the City under the terms of this Contract

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

C. General Requirements

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

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

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

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

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

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

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

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

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

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

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

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

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

D. Commercial General Liability Insurance

Minimum Limits required:

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

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

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

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

E. Business Automobile Liability

Minimum Limit required:

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

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

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

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.

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 6th day of May, 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 "name of contractor" 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. 0910-181, titled "Carson City Production Well #50 and 24 Inch Water Line Construction"** 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, Purchasing & Contracts Coordinator
201 North Carson Street Suite 3
Carson City, NV 89701
775-887-2133 extension 30137 / FAX 775-887-2107
SScott@ci.carson-city.nv.us

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.

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

SAMPLE CONTRACT

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

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

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

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

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

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

CITY may terminate this Contract if CONTRACTOR:

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

Persistently or repeatedly 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;

Persistently 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 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 specified above, and the subsequent failure of the defaulting party within five (5) calendar days of that notice to provide evidence, satisfactory to the aggrieved party, showing that the declared default or breach has been corrected.

Winding Up Affairs Upon Termination:
In the event of termination of this Contract for any reason, the parties agree that the provisions of this paragraph survive termination:

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

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

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

SCOPE OF WORK

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

CONTRACTOR agrees that the Contract Documents for Bid No. 0910-143 include, but not limited to, the Notice to Contractors, Table of Contents, Project Coordination, Instructions to Bidders, Contract Award Information, General Conditions, Special Conditions, Technical Specification, Prevailing Wages, Contract Drawings, and Addenda, if any, herein after referred to as Exhibit A, are intended to be complete and complementary and are intended to describe a complete work. These documents are incorporated herein by reference and made a part whereof.

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

FAIR EMPLOYMENT PRACTICES

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

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

LIMITED LIABILITY

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

FORCE MAJEURE

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

INDEMNIFICATION

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

Except as otherwise provided below, the indemnifying party shall not be obligated to provide a legal defense to the indemnifying party, nor reimburse the indemnified party for the same, for any period occurring before the

indemnified party provides written notice of the pending claim(s) or cause(s) of action to the indemnifying party, along with:

1) a written request for a legal defense for such pending claim(s) or cause(s) of action; and

2) a detailed explanation of the basis upon which the indemnified party believed that the claim or cause of action asserted against the indemnified party implicated the culpable conduct of the indemnifying party, its officers, employees, and/or agents.

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

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

INDEPENDENT CONTRACTOR

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

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

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

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

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

COMPLIANCE WITH LEGAL OBLIGATIONS

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

CONTRACTOR shall procure and maintain for the duration of this Contract any state, county, city or federal license, authorization, waiver, permit, qualification or certification required by statute, ordinance, law, or regulation to be held by **CONTRACTOR** to provide the goods or services of this Contract. **CONTRACTOR** will be responsible to pay all taxes, assessments, fees, premiums, permits, and license required by law. 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.

SAMPLE CONTRACT

WAIVER OF BREACH

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

SEVERABILITY

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

ASSIGNMENT/DELEGATION

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

CITY OWNERSHIP OF PROPRIETARY INFORMATION

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

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

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

PUBLIC RECORDS

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

CONFIDENTIALITY

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

FEDERAL FUNDING

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

SAMPLE CONTRACT

CONTRACTOR certified, by signing this Contract, that neither it not 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 if made pursuant to the regulations implementing Executive Order 12549, Debarment and Suspension, 28 C.F.R. pt. 67, § 67.510, as published as pt. VII of the May 26, 1988, Federal Register (pp.19160-19211), and any relevant program-specific regulations. This provision shall be required of every subcontractor receiving any payment in whole or in part from federal funds.

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

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

LOBBYING

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

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

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

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

PROPER AUTHORITY

The parties hereto represent and warrant that the person executing this Contract on behalf of each party has full power and authority to enter into this Contract. **CONTRACTOR** acknowledges that this Contract is effective only after approval by the Carson City Board of Supervisors and only for the period of time specified in this Contact. 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.

AND ALL SUPPLEMENTAL AGREEMENTS AMENDING OR EXTENDING THE WORK CONTEMPLATED.

ACKNOWLEDGMENT AND EXECUTION:

SAMPLE CONTRACT

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, Purchasing and Contracts Coordinator
201 North Carson Street, Suite 3
Carson City, Nevada 89701
Telephone: 775-887-2133 ext 30137
Fax: 775-887-2107
SScott@ci.carson-city.nv.us

By:_____
Sandy Scott

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. 30367
Fax: 775-887-2164
ABurnham@ci.carson-city.nv.us

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 May 6, 2010, approved the acceptance of the attached contract hereinbefore identified as **CONTRACT No. 0910-181** and titled **"Carson City Production Well #50 and 24 Inch Water Line Construction"**. 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 6th day of May, 2010.

ATTEST:

_____

ALAN GLOVER, CLERK-RECORDER

DATED this 6th day of May, 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 # 0910-181** and titled "Carson City Production Well #50 and 24 Inch Water Line Construction" 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 # 0910-181** and titled "Carson City Production Well #50 and Water Line Construction"

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 day of ,2010

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

WHEREAS, Contractor has by written agreement dated _____, 2010 entered into a contract with the City for **BID # 0910-181** and titled "Carson City Production Well #50 and 24 Inch Water Line Construction" 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 #0910-181** and titled "Carson City Production Well #50 and 24Inch Water Line Construction"

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 day of	**, 2010**

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:

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

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

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

4) Contract Drawing govern over Standard Details

GC 1.4 HEADINGS

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

GC 1.5 DEFINITIONS

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Calendar Day - Every day shown on the calendar.

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

GENERAL CONDITIONS

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

GENERAL CONDITIONS

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

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

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

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

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

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

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

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

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

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

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

Holidays - Legal holidays observed by the City.

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

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

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

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

GENERAL CONDITIONS

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

GENERAL CONDITIONS

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

GC 1.6 ABBREVIATIONS

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

Abbreviations Stand For

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
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

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

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.

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 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.

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.

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 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 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.

Pursuant to NRS 338.060 and 338.070, the Contractor hereby agrees to forfeit, as a penalty to the City, not less than Twenty Dollars ($20) nor more than Fifty Dollars ($50) for each calendar day or portion thereof that each worker employed on the Contract is paid less than the designated rate for any work done under the Contract, by the Contractor or any subcontractor under him/her, or is not reported to the City as required by NRS 338.070.

2.6.12 SAFETY

A. Contractor's Safety Responsibility

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

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

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

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

B. Safety Program

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

C. Safety Supervisor

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

D. Excavation Safety

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

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

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

E. Emergencies

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

F. Safety Violations

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

2.6.13 FIRE PREVENTION AND CONTROL

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

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

2.6.14 ERRORS OR DISCREPANCIES NOTED BY CONTRACTOR

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

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

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

2.6.15 INDEMNIFICATION

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

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

2.6.16 INSPECTIONS

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

2.6.17 CONTRACTOR IS AN INDEPENDENT CONTRACTOR

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

2.6.18 VALUE ENGINEERING PROPOSALS

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

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

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

Submit the following information with each VEP:

1 A statement that the proposal is submitted as a VEP;

2 A statement concerning the basis for the VEP and benefits to the City together with an itemization of the Contract requirements affected by the VEP;

3 A detailed estimate of the cost under the existing Contract and under the VEP;

4 Proposed specifications and recommendations as to how such VEP changes are to be accomplished; and

5 A statement as to the time by which a Contract Change Order adopting the VEP must be issued so as to obtain the maximum cost effectiveness.

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

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

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

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

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

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

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

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.

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

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.

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.

    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. <u>Cash Flow Projection</u>

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 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.

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

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. 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.

GENERAL CONDITIONS

SECTION 4.0 SHOP DRAWINGS AND QUALITY CONTROL/INSPECTIONS

GC 4.1 CONTRACTOR'S RESPONSIBILITIES

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

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

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

GC 4.2 SOURCE OF MATERIALS

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

GC 4.3 TRANSMITTAL PROCEDURES

4.3.1 TRANSMITTAL FORM

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

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

4.3.2 DEVIATIONS FROM THE CONTRACT

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

4.3.3 SUBMITTAL COMPLETENESS

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

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

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

4.3.4 SUBMITTAL PERIOD

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

4.3.5 MATERIAL AND EQUIPMENT SUBSTITUTIONS

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

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

GC 4.4 REVIEW PROCEDURE

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

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

A. <u>No Exceptions Noted (Resubmittal Not Required)</u>

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. <u>Make Corrections Noted (Resubmittal Not Required)</u>

Same as A, except that minor corrections as noted shall be made by the Contractor.

C. <u>Make Corrections Noted (Resubmittal)</u>

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

D. Not Acceptable (Resubmit)
Submitted material does not conform to drawings and specifications in major respects, i.e.: wrong size, model, capacity, or material.

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

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

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

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

GC 4.5 QUALITY CONTROL - GENERAL

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

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

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

4.5.1 QUALITY ASSURANCE INSPECTION

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

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

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

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

4.5.2 PERMIT AND CODE COMPLIANCE INSPECTIONS

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

4.5.3 SAMPLES AND TESTS

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

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

A. Sampling

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

B. Testing

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

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

C. Retesting Costs

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.

GENERAL CONDITIONS

SECTION 5.0 PAYMENT

GC 5.1 GENERAL

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

GC 5.2 PAYMENT FOR PATENTS AND PATENT INFRINGEMENT

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

GC 5.3 PAYMENT OF TAXES

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

GC 5.4 PAYMENT FOR LABOR AND MATERIALS

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

GC 5.5 PARTIAL PAYMENTS

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

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

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

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

a. The Construction Manager shall review the submitted progress billing to verify that it corresponds with the agreement reached at the above mentioned review meeting. If the progress billing is satisfactory, the Construction Manager will process it for payment.

b. If the Construction Manager determines that the progress billing is not satisfactory, then pursuant to NRS 338.525, the City shall, within twenty (20) days of receipt of said progress billing, give written notification to the Contractor of any amount that will be withheld and a detailed explanation of the reason for the withholding. The remainder will be processed for payment.

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

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

5.5.1 PARTIAL PAYMENTS - INCLUSION OF MATERIALS ON HAND

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

(A) be identified in the Special Conditions:

(B) have been delivered and stored at a location, and in the time and manner, specified in this Contract by the Contractor or a subcontractor or supplier for use in the Work; and,

(C) be in short supply or were made specifically for this Contract.

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

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

a. Only equipment or materials which have received favorable review of shop drawings will qualify.

b. Eligible equipment or materials must be delivered and properly stored, protected, and maintained at the job site in a manner favorably reviewed by the Construction Manager.

c. The Contractor's actual net cost for the materials must be supported by paid invoices of suppliers or other documentation requested by the Construction Manager.

GC 5.6 RETENTION

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

GC 5.7 OTHER WITHHOLDS

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

a. Defective work not remedied;

b. A reasonable doubt that the Contract can be completed for the balance then unpaid;

c. Damage to another contractor, third party, or to property;

d. Failure to submit, revise, resubmit, or otherwise conform to the requirements herein for preparing and maintaining a construction schedule;

e. Failure of the Contractor to keep the Work progressing in accordance with its Progress Schedule;

f. Failure to maintain current “As-Built” record drawings;

g. Failure of the Contractor to make proper submissions, as herein specified;

h. Payments due the City from the Contractor;

i. Reduction of Contract Amount because of modifications; or

j. The Contractor's neglect or unsatisfactory prosecution of the Work, including failure to clean up.

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

GENERAL CONDITIONS

SECTION 6.0 CHANGE ORDERS

GC 6.1 GENERAL

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

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

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

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

GC 6.2 DIFFERING SITE CONDITIONS

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

a. Material that the Contractor believes may be hazardous waste that is required to be removed to a Class I, Class II, or Class III disposal site in accordance with provisions of law.

b. Subsurface or latent physical conditions at the site differing from those indicated.

c. Unknown physical conditions at the site of any unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract.

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

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

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

GC 6.3 RESOLUTION OF DISPUTES

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. <u>Notice</u>

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. <u>Records of Disputed Work</u>

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. <u>Submission of Claim Costs</u>

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

D. <u>Claim Meetings</u>

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

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.

c. Equipment rental: For any machinery or equipment, the use of which has been authorized by the Construction Manager, the Contractor will be paid for the use of such machinery or equipment in the manner hereinafter specified, regardless of ownership and any rental or other agreement, if such may exist, for the use of such equipment entered into by the contractor.

Rental rates will be determined as follows:

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

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

2. Attachments (e.g. tractor with ripper and dozer or tractor with loader and backhoe) will be included in the hourly rental rate only when deemed essential to the work as determined by the Construction Manager. When multiple attachments are approved for use and are being used interchangeably, the attachment having the highest rental rate shall be the only on 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:

(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.

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 ARBITRATION

Any controversy or claim arising out of or relating to the performance of these Contract Documents, which cannot be resolved by mutual agreement or mediation, shall be submitted to binding arbitration by the claiming party by filing a Notice of Intent to Arbitrate (demand) within fifteen (15) days of the conclusion of mediation, specified above in GC 6.5, DISPUTES, with the other party and three (3) copies to the American Arbitration Association or the Nevada Arbitration Association. Either party to the Contract Documents may request that any dispute or difference be arbitrated by filing a demand to arbitrate. Said demand shall contain a statement of the disputes, the amount involved, if any, and the remedy sought. Through written mutual consent, the parties may agree to combine all disputes for a single arbitration proceeding during or after substantial completion of the Project. Such arbitration shall be conducted in accordance with the Construction Industry Arbitration Rules (which can be found at www.adr.org) 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.

GENERAL CONDITIONS

SECTION 7.0 CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

GC 7.1 GENERAL

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

GC 7.2 TEMPORARY UTILITIES AND CONSTRUCTION FACILITIES

7.2.1 ELECTRICAL SERVICE

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

7.2.2 WATER

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

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

7.2.3 TEMPORARY LIGHTING

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

7.2.4 HEATING AND VENTILATION

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

7.2.5 SANITARY CONVENIENCES

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

7.2.6 COMMUNICATIONS

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

7.2.7 CONSTRUCTION FACILITIES

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

A. <u>Staging and Falsework</u>

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

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

B. Temporary Enclosures

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

C. Warning Devices and Barricades

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

D. Use of Explosives

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

GC 7.3 CONSTRUCTION CONTROLS

7.3.1 PROTECTION AND RESTORATION OF EXISTING IMPROVEMENTS

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

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

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

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

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

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

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

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

A. Flood Protection

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

7.3.2 PROJECT SECURITY

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

A. Fire Extinguisher

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

B. Temporary Fences

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

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

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

7.3.3 ACCESS ROADS

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

7.3.4 NOISE ABATEMENT

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

Allowable Daytime Noise Levels as measured at the exterior of any given site shall be a noise level of not more than 75 dba Leq from the hours of 7:00 AM to 8:00 PM daily.

Allowable Nighttime Noise Levels as measured at the exterior of any site shall be a noise level of not more than 55 dba Leq from the hours of 8:00 PM to 7:00 AM daily.

Internal combustion engines used on the Work shall be equipped with a muffler of a type recommended by the manufacturer. No internal combustion engine shall be operated without said muffler.

7.3.5 WORKING HOURS

Construction shall be allowed only between the hours of seven (7:00) AM and four (4:00) PM Monday thru Friday (Normal Working Hours) unless otherwise specified in the Special Conditions.

The starting, fueling, maintenance of equipment, and delivery of equipment and materials, and placement or removal of traffic control devices is considered Construction and shall not be allowed outside of the Normal Working Hours. Requests for exceptions to these limitations shall be made in writing to the Construction Manager for consideration in non-sensitive, non-residential areas.

The Contractor may request to work outside the Normal Working Hours by submitting a written request to the Construction Manager at least seventy-two (72) hours in advance of the start of work outside the Normal Working Hours. Permission may or may not be granted by the Construction Manager, with hours noted by the Construction Manager. The Contractor shall be responsible for the costs of any inspection, testing, and additional administration incurred by the City, or its agents and representatives, for work by the Contractor outside the Normal Working Hours defined above, on weekdays in excess of eight (8) hours, or any work on weekends or holidays recognized by the City. Such costs shall be withheld from the succeeding monthly progress payment. Any work specifically required to be performed outside the Normal Working Hours as may be indicated in the Special Conditions, or work required by the Construction Manager, in writing, to be performed outside the Normal Working Hours, is excluded from withholding of payment.

7.3.6 DRAINAGE CONTROL / STORM WATER POLLUTION PREVENTION PLAN

In all construction operations, care shall be taken not to disturb existing drainage patterns whenever possible. Particular care shall be taken not to direct drainage water onto private property. Drainage water shall not be diverted to streets or drainage ways inadequate for the increased flow. Drainage means shall be provided to protect the Work and adjacent facilities from damage due to water from the site or due to altered drainage patterns from construction operations. Temporary provisions shall be made by the Contractor to insure the proper functioning of gutters, storm drain inlets, drainage ditches, culverts, irrigation ditches, and natural water courses. The Contractor shall provide water quality and erosion controls in accordance with the NDEP "Handbook of Best Management Practices" to prevent sedimentation runoff from the Site.

The Contractor shall comply with the National Pollutant Discharge Elimination System (NPDES) regulations for storm water discharges from a construction site and the Stormwater General Permit NVR100000, State of Nevada, Division of Environmental Protection, General Permit. Preparation of a Storm Water Pollution Prevention Plan (SWPPP) and compliance with the permitting requirements shall be the Contractor's responsibility. The Contractor shall submit the required Notice of Intent (NOI) to the NDEP and comply with the SWPPP referenced above. The Contractor shall obtain any required Temporary Permits prior to any discharges. The Contractor shall submit any required Notification of Termination to the NDEP upon completion of construction and final site stabilization, and shall submit to the City copies of all records associated with the permitting requirements. Contractor must submit a copy of the SWPPP permit and plan to the Construction Manager prior to the start of work.

The Contractor shall be responsible for all costs associated with complying with the permit requirements, submitting any required NOI, preparing and complying with the SWPPP, revising the SWPPP, any required submittal of the Notification of Termination, any required discharge permit and any other related costs.

7.3.7 CONSTRUCTION CLEANING

The Contractor shall, at all times, keep property on which work is in progress and the adjacent property free from accumulations of waste material, rubbish, caused by his/her operations. All surplus material shall be removed from the site immediately after completion of the work causing the surplus materials. Spillage resulting from hauling operations along or across existing streets or roads shall be removed immediately by the Contractor. All gutters and roadside ditches shall be kept clean and free from obstructions. Daily cleanup of trash, paper, and small debris subject to movement with winds shall be required**. The Contractor shall reasonably clean the immediate Work Area on a daily basis to reduce risk of personal injury as well as fire hazard.**

7.3.8 DISPOSAL OF MATERIAL

Unless otherwise specified in the Special Conditions, the Contractor shall make his/her own arrangements for disposing of construction waste materials outside the Project Site and the Contractor shall pay any and all dump fees required, except as provided below. If the Contractor arranges to dispose of construction waste materials on private property, he/she shall first obtain written permission from the property owner on whose property the disposal is to be made in which the City is absolved from any and all liability and responsibility in

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 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 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 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.

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 (on a form provided by the Construction Manager) to include type, size, and dimensions, material, location and elevation of the underground utilities, referenced to the Surveyor's lay out stakes for each pothole. The Contractor shall provide to the Construction Manager, all data, and shall identify to the Construction Manager any facilities which conflict with the Work on the day the pothole is performed. Carson City will not be responsible for any damages, delays or standby time caused by the Contractor's failure to perform potholing prior to commencement of the Work, failure to provide the data or identify the conflicts when specified, or failure to locate services, laterals or points of connections.

Carson City will be responsible for repairs, damages and standby time caused the Contractor due to non-marking, mis-marking or mis-locating, as defined in NRS 455.082, of the City's main line water mains, reclaimed water mains, sanitary sewer main lines and storm drains. Compensation to the Contractor for such repairs, damages or standby time shall be calculated on the basis of GC 6.4.3, Force Account Payment. NOTE: This provision does not apply to service laterals/connections unless the Contractor can show he/she used diligence in trying to locate each service.

The Contractor shall not interrupt the service function or disturb the support of any utility without authority from the utility owner. All valves, switches, manholes, vaults, and meters shall be maintained readily accessible for emergency shutoff or access. In case it should be necessary to move or temporarily maintain the property of any utility, the cost of which is not required to be borne by the owner thereof, the Contractor shall bear all time required and all expenses incidental to the removal or temporary maintenance of such property in a manner satisfactory to the owner thereof. The work necessary to the raising, lowering, or relocating of a utility may be done by the owner of the utility or by the Contractor, at the option of the utility owner. All work shall be in accordance with the utility owner's standards, and shall be at the Contractor's time and expense unless otherwise expressly provided for in the Special Conditions.

The Contractor shall repair or replace all utilities damaged or destroyed due to his/her operations, even in the event such damage or destruction occurs after backfilling or is not discovered until after completion of backfilling. The Contractor shall resolve all crossing and clearance problems with the utility company concerned and the Construction Manager. The right is reserved to the State, County, City, and owners of private utilities and franchises to enter at any time upon any street, alley, right-of-way, or easement for the purpose of making changes in their property made necessary by the Work and for the purpose of maintaining and making repairs to their property.

In cases where water or sewer mains, or service connections thereto, are accidentally broken or, with the prior approval of the Construction Manager, are intentionally cut by the Contractor, they shall be fully repaired to City specifications and returned to service within four (4) hours, or sooner if deemed necessary by the Construction Manager. The Contractor is to make these repairs a priority over other portions of the Work.

At all times allow the Fire Department access to fire hydrants. Do not place materials or other obstructions closer to a fire hydrant than permitted by ordinance, rules, or regulations or within fifteen (15) feet of the fire hydrant in the absence of such ordinances, rules, or regulations.

GC 7.11 CONTAMINATED GROUNDWATER and/or SOIL

Contaminated groundwater and/or soil may exist anywhere within the Project limits. If contaminated groundwater and/or soil are encountered during construction, the Contractor must act in accordance with all applicable Federal, State, and local laws and Nevada Administrative Code 445A.347, which requires the Nevada Department of Environmental Protection be notified within twenty-four (24) hours of the encounter at (775) 687-4670.

GC 7.12 DUST CONTROL

The Contractor is responsible for the control of dust originating from any and all of the Contractor's construction operations either within or outside of the Work Area at all times in accordance with Federal, State and local laws, at the Contractor's expense. In areas where fugitive dust is a nuisance, the Contractor shall, as often as necessary, wet down the area to prevent dusty conditions. This includes weekends and holidays. The Contractor shall contact NDEP to determine if a Ground Disturbance Permit is required.

GC 7.13 BY-PASS PUMPING OF SANITARY SEWER

GENERAL CONDITIONS

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.

GENERAL CONDITIONS

SECTION 8.0 CONTRACT COMPLETION, O&M MANUALS

GC 8.1 INTERMEDIATE COMPLETION

When an intermediate milestone is specified in the Contract Documents, and the Contractor considers that a Work element, section, or division has met the intermediate completion stage requirements, the Contractor shall notify the Construction Manager in writing. Upon receipt of the notification, the Construction Manager and the City will make inspection to determine if the Work element, section or division is sufficiently complete in accordance with the Contract Documents to determine its acceptability for Intermediate Completion and for determination of any other items which do not meet the terms of the Contract so the City can occupy or utilize the Work for its intended use. Upon verification that the Work element, section, or division meets the contractual requirements for Intermediate Completion, the Construction Manager shall prepare a Notice of Intermediate Completion letter for the City's signature. The notice shall establish the date of Intermediate Completion, the responsibilities of the City and Contractor for maintenance, utilities, and damage to the subject Work. If items are found which prevent such use or occupancy, the Construction Manager shall notify the Contractor of such items.

Upon the completion of such corrective work, the Contractor shall so notify the Construction Manager in writing. The Contractor agrees to pay the City's actual costs including, but not limited to, charges for engineering, inspection and administration incurred due to the Contractor's failure to complete the punch list work within the time period specified.

Unless otherwise specified under Special Conditions, no partial acceptance of any portion of the Work will be made and no acceptance other than the final acceptance of the overall completed Project will be made. No review pertaining to specific parts of the Project shall be construed as final acceptance of any part until the overall final acceptance by the City is made. Final payment for completed portions of Work will not be made until final acceptance of the total Work.

GC 8.2 SUBSTANTIAL COMPLETION

When the Contractor considers that all Work required by this Contract including equipment start-up and testing is substantially complete, the Contractor shall notify the Construction Manager in writing. Upon receipt of the notification, the Construction Manager and the City will make inspection to determine if the Work is sufficiently complete in accordance with the Contract Documents to determine its acceptability for Substantial Completion and for determination of any other items which do not meet the terms of the Contract so the City can occupy or utilize the Work for its intended use. If items are found which prevent such use or occupancy, the Construction Manager shall notify the Contractor of such items. Upon verification that the Project is substantially complete, the Construction Manager shall prepare a Notice of Substantial Completion letter for the City's signature. The notice shall establish the date of Substantial Completion and the responsibilities of the City and Contractor for maintenance, utilities, and damage to the Work.

GC 8.3 CONSTRUCTION COMPLETION, FINAL INSPECTION, PAYMENT, AND ACCEPTANCE

When the Contractor considers that all Work including record drawings, operation and maintenance manuals, and cleanup has been completed in accordance with the terms of the Contract, the Contractor shall notify the Construction Manager. Upon notification, the Construction Manager and the City will make the pre-final inspection to determine the actual status of the Work in accordance with the terms of the Contract. If materials, equipment, or workmanship are found which do not meet the terms of the Contract, the Construction Manager shall prepare a final punch list of such items and submit it to the Contractor. Following completion by the Contractor of the corrective work, required by the punch list, the Construction Manager shall notify the City that the Work has been completed in accordance with the Contract. A final inspection will be made to determine the acceptability of the Work. After completion of the Work, but prior to its acceptance by the City, the last partial payment will be made to the Contractor.

After receipt of the last partial payment, but prior to acceptance of the Work by the Carson City Board of Supervisors or Carson City Regional Transportation Commission, the Contractor shall send a letter to the Construction Manager submitting lien releases for all material, or labor for any work covered by this Contract. The letter shall state that acceptance of the final payment described below shall operate as and shall be, a release to the City, the Construction Manager, the Design Consultant, and their duly authorized agents, from all claims and/or liability to the Contract arising by virtue of the Contract related to those amounts. Disputed Contract claims in stated amounts previously filed as provided in GC 6.3.2, Claims, may be specifically excluded by the Contractor from the operation of the release.

Following receipt of all required submittals, the Construction Manager's written statement that construction is complete, and recommendation from the City's representative to accept the Project, the Construction Manager shall prepare an agenda item for the Carson City Board of Supervisor's or Carson City Regional Transportation Commission's acceptance of the completed Work and a Notice of Completion.

Following the acceptance by the Carson City Board of Supervisors or the Carson City Regional Transportation Commission of the completed Work embraced in the Contract, the City will cause to be recorded in the office of the County Recorder a Notice of Completion.

Thirty (30) days after recording the Notice of Completion of the Work involved in the Contract, the City will pay the Contractor such sums of money as may be due the Contractor including all sums retained but excluding such sums as have previously been paid the Contractor. This payment will constitute the final payment to the Contractor under this Contract.

GC 8.4 OPERATION AND MAINTENANCE MANUALS

Prior to the delivery and installation of any item of machinery or equipment, the Contractor shall submit one (1) copy of the Operation and Maintenance Manual(s) as required by the Technical Specifications. The manual(s) will be reviewed by the Construction Manager and/or Design Consultant for content and the Construction Manager will advise the Contractor within five (5) working days of receipt if the manual is acceptable for the delivery and installation of the equipment or machinery. No equipment or machinery shall be tested or installed if the general content of the manual is found to be deficient. The final Operation and Maintenance Manuals, three (3) copies, must be submitted and favorably reviewed prior to final acceptance.

GC 8.5 EQUIPMENT START-UP

After all acceptance tests have been completed by the Contractor, but prior to final acceptance, the Contractor shall recheck all equipment for proper alignment and adjustment, check oil levels, relubricate all bearing and wearing points, and assure that all equipment is in proper condition for regular continuous operation. Final start-up of equipment requires forty-eight (48) hours advance notice to the Construction Manager and coordination with the user department of the City. Start-ups shall only occur Monday through Thursday.

GC 8.6 FINAL CLEAN UP

At the completion of the Work and before final inspection, the Contractor shall clean the Work Area, material sites, adjacent property and streets and all grounds occupied by the Contractor in connection with the Work of all rubbish, excess and waste materials, as well as all his/her tools, construction equipment, machinery and temporary facilities. All parts of the Work shall be left in a neat and clean condition. If the Contractor fails to clean up at the completion of the Work, the City may do so and the cost shall be charged to the Contractor.

GC 8.7 WARRANTY OF TITLE

No material, supplies, or equipment for the Work under this Contract shall be purchased subject to any chattel mortgage, security agreement, or under a conditional sale or other agreement by which an interest therein or any part thereof is retained by the seller or supplier. The Contractor warrants clear title to all material, supplies, and equipment installed or incorporated in the Work and agrees upon completion of all work to deliver the premises, together with all improvements and appurtenances constructed or placed thereon by the Contractor, to the City free from any claim, liens, security interest, or charges, and further agrees that neither the Contractor nor any person, firm, or corporation furnishing any materials or labor for any work covered by this Contract shall have any claims, liens, security interests or charges against this Project, provided that this shall not preclude the Contractor from installing metering devices or other equipment of utility companies, the title of which is commonly retained by the utility company. Nothing contained in this Section, however, shall defeat or impair the right of such persons furnishing materials or labor under any bond given by the Contractor for their protection or any right under any law permitting such persons to look to funds due the Contractor in the hands of the City. The provisions of this Section shall be inserted in all subcontracts and material contracts, and notices of its provisions shall be given to all persons furnishing materials for the work when no formal contract is entered into for such materials.

GC 8.8 RECORD DRAWINGS

The Contractor shall keep at the Site a copy of the Contract drawings and specifications, including addenda and change orders, to which the Design Consultant, Construction Manager, and City shall have access at all times.

The Contractor shall maintain one (1) set of specifications and full size drawing prints and mark thereon in red any and all deviations from plan dimensions, elevations, or orientations, and all changes from addenda, change orders, and clarifications. Marked prints shall be updated at least weekly and shall be available to the City for review. Prior to Final Acceptance by the City, the Contractor shall submit the record Drawings to the Construction Manager in the manner and format specified in the Special Conditions.

GC 8.9 WARRANTY

GENERAL CONDITIONS

The Contractor hereby agrees to make, at its own expense, all repairs or removals and replacements necessitated by defects in materials or workmanship supplied under the terms of this Contract, and to pay for any damage to other works resulting from repairs or removals and replacements of such defects which become evident within one (1) year after the date of Substantial Completion of the Project by Carson City or within such longer period of time as may be prescribed by law or by the terms of any applicable technical specification. The Contractor further assumes responsibility for a similar guarantee for all work and materials provided by subcontractors or manufacturers of packaged equipment components. The Contractor also agrees to indemnify, defend, and hold the City, and it's officers, agents, employees, and volunteers harmless from liability of any kind arising from damage due to said defects.

The Contractor shall execute and submit a completed Warranty Form in the format as appended to this section for the Work. The Warranty Form shall be submitted prior to the final acceptance of the Project or within five (5) days of the occupancy or use of a portion of the Work, whichever is applicable.

The Contractor shall, upon the receipt of written notice from the City, promptly make all repairs or removals and replacements arising out of defective materials, workmanship, or equipment. The City is hereby authorized to make such repairs or removals and replacements, and the Contractor and its Surety shall be liable for the cost thereof, if five (5) days after receipt of such written notice to the Contractor, the Contractor has failed to make or undertake the repairs or removals and replacements with due diligence. In case of emergency, where in the opinion of the City delay could cause serious loss or damage, repairs or removals and replacements may be made without notice being sent to the Contractor, and the expense in connection therewith shall be charged to the Contractor, and its Surety shall be liable for the cost thereof. Such action by the City shall not relieve the Contractor of the guarantees required by this Section or elsewhere in the Contract Documents.

This Section does not in any way limit the warranty on any items for which a longer warranty is specified or on any items for which a manufacturer or supplier gives a warranty for a longer period. The Contractor agrees to act as a co-guarantor with such manufacturer or supplier and shall furnish the City all appropriate guarantee or warranty certificates upon completion of the Work. No warranty period, whether provided for in this Section or elsewhere, shall in any way limit the liability of the Contractor or his/her sureties or insurers under the indemnity or insurance provisions of these General Conditions.

Prior to the expiration of the Warranty period, the City reserves the right to hold a meeting with the Contractor. The purpose of the meeting would be to review warranties, bonds, and maintenance requirements and determine required repair or replacement requirements of defective items.

For the purpose of this paragraph, acceptance of the Work or a portion of the Work by the City, shall not extinguish any covenant or agreement on the part of the Contractor to be performed or fulfilled under this Contract which has not, in fact, been performed or fulfilled at the time of such acceptance. All covenants and agreements shall continue to be binding on the Contractor until they have been fulfilled.

GENERAL CONDITIONS

WARRANTY FORM

Warranty For

_____(Project/Component)

_____(Location)

We hereby guarantee the _____(Project/Component)_____ that we have constructed for a period of one (1) year from _____(Date)_____ the date of Substantial Completion of the Work set by Carson City.

The following items are excluded from the provisions of this warranty:

We agree that if any of the material or equipment should fail due to any reason other than improper maintenance or improper operation, if any pipe or appurtenances should develop leakage, or if any settlement of fill or backfill occurs, or should any portion of the Work fail to fulfill any of the requirements of the Contract Documents, we will, within five (5) days of receipt of written notice of such defects, commence to repair or replace the same together with any other work which may be damaged or displaced in so doing.

In the event of our failure to comply with the above mentioned conditions within a reasonable time after being notified, or should the urgency of the case require repairs or replacements to be made before we can be notified or respond to notification, we do hereby authorize Carson City, to proceed to have the defect repaired and made good at our expense, and we will pay the cost therefor upon demand.

The warranty provided herein shall not be in lieu of, but shall be in addition to any warranties or other obligations otherwise imposed by the Contract Documents and by law.

Contractor:

Signed:

Title:

Date:

GENERAL CONDITIONS

SECTION 9.0 PREVAILING WAGE

GC 9.1 PREVAILING WAGE RATES

A. The Contractor and subcontractors shall be bound by and comply with all federal, state and local laws with regard to minimum wages, overtime work, hiring and discrimination, including Chapter 338 of the NRS, which is entitled, "Public Works Projects." The Contractor shall ensure that all employees on the work site are paid in accordance with the CURRENT PREVAILING WAGE RATES AS APPROVED BY THE STATE LABOR COMMISSIONER, whenever the actual value of the Contract totals One Hundred Thousand Dollars ($100,000) or more, or when required by the Special Conditions. A copy of the rates are attached hereto and included herein. If a Change Order causes a Contract to exceed One Hundred Thousand Dollars ($100,000), the State Labor Commissioner may audit the entire Contract period.

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

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

B. Posting of Minimum Wage Rates - In accordance with NRS, Chapter 338, Section 338.020, the Contractor shall post the hourly and daily rate of wages to be paid to each of the classes of mechanics and workers on the site of Work of this Contract in a place generally visible to the workers.

C. Pursuant to NRS 338.060 and 338.070, the Contractor hereby agrees to forfeit, as a penalty to the City, not less than Twenty Dollars ($20) nor more than Fifty Dollars ($50) for each calendar day or portion thereof that each worker employed on the Contract is paid less than the designated rate for any work done under the Contract, by the Contractor or any subcontractor under him/her, or is not reported to the City as required by NRS 338.070.

D. The Contractor and each subcontractor shall keep or cause to be kept an accurate record showing the name, the occupation and the actual per diem, wages and benefits paid to each worker employed by him/her in connection with the public Work. The General Contractor shall collect the wage reports from the Sub-Contractors and ensure the receipt of a certified copy of each weekly payroll for submission to the City as one complete package.

E. The record must be open at all reasonable hours to the inspection of the City, and its officers and agents. A copy of the record for each calendar week for the General Contractor and all Sub-Contractors must be sent to the City by the General Contractor no later than one (1) week after the end of the week. The copy must be open to public inspection as provided in NRS 239.010.

F. The Contractor and all subcontractors hereby agree not to hinder on-site interviews of the Contractor's or subcontractor's workers by the Construction Manager or his/her representative to verify that the workers are being paid the prevailing wage rates.

G. It is unlawful for any Contractor in connection with the performance of work under a contract with the state, or any of its political subdivisions, when payment of the Contract Price, or any part of such payment, is to be made from public funds, to refuse to employ or to discharge from employment any person because of his/her race, color, creed, national origin, sex, sexual preference or age, or to discriminate against a person with respect to hire, tenure, advancement, compensation or other terms, conditions or privileges of employment because of his/her race, creed, color, national origin, sex, sexual preference or age. The Contractor agrees to insert this provision in all subcontracts hereunder except subcontracts for standard commercial supplies or raw materials.

GC 9.2 NO EXTRA COMPENSATION

All work necessary to be performed after regular working hours, on Sundays or Legal Holidays, shall be performed without additional expense to the City. In case of extra work under the provisions of GC 6.4, MODIFICATION PROCEDURES, no additional payment will be made to the Contractor because of the payment by him/her of overtime

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

1 SPECIAL CONDITIONS:

1.1 SCOPE OF WORK:

Carson City is accepting sealed bids for all labor, materials, tools and equipment necessary to extract water from a new municipal well located in Carson City and the installation of approximately 1,700 feet of new 24" PVC water line. This project will include providing and installing all required components such as all earth work, plumbing, concrete, asphalt, electrical conduits and concrete pads for the complete installation of a new, underground, prefabricated pump control equipment vault, above ground prefabricated chlorination system and above ground prefabricated electrical control cabinet. The Contractor will install a new Pit-less Adaptor and a City provided submersible pump/motor assembly. 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.

1.2 TIME OF PERFORMANCE:

This Well shall be ready for start up by August 15, 2010.

1.3 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.

1.4 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.

1.4.1 Instructions to Bidders:

The following provisions amend or supplement section Instructions to Bidders of the Contract for Installation of the Well #50 and Waterline Construction Project.

1.4.2 Contractor Delivery Acceptance:

All equipment listed in the special conditions section under “Materials Being Provided By Carson City” shall be provided to the Contractor directly by Carson City. The Contractor shall coordinate the pick up of these materials with the Construction Manager. The Contractor shall provide dry temporary storage off-site for any equipment being provided by Carson City in accordance with the supplier’s requirements for such storage, or the materials may be stored at the Public Works Department on Butti Way until the site is ready for such equipment.

A. At the time of pick up of such equipment by the Contractor, the Project Inspector and Contractor shall jointly inspect the condition of each piece of equipment. The Contractor shall record the condition of the received equipment and shall take pictures of the delivered equipment/materials. Unless the Inspector, or Contractor, determines that the equipment components are damaged, or otherwise unacceptable for installation by the contractor, the equipment shall become a part of this Contract at the conclusion of delivery acceptance inspections as if it has been furnished by the Contractor. Contractor shall be responsible for the care and protection of the furnished equipment until final acceptance.

B. The Contractor will be responsible for and coordinate shipment, delivery, storage requirements and all other arrangements necessary to deliver and install all equipment furnished under this contract to the construction site.

C. At the request of the Contractor, Carson City will provide the original installation manual(s) prepared for each item and/or all equipment along with the original operation and maintenance manual prepared by the manufacturer. Correcting and repairing any damage resulting from the Contractor’s mishandling of this equipment shall be the sole responsibility of the Contractor.

D. The Contractor shall coordinate directly with the supplier in the troubleshooting of any problems identified during the testing and commissioning of owner provided equipment. The supplier will correct any problems identified in the equipment during installation, testing, or commissioning, provided the problem is not in any way due to the Contractor’s actions from installing or testing of the equipment.

1.4.3 Contractor Responsibilities:

A. The Contractor shall be prepared to remove all coverings, containers, or crates, as necessary from new equipment.

B. The Contractor shall store all owner provided equipment in accordance with Manufacturer recommendations. The Contractor’s insurance shall cover the cost of the owner furnished equipment after a delivery acceptance inspection has been completed.

C. The Contractor shall install Owner-furnished equipment and materials as shown and specified, and in accordance with the Supplier-provided installation instructions.

D. The Contractor shall test and commission the owner furnished equipment.

E. The Contractor shall oversee the troubleshooting of any problems identified in the owner furnished equipment installation during testing and commissioning. The Contractor shall request assistance directly from the Supplier if problems occur with the owner furnished equipment.

1.4.4 GC 2.6.8, Permits:

Add the following:

The Contractor shall obtain a NDEP Groundwater Discharge Permit prior to pumping any groundwater. The Contractor should expect to encounter ground water, or excess moisture as shallow as 24” below finish grade when performing trench excavations. The contractor should expect to encounter leaking storm drains, rock fill roadway stabilization and poor quality support soils when performing trench excavations.

Special Conditions

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.

1.4.5 GC 3.7, City-Furnished Materials:

The City will provide the following;

1. A new Submersible Pump and motor assembly (column pipe and all electrical is by Contractor).

Contractor shall notify Construction Manager when ready for pick up at the Corporate Yard on Butti Way. See Contractor Delivery Acceptance and Contractor Responsibility Instructions in these Special Conditions.

1.4.6 GC 3.11, Construction Schedules:

A Construction Schedule is not required.

1.4.7 GC 3.13, Liquidated Damages:

Add the following:

Liquidated damages shall be $1,000.00 per day for failure to complete the work by the dates specified in the contract.

1.4.8 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 4(four) separate submittal packages as indicated below.

The following items, including, but not limited to, are required submittals for the Carson City Municipal Well #50 and Waterline Construction Project;

Construction Schedule
Schedule of Values
Permits
NOI for Storm Water Discharges
Traffic Control Plan
Concrete and Grout Mix Design
Asphalt Mix Design
Aggregates
Bedding Material
Reinforcing Steel
Service Saddles and Corporation Valves
Valve Boxes and Covers
Warning Tape
Couplers
Locating Wire
Pipe Bedding Material
All Pipe Fittings and Appurtenances
Re-bar
Polyethylene Pipe
Water Pipeline Testing and Disinfection
Pre-cast Concrete Vaults
Metal Structures and Miscellaneous Metal Works Shop Drawings
Anchor Bolts
Shop Drawings for Prefabricated Pump Control Station Package

Shop Drawings for Prefabricated Chlorination System Package
Shop Drawings for Prefabricated Electrical Control Panel Package
Warning and Information Signs
Pipes, Valves, Fittings and restraints (Include all type of pipes, fittings, and Valves)
Pipe Supports
Pump control and check valves
Air and Vacuum Valves
Raceways Boxes and Supports
Street Light
Wire and Cable
Grounding Rods
Equipment and System Performance and Operational Testing
Startup and Commissioning
Electrical testing
Record Drawings

1.5 SPECIAL PROVISIONS:

1.5.1 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.

1.5.2 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.

1.5.3 GC 7.5, Project Signs:

A project sign is not required for this Project.

1.5.4 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.

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.

1.5.5 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 under-ground 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.

1.5.6 Geotechnical Investigations:

A geotechnical investigation was NOT performed for either project location; however, the contractor may request a copy of the well drillers report for the new well. The Contractor should expect to encounter ground water, or excess moisture as shallow as 24" below finish grade when performing trench excavations. The Contractor should expect to encounter leaking storm drains, rock fill roadway stabilization and poor quality support soils when performing trench excavations.

1.5.7 Project Coordination:

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

Access to the Equipment Vault site shall be from Bigelow Drive via the 50' easement, which shall be maintained throughout the construction period. The contractor shall not disturb any area out side the "Limits of Construction" as shown on the plans.

The Contractor shall access the well head side of the project via the State Prison System by use of the main entry on Snyder Avenue. The Contractor shall make all arrangements necessary at the Prison Farm Guard shack for all work activities that require access through State property. Work at the site shall not exceed the limits of construction as shown in the State Easement that has been made a part of this document.

1.5.8 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.

1.5.9 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 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.

1.5.10 Description of Bid Items and Basis for Payment of the Well #50 Project:

1.5.10.1 Well #50 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 lump sum 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.

1.5.10.2 Clearing and Grubbing:

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 removal and disposal of all brush and debris located with the Limits of construction area as identified on the plans, and all other miscellaneous items per the drawings and specifications.

1.5.10.3 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 7.7.10 and 1.5.11.3 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.

1.5.10.4 New 6” PVC Flush to Waste 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 6” PVC and steel pipe, including all excavation, bedding and backfill material, fittings and valves, thrust blocks, restraints, line location wire and warning tape, angle point markers, air release valves, compaction, rip-rap, SWPP permitting and all other miscellaneous items per the drawings and specifications.

1.5.10.5 New 12” 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 water line pipe, DR 14, for the pipeline profile stations 0+33.1 to 2+60.1 as shown on sheet C1, including all excavation, bedding and backfill material, fittings and valves, steel sleeve, thrust blocks, restraints, line location wire and warning tape, angle point markers, air release valves, compaction, by-pass pumping, SWPP permitting and all other miscellaneous items per the drawings and specifications.

1.5.10.6 New 24” 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 a new 24” PVC water line pipe, DR 21, including all excavation, bedding and backfill material, fittings and valves, thrust blocks, restraints, line location wire and warning tape, angle point markers, air release valves, compaction, asphalt repair, new access road with type II surface, all drainage features and all other miscellaneous items per the drawings and specifications.

1.5.10.7Installation of New Submersible Pump and Motor assembly:

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 and shall include the cost for all equipment, material, tools, labor necessary to install the owner provided Submersible Pump, motor, pitless adaptor and contractor provided column pipe, wire, sounding probe and polyethylene tube and all other appurtances for a complete installation as per the Drawings and Specifications.

1.5.10.8 New Underground Packaged Well Control & Meter Station, Above Grade Packaged Electrical, Telemetry & Control Cabinet and Above Grade Packaged Sodium Hypochlorite Feed Unit:

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 and shall include all labor, tools, equipment and materials necessary to provide and install one new underground packaged steel equipment vault including all excavation, new concrete footings, slabs, gravel, access hatch, sample hydrants, all site work, all mechanical and plumbing connection to new 24” water line and all appurtances as per the Drawings and Specifications.

C. Payment for this item shall also include all labor and materials necessary to install and furnish one packaged electrical control cabinet and all related components including electrical distribution to the new equipment vault, displays, control equipment, lighting, instruments, outlets, equipment disconnects, generator connection, trenching and backfill, conduit and sweeps, vaults, grounding rods, seals, hangers, concrete pads, telemetry support equipment enclosure, area light, spare conduits, Electrical AcceptanceTesting, and all other items, complete and in place as per the drawing and specifications.

D. Payment for installing this item shall also include all labor, equipment and materials and tools necessary to install all components of the new packaged chlorination system, complete and in place as per the plans and specifications.

1.5.10.9 New 4” Schedule 40 PVC Electrical Conduit:

A. Measurement for payment of this item will be on a lineal Foot basis.

B. Payment for this item shall be at the unit price named in the Proposal Summary and shall include all labor and materials necessary to install and furnish the 4” Schedule 40 PVC electrical conduit from the new Control Cabinet to the new Pit-less adaptor, including all trenching and backfill, conduit and sweeps, locator tape, pull boxes and by-pass pumping as required to provide electrical power to the new well pump and motor, complete and in place as per the drawing and specifications.

1.5.10.10 Traffic Control:

A. Measurement for payment of this item will 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 all traffic control required to complete the Work within all City Right-of-Way locations.

1.5.11 Additive Alternates:

1.5.11.1 New 12” Fusible 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 C900, DR 14 Fusible PVC ONLY for the pipeline profile stations 0+33.1 to 2+60.1 as shown on sheet C1 and shall include all required excavation, bedding and backfill material, fittings, restraints, line location wire, air release valves and all other miscellaneous items as required for this type of installation and as per the drawings and specifications.

1.5.11.2 New 4” Schedule 40 Fusible PVC Electrical Conduit Work:

A. Measurement for payment of this item shall be on a lineal foot basis.

B. Payment for this item shall be at the unit price named in the Proposal Summary and shall include all labor and materials necessary to install and furnish the 4” electrical conduit using 4” Schedule 40 Fusible PVC ONLY from the new Control Cabinet to the new Pit-less adaptor, including all trenching and backfill, conduit and sweeps, locator tape and pull boxes (where appropriate) to provide electrical power from the electrical control cabinet to the new well pump and motor, complete and in place as per the drawing and specifications.

1.5.11.3 Stabilize Sub-Grade under 12 inch and smaller Pipe:

A. Measurement of this item will be per Linear Foot of sub-grade stabilization under pipe bedding. Quantities are estimated and payment will be made for actual Work performed as directed by the Construction Manager.

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 imported stabilizing material, fabric, and all other work, labor, equipment and materials necessary for a complete installation.

1.5.11.4 Stabilize Sub-Grade Under 24 inch Pipe:

A. Measurement of this item will be per Linear Foot of sub-grade stabilization under pipe bedding. Quantities are estimated and payment will be made for actual Work performed as directed by the Construction Manager.

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 imported stabilizing material, fabric, and all other work, labor, equipment and materials necessary for a complete installation.

1.6 AMENDMENTS TO THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION:

1.6.1 There are no amendments to the standard specifications.

CARSON CITY PURCHASING & CONTRACTS
TECHNICAL SPECIFICATIONS

Document No. 1005 Operating and Maintenance Information (4/16/02)

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 the following items of manufacturer's equipment, parts, and information.

2. Preventive Maintenance Procedures:

2.1 These instructions shall consist of the equipment manufacturer's recommended steps and schedules for maintaining the equipment including, but not limited to, lubrication information, control diagrams, start-up procedures and operating procedures.

3. Overhaul Instructions:

3.1 These instructions shall consist of the manufacturer's directions for the disassembly, repair and reassembly of the equipment and any safety precautions that must be observed while performing the work.

4. Parts List:

4.1 This list shall consist of the manufacturer's numbered list of the parts which make up the item of equipment described.

5. Spare Parts List:

5.1 This list shall consist of the manufacturer's recommendation of number of parts which should be stored by Carson City and any special storage precautions which may be required.

6. Specific Information:

6.1 When items of information not included in the above list are required, they will be provided as described in the specifications for the equipment.

7. Transmittal Procedure:

7.1 Three (3) copies of the specified operating and maintenance information shall be provided. The information shall be organized in binders in numerical order by the specification number assigned in the project manual. The binders shall be provided with a table of contents and tab sheets to permit easy location of desired information.

7.2 If 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.

8. Payment:

8.1 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.

9. Field Changes:

9.1 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

CARSON CITY PURCHASING & CONTRACTS
TECHNICAL SPECIFICATIONS

DOCUMENT No. 1006 ROAD REPAIR (3/19/10)

1. General:

1.1 This section specifies the requirements for repair and replacement of paved and unpaved roads, approaches and driveways which have been cut, damaged or removed during construction to their original or better condition. At the end of each working day, all open trenches within operating (open to traffic) paved roadways or driveways shall be backfilled and a temporary patch of cold, road-mix asphalt concrete shall be installed unless otherwise specified in these Contract documents or authorized by Construction Manager. At the end of each working day, all open trenches within operating (open to traffic) unpaved areas shall be backfilled to match existing grade. During construction and prior to final surfacing, Contractor shall diligently maintain all temporary trench surfacing repairs to maintain a safe surface condition for the public traffic. Prior to completion of the Work, all temporary asphalt concrete pavement shall be removed and final paving shall be placed, and all unpaved areas shall be repaired as described below.

2. Asphalt Pavement Repairs:

2.1 Asphalt pavement structural section shall consist of Type 2, Class B, Aggregate Base material per Section 200.01.03, Crushed Aggregate Base, of the Standard Specifications, compacted to 95% relative density overlaid with Type 3, PG 64-22 Plantmix Bituminous Pavement at depths as specified on the drawings. Final asphalt concrete pavement and repairs shall be as specified in Document No. 4007 Asphalt Concrete Pavement, of these Technical Specifications.

2.2 Recycled Aggregate Base will not be allowed in any public roadway.

3. Gravel Surface Roadway and Driveway Repairs:

3.1 Unpaved, gravel surfaced roadways and driveways shall be repaired to match existing conditions, but at a minimum four (4) inches thick section of Type 2, Class B, Crushed Gravel Base per Section 200.01.03 of the Standard Specifications, compacted to 95% relative density.

3.2 The subgrade shall be graded and shaped as required to construct the crushed gravel base surface. The subgrade shall be compacted to 90% relative density.

3.3 After placing, shaping, and compacting of the crushed gravel base, the finished surface shall be one-half (½) inch above the adjacent surface.

4. Asphalt Surface Driveways:

4.1 Asphalt surfaced driveways shall be repaired to match the existing driveway structural section. The asphalt pavement shall be as specified in Document No. 4007 Asphalt Concrete Pavement of these Technical Specifications.

4.2 Subgrade preparation and crushed gravel base shall be as indicated for gravel surface driveways. The aggregate base shall be coated with prime coat prior to installation of the asphalt surface.

END OF DOCUMENT 1006

CARSON CITY PURCHASING & CONTRACTS
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

CARSON CITY PURCHASING & CONTRACTS
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.

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 10.1.7 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.

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:

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

CARSON CITY PURCHASING & CONTRACTS
TECHNICAL SPECIFICATIONS

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:

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:

4.2.1 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:

4.3.1 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:

4.4.1 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.

4.4.2 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.

4.4.3 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. 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:

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

CARSON CITY PURCHASING & CONTRACTS
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:

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

CARSON CITY PURCHASING & CONTRACTS
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

CARSON CITY PURCHASING & CONTRACTS
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.

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

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.

3.1.2 Identification Marks:

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

3.1.3 Testing:

3.1.3.1 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.

3.1.4 Affidavit of Compliance:

3.1.4.1 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.

3.1.5 Couplings:

3.1.5.1 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.

3.1.6 Rubber Rings:

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

3.1.7 Fittings:

3.7.1.1 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.

3.1.8 Joints:

3.1.8.1. Flanged Joints:

3.1.8.1.1 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.

3.1.8.1.2 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.

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

3.1.8.2 Mechanical Joints:

3.1.8.2.1 Mechanical joints shall conform to ANSI A21.11.

3.1.8.2.2 Push-on Joints:

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.

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 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 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

CARSON CITY PURCHASING & CONTRACTS
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.

4.1.2 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.

4.1.3 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

CARSON CITY PURCHASING & CONTRACTS
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 polyethlylene film.

END OF DOCUMENT 2007

CARSON CITY PURCHASING & CONTRACTS
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.

4. Koppers:

4.1 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.

5. Sherwin-Williams:

5.1 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

CARSON CITY PURCHASING & CONTRACTS
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:

6.1 All valves located outside the pavement structure shall be identified with a Utility Marker. Water valve makers 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

CARSON CITY PURCHASING & CONTRACTS
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.

1.1.1 Wafer Style Silent Check Valves:

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.

1.1.2 Swing Check Valves:

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.

1.1.3 In-Line Silent Check Valves:

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.

2. Installation:

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

3. Protective Coating:

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

CARSON CITY PURCHASING & CONTRACTS
TECHNICAL SPECIFICATIONS

Document No. 2011 BUTTERFLY VALVES (10/13/03)

1. General:

Contractor shall furnish all valves in accordance with the drawings and specifications. All valves, including component parts thereof, shall equal or exceed the requirements set forth herein.

Butterfly Valves shall be suitable for potable water and manufactured by a firm normally engaged in the manufacture of such valves. Butterfly valves shall be manufactured by Pratt, Mueller or approved equal. Valves shall be constructed of the following materials:

ITEM	MATERIAL
Body	Cast Iron
Disc	Cast Iron
Shaft	304 Stainless Steel
Seats	Synthetic Rubber
Bearings	Sleeve-Type

1.1 Design:

Butterfly valves, butterfly valve operators, and component parts thereof shall conform to the following standards, except as otherwise specified in these specifications:

(1) AWWA C504, Rubber-Seated Butterfly Valves.
(2) ASTM A276, Stainless and Heat-Resisting Steel Bars and Shapes.
(3) ASTM A436, Austenitic Gray Iron Castings.
(4) ASTM B 62, Composition Bronze or Ounce Metal Castings.
(5) AWWA C550, Protective Interior Coatings for Valves and Hydrants.

All butterfly valves shall be Class 150B and shall be short-bodied unless otherwise shown on the drawings.

Valves shall be furnished with flanged ends, hub ends, "Ring Tite" ends or any combination thereof as required by the drawings or these specifications. Valve flanges may be raised or plain faced with either a smooth or serrated finish and shall be faced and drilled to ANSI B 16.1, Class 125 cast iron flange dimensions, unless otherwise shown on the drawings or specified in these specifications.

All interior bronze parts of valves shall conform to the requirements of ASTM B 62, Specification for Composition Bronze or Ounce Metal Castings, unless otherwise required by these specifications or shown on the drawings.

All valves shall be provided with an interior and exterior protective coating in accordance with subsection 4. Protective Coatings.

Butterfly valve discs shall be manufactured of any of the materials listed in Section 3.4 of AWWA C504, except bronze. Prior to application of the required coating, any casting holes in the disc shall be plugged.

Butterfly valve seats shall be removable and replaceable while installed in the pipeline for valves 24 inches in diameter and larger. The rubber seat shall be applied to either the valve body or the disc. If the rubber seat is applied to the disc, the rubber seat shall be secured to the disc by means of cap screws by one of the two following methods:

If the cap screws penetrate the rubber seat, the cap screws shall bear against a metal retaining ring which shall be an integral part of the rubber assembly. The metal retaining ring shall be applied to the rubber seat by

vulcanizing or bonding process in such a manner that the metal retaining ring and the rubber seat are installed and removed as a single unit.

If the cap screws do not penetrate the rubber seat, a portion of the rubber seat shall be installed in a groove or recess in the disc, and the metal retaining ring shall then bear upon that portion of the rubber seat that is installed in the groove or recess.

For the applicable above method Contractor shall furnish Engineer with the manufacturer's specified torque to be used to set the cap screws, or clearance to be attained between the rubber seat and the mating surface when replacing or adjusting the rubber seat.

The inside flow diameter (smallest flow area not including any portions occupied by the seat) shall not be less than 1-½ inches smaller than the nominal diameter. On valves larger than 24-inches in diameter, discs shall be mechanically secured to the shaft with Type 304 stainless steel, straight through taper pins and locking nuts.

Surfaces that mate with the rubber seat of a butterfly valve to effect the valve closure shall be stainless steel ASTM A276, Type 304 or 316, or an alloy of nickel-chromium (nichrome).

Shaft seals shall be designed for the use of standard split "V" type packing or standard O-ring seals.

Valves shall be bubble tight with rated pressure applied from either side of the valve. Valves shall be bi-directional for control of flow from either direction.

There shall be no travel stops for the disc on the interior of the body.

2. Operators:

Butterfly valve operators and component parts thereof shall conform to the following standards, except as otherwise specified in these specifications:

AWWA C504, Rubber-Seated Butterfly Valves.

ASTM B 62, Composition Bronze or Ounce Metal Castings.

2.1 Manual Operators:

Butterfly valves shall be provided with counterclockwise opening manual operators. The operating torque of each valve and operator shall be computed in accordance with the Appendix of AWWA Standard C504 for a velocity of 16 fps and the applicable pressure drop across the valve. The operators shall be sized for bi-directional flow.

Butterfly valve operators shall produce required torque with a maximum handwheel pull of 80 pounds for handwheels and chainwheels and 150 for operating nuts.

Handwheels shall be from 18 to 24 inches in diameter for valves through 54 inches in size. Handwheel sizes shall conform to detail drawings in checking for adequate operating space.

Butterfly valve operators shall have totally enclosed, permanently lubricated and sealed gear reducers.

All operators shall be self-locking with open and close stops provided to limit valve disc travel.

The maximum and minimum number of revolutions of the operator input shaft to open or close each valve shall be in accordance with the following table:

NOMINAL VALVE SIZE	MINIMUM NO. OF REVOLUTIONS	MAXIMUM NO. OF REVOLUTIONS
10	28	36

Calculations for valve torque requirements shall be submitted to Engineer as part of the shop drawing submittal package.

Valve operators shall be as manufactured by Limitorque Corp., Auma Actuators, Inc., or EIM.

Butterfly valves shall have totally enclosed, permanently lubricated, watertight, greased-packed operators.

All butterfly valves which are not directly buried or submerged, shall be provided with manual handwheels and position indicators. Valves shall be installed with the valve shaft in a horizontal position unless otherwise specified in these specifications.

All butterfly valves which are directly buried or submerged, shall be provided with a 2 inch square operating nut and shall not be equipped with a position indicator unless otherwise specified in these specifications.

Traveling-nut operators will not be permitted on valves 24-inches in diameter and larger.

Where shown on the drawings for valves located in vaults and as required to provide adequate clearance for the handwheel, the valve operator shall be provided with an external packing bonnet. The handwheel and operating nut shall be oriented as shown in the drawings and shall permit the connection of a standard valve key to a 2-inch square operating nut located in the center of the handwheel. Operation with the valve key shall be possible without removal of the handwheel.

2.2 Motor Operators:

Motor-operated butterfly valves shall consist of a motor-driven and manual valve-operating mechanism. Motor-operated butterfly valves shall have a worm gear assembly for motor and manual operation. All valve-operating mechanisms shall have an electric motor, handwheel, geared limit switch, torque limit switch, sealed gear case and magnetic reversing starter. The valve-operating mechanisms shall be as manufactured by Limitorque Corporation, E.I.M. Company, Inc., or Engineer approved equal.

The valve shall have a worm gear assembly completely enclosed in a watertight case with a disc position indicator.

The valve operating mechanism shall permit motor or manual turning of the disc from 0 to 90 degrees. The time required to turn the disc 90 degrees with the motor shall be not less than 30 seconds nor more than 60 seconds unless otherwise specified. A handwheel with an arrow and either the word "open" or "close" thereon shall be provided for manual operation. The handwheel shall not rotate during motor operation. A hand lever shall be provided to mechanically disconnect the motor drive from the gear train for manual operation. The valve operating mechanism shall automatically return to motor operation when the motor is energized. The valve operating mechanism gear case shall be totally sealed and factory packed with extreme pressure type heavy duty lubricants. The maximum torque required to operate the handwheel for manual operation shall not exceed 60 ft-lbs, and the maximum tangential force required on the handwheel rim to operate shall not exceed 60 pounds.

A geared limit switch shall be provided to govern the disc travel from the fully open to the fully closed positions. The geared limit switch shall be adjustable and shall stop the disc at precisely the open and closed position settings. The limit switch settings shall not be affected by temperature changes. The geared limit switch shall be geared to the operating mechanism of the disc and shall be synchronized with the disc position whether the disc is operated by the motor or manually.

A torque limit switch shall be provided and shall disconnect the motor energy in the event of mechanical overload. The torque limit switch shall be adjustable and shall function without auxiliary relays or devices.

The geared limit switch and the torque limit switch within the valve operation mechanism shall be electrically isolated and shall be located in a NEMA IV case which allows for adjustment.

The motor shall be 120-volt, 1-phase, 60 Hertz totally enclosed, non-ventilated, high starting torque, with low starting current for starting under a full load across the line. The motor shall have Class B insulation and shall have a motor frame with all dimensions in accordance with the latest revised NEMA Standards. All motor bearings shall be the ball bearing type. Thrust bearings shall withstand all radial loading.

A magnetic reversing starter shall be furnished and installed on the valve in a NEMA IV housing. The starter shall operate on 120-volt, 1-phase, 60-Hertz electrical power. The opening and closing coil of the starter shall operate with 120-volt, 1-phase, 60-Hertz electrical power. Selector switches, lights and push buttons shall be installed in the starter housing with a local lockable lockout. Wiring diagrams shall be furnished in accordance with Document No. 1005 of these specifications.

3. Installation:

Valves shall be installed at the locations and in the orientation indicated on the Plans unless otherwise noted. Buried valves shall incorporate thrust blocks and valve boxes.

Valve boxes shall be concrete with cast iron lids. The boxes shall be provided with schedule 40 “purple” PVC extension sleeves. Valve boxes and covers shall be similar in all respects to Christy #G5 traffic valve box with C275 lid, Brooks 4TT, or approved equal.

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

Contractor shall lubricate the seat of all rubber-seated valves prior to installation with 111 Silicone Compound as manufactured by Dow Corning, G 661 Silicone Compound as manufactured by General Electric, or Engineer approved equal.

Contractor shall install and test all valves furnished in conformance with the drawings and specifications.

Contractor shall supply to Engineer records of tests performed on valves or component parts thereof that are required by the AWWA Valve Standard specified in these specifications, if requested by Engineer any time within a period of one (1) year after the acceptance of the work.

Shop drawings shall be furnished in accordance with Document No. 1001 of these specifications. Shop drawings shall be submitted with the valve operator in the position and orientation as shown on the drawings.

4. Protective Coatings:

Valves shall be provided with a shop-applied fusion-bonded epoxy coating on interior and exterior surfaces in a minimum thickness of ten (10) mils. Match color of adjacent piping or as shown on the plans.

Any damage to the protective coating including scratches, nicks, etc. shall be repaired prior to the installation using an approved coating conforming to AWWA C209 and C214 and shall be completed to the satisfaction of Engineer or his approved representative.

All exposed steel on buried valves, fittings, etc. such as nuts and bolts shall be coated with an approved tar or mastic prior to installation and conforming to AWWA C209 and C214.

5. Fittings:

All fittings shall conform to AWWA C110 and have a cement-mortar or epoxy fusion coating and lining conforming to AWWA C104. All fittings may be gray (cast) iron or ductile iron with a minimum pressure rating of 250 psi. Unless otherwise indicated on the Plans, fittings may be either push-on (ring-tite), mechanical joint, or flanged.

6. Valve Identification:

All buried valves located outside the pavement structure shall be identified with the appropriate Carsonite Utility Marker (CUM-375), five feet - two inches (5'-2") with the appropriate decal or approved equal. Marker shall be installed no more than 5 feet from the valve measured perpendicular to the new main or roadway.

END OF DOCUMENT 2011

CARSON CITY PURCHASING & CONTRACTS
TECHNICAL SPECIFICATIONS

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

1. General:

1.1 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:

2.1 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:

3.1 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.

3.2 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.

3.3 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

1. General:

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

2. Materials:

2.1 Bolted Couplings:

2.1.1 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:

2.2.1 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:

2.3.1 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:

2.4.1 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:

2.5.1 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.

3. Installation:

3.1 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

CARSON CITY PURCHASING & CONTRACTS
TECHNICAL SPECIFICATIONS

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

1. General:

1.1 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:

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

3. Procedure:

3.1 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.

3.2 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.

3.3 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.

3.4 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.

3.5 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:

4.1 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:

Allowable Leakage (gallons per hour) = ND(P)½/7400	
Where:	N = Number of pipe joints in test section. D = Nominal diameter of pipe (inches). P = Test pressure (psig).

4.1.1 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.

4.2 Measurement of Leakage:

4.2.1 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 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

CARSON CITY PURCHASING & CONTRACTS
TECHNICAL SPECIFICATIONS

Document No. 2016 WATER MAIN DISINFECTING (4/30/01)

1. General:

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

1.2 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.

1.3 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.

1.4 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.

1.5 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.

1.6 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:

2.1.1 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:

2.2.1 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.

2.2.2 The adhesive may be Permatex No. 1 or any alternative approved by Engineer. 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:

2.3.1 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 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:

2.4.1 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:

2.5.1 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/1. Chlorine residual determination shall be made to ascertain that the heavily chlorinated water has been removed from the pipeline.

2.6 Bacteriologic Tests:

2.6.1 After final flushing and before the water main is placed in service, a sample or samples shall be collected by Contractor 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:

2.7.1 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

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

1. General:

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

2. Materials:

2.1 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".

2.2 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:

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

3.2 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

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

1. General:

1.1 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:

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

END OF DOCUMENT 2019

CARSON CITY PURCHASING & CONTRACTS
TECHNICAL SPECIFICATIONS

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

1. General:

1.1 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.

1.2 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.

1.3 Shop drawings for all steel pipe, fittings, specials, and closure pieces 8 inches in diameter and larger shall be submitted as specified in subsection 4.0 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:

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

2.1.2 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.

2.1.3 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.

2.1.4 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.

2.1.5 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.

2.1.6 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

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

2.1.8 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.

2.1.9 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

2.1.10 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.

2.1.11 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:

3.1.1 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., 12¾, 10¾, 8⅝, 6⅝, or 4½ 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.

3.1.2 Except as otherwise shown on the drawings, where bends are specified, the radius of bends shall not be less than 2½ 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.

3.1.3 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.

3.2 Fabrication and Testing:

3.2.1 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 ½ 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.

3.2.2 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.

3.2.3 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 1½ 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.

3.2.4 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 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.

3.2.5 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.

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.

3.2.6 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.

3.3 Handling and Transporting Steel Pipe:

3.3.1 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.

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

3.4 Installation of Steel Pipe:

3.4.1 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 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.

3.4.2 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 10.26.3.3 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.

3.4.3 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 defected 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.

3.4.4 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.

3.5 Non-Fusion Bonded Epoxy Steel Pipe:

3.5.1 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.

3.5.2 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.

END OF DOCUMENT 2021

CARSON CITY PURCHASING & CONTRACTS
TECHNICAL SPECIFICATIONS

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

1. General:

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

1.2 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:

2.1.1 Piping and Equipment Surfaces:

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

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

2.1.2 Shop-Applied Epoxy Lining and Coating:

2.1.2.1 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-lnch steel panel, 0.010 glue line.	4,300 psi, ASTM D 1002
Impact (minimum value)	100 inch-pounds (Gardner 5/8-inch diameter tup)

2.1.3 Field-Applied Epoxy Coating for Patching:

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

2.1.3.2 Painting and Coating of Grooved-End and Flexible Pipe Couplings

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

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.

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

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

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

3.2 Quality of Lining and Coating Applications:

3.2.1 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.

3.3 Factory Testing of Coating—General:

3.3.1 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.

3.3.2 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.

3.4 Factory Testing of Lining and Coating of Pipe--Additional Requirements:

3.4.1 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.

3.5 Field Repairs:

3.5.1 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

CARSON CITY PURCHASING & CONTRACTS
TECHNICAL SPECIFICATIONS

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

1. General:

1.1 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.

1.2 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.

1.3 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:

2.1 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 4.0 Shop Drawings and Quality Control Inspections of the General Conditions.

3. Designing & Proportioning Concrete:

3.1 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.

3.2 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.

3.3 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.

3.4 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:

4.1 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.

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

4.3 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.

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

5. Concrete:

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

5.2 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.

5.3 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.

5.4 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:

6.1 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.

7. Admixtures:

7.1 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.

8. Classes of Concrete:

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

8.1 Class “A” Concrete:

8.1.1 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%.

8.2 Lightweight Class “LA” Concrete:

8.2.2 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%.

8.3 Freeze - Thaw Environment Concrete:

8.3.3 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.

9. Execution:

9.1 Conduits and Other Embedded Items:

9.1.1 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.

10. Mixing and Placing Concrete:

10.1 Preparation of Equipment and Place of Deposit:

10.1.1 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.

10.1.2 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.

10.2 Mixing:

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

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

10.2.3 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.

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

11. Conveying:

11.1 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.

12. Placing:

12.1 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.

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

12.3 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.

12.4 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".

12.5 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.

13. Finishing of Formed Surfaces:

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

14. Weather Protection:

14.1 Cold-Weather Requirements:

14.1.1 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.

14.1.2 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.

14.2 Hot Weather Requirements:

14.2.1 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.

14.2.2 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.

15. Structure Backfill:

15.1 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

CARSON CITY PURCHASING & CONTRACTS
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.

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 settlings 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.

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

CARSON CITY PURCHASING & CONTRACTS
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.

1.1 Referenced Standards:

1.1.1 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.

1.2 Quality Control:

1.2.1 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.

1.3 Shop Drawings:

1.3.1 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.

2. 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.

2.1 Accessories Material:

2.1.1 Tie Wire:

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

2.1.2 Chairs, Bolsters, Bar Supports, Spacers:

2.1.2.1 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.

2.1.2.2 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.

2.2 Fabrication:

2.2.1 Fabricate concrete reinforcing in accordance with ACI 315.

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

2.3 Execution:

2.3.1 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.

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

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

2.3.4 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.

2.3.5 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

CARSON CITY PURCHASING & CONTRACTS
TECHNICAL SPECIFICATIONS

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

1. General:

1.1 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:

2.1.1 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.

2.1.2 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.

2.1.3 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.

2.1.4 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:

2.2.1 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”.

2.3 Curing:

2.3.1 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.

2.4 Access Opening:

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

2.4.1 Frames and Covers:

2.4.1.2 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.

2.5 Access Doors & Ladders:

2.5.1 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.

2.6 Joint Sealing Compound:

2.6.1 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.

2.7 Waterproofing:

2.7.1 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.

3. Installation:

3.1 Transportation of Delivery:

3.1.1 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.

3.1.2 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.

3.2 Excavation and Backfill:

3.2.1 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.

3.3 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.

3.4 Pipe and Fittings:

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

3.5 Elevation and Installation:

3.5.1 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.

3.5.2 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.

3.6 Concrete Finish:

3.6.1 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.

3.7 Cleaning:

3.7.1 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.

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

3.8 Testing:

3.8.1 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

CARSON CITY PURCHASING & CONTRACTS
TECHNICAL SPECIFICATIONS

Document No. 4007 ASPHALT CONCRETE PAVEMENT (3/19/10)

1. Asphalt Concrete:

Work under this section includes mixing, delivery, placement, trimming and compaction of plantmix asphalt concrete on a prepared aggregate base including tack coats and fog seal.

All work shall be performed in accordance with Sections 316, Tack Coat; 317, Seal coats; and 320, Plantmix Bituminous Pavement, of the Standard Specifications, except as modified herein.

A tack coat of SS-1h asphalt emulsion, diluted 50-50 with water, shall be applied to all vertical asphalt or concrete join surfaces prior to placement of plantmix bituminous pavement. The application rate shall be 0.10 to 0.15 gallons per square yard.

When more than one course of asphalt concrete is placed, the surface of the first course shall be treated with a tack coat of SS-1h asphalt emulsion, diluted 50-50 with water, applied at the rate of 0.05 to 0.10 gallons per square yard.

Residential roadways shall use type 3 aggregate, collectors and arterials shall use type 2 aggregate per Section 200.02.03, Plantmix and Roadmix Aggregate, of the Standard Specifications. Asphalt cement material shall be PG 64-22 unless polymer additive is required then PG 64-28 shall be used. The asphalt concrete shall be compacted to not less than 96% of its Marshall maximum density when compacted with 50 blows per side.

A fog seal coat of SS-1h asphalt emulsion, diluted 50-50 with water, shall be applied to all completed asphalt surfaces. The fog seal shall be applied at the rate of 0.06-0.08 gallons per square yard. Application shall not commence until at least twenty-four (24) hours after final rolling. The pavement temperature shall be at least 70 degrees F. at the time of application, and the ambient temperature shall be at least 50 degrees F.

Recycled Aggregate Base will not be allowed in any public roadway.

2. Construction:

2.1 Bituminous Pavers:

The following shall be in addition to the requirements contained in Section 320.03.03, Pavers, of the Standard Specifications.

Automatic Controls:

Pavers placing the final lift of the plantmix bituminous pavement for any uniform roadway section shall be equipped with an automatic control system capable of operating in conjunction with either a ski type device of not less than 30 feet in length or a taut wire set to grade.

Contractor shall furnish all equipment required and shall install all stakes and wire required for the wire system. The automatic system shall be used for construction of the final lift.

END OF DOCUMENT 4007

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 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

2.2 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

2.3 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

CARSON CITY PURCHASING & CONTRACTS
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.

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 extent beyond nut.

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

CARSON CITY PURCHASING & CONTRACTS
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

Document No. 6003 PRESSURE GAUGES (12/31/00)

1. General:

Pressure gauges shall be installed in the locations shown on the Plans.

2. 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 glyserine filled. Gauges shall be Ashcroft Brand or approved equal. Gauges shall be furnished with pressure snubbers.

3. Installation:

Pressure gauges shall be installed in accordance with the manufacturer's recommendations.

END OF DOCUMENT 6003

CARSON CITY PURCHASING & CONTRACTS
TECHNICAL SPECIFICATIONS

Document No. 6004 PUMPS AND MOTORS (12/31/00)

1. Scope:

This section covers installing a pump and motor for Well #50.

Electric motors for pumps shall be horizontal 230/460 volt, three phase, 60 HZ Nema Design B., totally enclosed, fan cooled, T-Frame induction type, with 1.15 minimum service factor. Motors shall be rated for continuous duty and shall be equipped with anti-friction ball bearing only. All bearings shall be relubricatable through standard grease fittings mounted on the exterior of the motors, without requirement operation. Motors shall be designed to operated continuously in an ambient temperature of 40 degrees celsius. Junction boxes shall be equipped with all necessary gaskets and seals to render them drip proof or watertight.

Pumps and motors shall be supplied as complete close-coupled units, warranted by manufacturer to perform as specified herein.

2. Testing:

Testing will be conducted after installation of the pumping equipment and after Contractor has notified Engineer that the equipment is ready for testing. The test will be conducted after approval is received from the Carson City Water Division Engineer or their Agent.

A manufactures technician (not a manufacturers representative) shall be available at additional cost if technical assistance is required during start-up.

Field inspections to verify proper alignment, freedom from binding, vibration, and other defects.

The installing Contractor shall be responsible for all defects in installation. The supplier will be responsible for all defects in material and fabrication.

END OF DOCUMENT 6004

CARSON CITY PURCHASING & CONTRACTS
TECHNICAL SPECIFICATIONS

Document No. 6006 SUMP PUMP (12/31/00)

1. Scope:

This section covers the installation of sump pumps in underground vaults.

2. General Information:

Sump pump shall be of full submersible, unitary design, and shall be equipped with integral, float operated submersible mechanical switch to effect automatic operation. Float switch shall start pump at a maximum water depth of seven and one-half inches (7-1/2"), measured from the surface upon which the pump rests, and shall have a minimum operating differential of four (4) inches.

Pump shall be equipped with three (3) conductor power cord and molded three-prong grounding plug of Nema 5-15P configuration. Cord shall be a minimum of eight feet (8') in length and shall attach to motor or switch housing, through a watertight cord grip. Pump motor shall be equipped with automatic reset thermal overload protection and permanently lubricated bearings. Motor shall be rated at continuous duty, 115 volts, 4/10 HP, single phase, sixty hertz, and shall not be overloaded at any operating point on published performance curve pertinent to pump unit.

Motor, pump and switch housings shall be of cast-iron or bronze construction and shall be rendered watertight through the use of replaceable seals and gaskets. Pump volute and impeller shall be constructed of cast-iron, bronze, or glass fiber reinforced, engineered structural plastics. Hardware and fasteners shall be of stainless steel or equivalent, corrosion resistant material. Pump unit shall be configured with an integral base and shall rest securely on a flat sump floor. Intake housing or cover shall be removable and shall be designed as a strainer, to exclude objects from passing through pump. Pump shall discharge vertically, through an unobstructed one and one-half inch (1-1/2) NPTF tapping. Pump shaft shall be sealed at housing of motor, with a hard-face mechanical seal, and housing shall be oil-filled.

Pump shall deliver a minimum of fifteen (15) gallons per minute, at a total dynamic head of fifteen (15') feet at 3450 RPM. Including accessories and appurtenances, major horizontal dimension of pump unit shall be less than sixteen inches (16), and overall height shall not exceed fourteen inches (14"). Pump unit shall fit in a round or square sump, eighteen inches (18") in diameter.

Sump pump shall be supplied complete, as described, warranted to perform as herein specified. It shall meet or exceed all specifications of the "Sta-Rite, 400 EL, automatic model - integral float-operated mechanical switch.

Substitute equipment shall not be installed without prior approval of Project Engineer. Contractor shall be required to submit to Water Engineer, full documentation and performance data relevant to any proposed alternate equipment. The Water Engineer shall review submitted data and determine acceptability of alternate equipment.

END OF DOCUMENT 6006

CARSON CITY PURCHASING & CONTRACTS
TECHNICAL SPECIFICATIONS

Document No. 6007 ELECTRICAL (6/10/02)

1. General:

The work of this division, where specified or shown on the Drawings or reasonably inferred therefrom, shall include all materials, labor, power, tools, transportation, services and equipment necessary and incidental to the furnishing, installation and completion of the electrical work of this division.

The Electrical Engineer or Construction Manager shall not be responsible for Contractor's failure to carry out the construction work in accordance with the contract documents, nor shall he be required to supervise conduct of the work or the construction procedures and safety procedures followed by Contractor or Subcontractors or their respective employees or by another person at the job site, other than that of the Electrical Engineer's or Construction Manager’s employ.

2. Scope of Work:

The systems to be installed shall consist essentially of the following:

Underground conduit system for primary wiring.

Pre-cast or poured-in-place concrete transformer pads.

Electrical Service equipment and Raceway Systems.

Weather tight conduit systems and equipment.

Connection of pumping and related equipment.

Modification of existing equipment

Conduit trenching and backfill, as shown on drawings.

Pump Control equipment, connection thereof.

Removal of existing power equipment as shown on the Plans.

Other work as specified herein or shown on Drawings.

3. Intent of Specification and Drawings:

It is the intent of this specification that all work shall be complete, tested and ready for operation unless specifically noted otherwise.

4. Codes and Standards:

All materials and workmanship shall comply with all applicable codes, specifications, state laws, labor union contracts, local ordinances, industry standards, utility company regulations and regulations of the State Fire Marshall. In case of difference between these and the contract documents, the most stringent shall govern. Contractor shall promptly notify Construction Manager in writing of any such differences.

The following industry standards, codes and specifications shall apply:

ANSI - American National Standards Institute
IPCEA - Insulated Power Cable Engineers Association
NEC - National Electrical Code as published by NFPA
NEMA - National Electrical Manufacturers Association
NFBU - National Board of Fire Underwriters
NFPA - National Fire Protection Association
OSHA - Occupational Safety and Health Administration, U.S. Department of Labor

UBC - Uniform Building Code as published by ICBO
UL - Underwriter's Laboratories, Inc.
IEEE - Institution of Electrical and Electronic Engineers

5. Materials and Equipment:

Where any specific material, process, method or manufactured article is specified, the specifications are to be used as a guide and are not intended to take precedence over the basic duty and performance of the system to be installed. Where manufacturer's name and number is used, it is to designate a quality standard, and the words, "Or Approved Equal" are implied unless the designation is followed by the words, "No Substitutions", "No Sub", etc.

Where Contractor proposes use of items other than specified, any and all redesign required, including drawings or layouts, shall be the responsibility of Contractor. Any change required for associated equipment or to building structure shall be made at no additional cost to Carson City. Unless substitutions are requested and approved by Construction Manager, no deviations will be allowed. If materials are installed at the jobsite that were not specified and/or were not approved substitution items, such materials shall be removed and replaced with specified materials free of charge to Carson City or other contractors.

All materials and equipment shall be new, of the best quality for the purpose intended, and shall be clearly marked or stamped with the manufacturer's name and nameplate data or stamp and rating.

Materials and equipment shall be suitable for the use and service intended, for the system as designed, and for the conditions that may be encountered in actual operation. All electrical equipment shall be capable of operating at full rated load, without failure at an ambient temperature of 104°F and specifically rated for an altitude of 5000 feet.

Shop drawings shall be required on specific items that are listed in a particular subdivision. In general, shop drawings will be required for substitution equipment, large and/or intricate equipment, and other equipment and/or materials that are critical because of their nature and/or application. Shop drawings shall also include electric power diagrams, control diagrams, installation instructions, control and other ancillary component details, and/or other pertinent information to fully describe all aspects of the items

6. Examination of Site:

Contractor shall visit the site to satisfy himself as to the location and nature of the work, the character of equipment and facilities needed preliminary to the work and during prosecution of the work, and all other matters which can in any way affect the work, or the cost thereof under this contract. Failure by Contractor to acquaint himself with all available information concerning these conditions shall not relieve him from complying with the Specifications or Drawings, and no allowance shall be subsequently made in his behalf for any expense due to failure in this respect.

7. Accuracy of Date:

The data given here and on the Drawings is as exact as could be obtained, but absolute accuracy cannot be guaranteed. The Drawings and Specifications are for the assistance and guidance of Contractor; therefore, exact locations, distances and elevations will be governed by the building itself and actual jobsite or field conditions.

8. Cutting, Patching, and Repairing:

All cutting, chipping, digging, drilling and patching that may be necessary for the proper installation of work specified or shown shall be included. All such work shall be approved by Construction Manager or his representative before starting any of the above operations.

9. Workmanship:

Where other instructions are not given, equipment shall be installed in accordance with the recommendations of the manufacturer and the best standard practice for that type of work.

10. Damage:

Contractor shall be responsible for damage to the work of other trades and shall guarantee to repair or replace with like materials free of charge to Carson City or other contractors, any existing work or equipment damaged during the progress of construction or tests.

11. Coordination of Work:

The work called for under this section shall be coordinated with that of all other crafts. It shall be this Contractor's responsibility to check all the contract drawings and specifications for possible conflicts between his work and that of other crafts in equipment location; pipe, duct and conduit runs; electrical outlets and fixtures; air diffusers; and structural and architectural features.

12. Waterproofing:

Where any work pierces waterproofing, including waterproof concrete, Contractor shall furnish all necessary sleeves, caulking, and flashing required to make openings absolutely watertight. The method of installation shall be approved by Construction Manager.

13. Operating and Maintenance Instructions:

Contractor shall submit three (3) complete sets of operating and maintenance instructions for all equipment, fixtures, and devices, that require maintenance and parts lists to Construction Manager for review. When the sets are complete and approved, all the sets will be forwarded to Carson City. Each set shall be in hard-cover, loose-leaf ring binders.

Instructions shall include a reduced scale schematic control diagram along with the description and function of each control and its location so that Carson City may readily determine how and where adjustments may be made. All special tools for the proper operation and light maintenance of the equipment shall be furnished to Carson City by Contractor.

Sets will normally contain complete information on all components included in the systems, and auxiliary components of major and/or complex equipment. All documentation, diagrams, specification sheets, installation instructions and the like which accompany every component, shall be maintained in a neat and clean manner on the jobsite. All such documentation shall be submitted to Construction Manager prior to the time of final acceptance.

Contractor shall instruct (if required) Carson City (or it’s representative) in the complete operation of all items of equipment. These instructions are to be given to Carson City by Contractor at Carson City's convenience.

14. Record Drawings:

Contractor shall maintain an up-to-date and complete record set of prints of the work at all times during construction. The prints shall be to show actual construction of the various systems. Contractor shall show, in red, any deviations in locations of ducts, pipes, conduits, equipment placement, etc., from the original design.

15. Vibration and Noise Control:

Every precaution shall be taken to ensure quiet and vibration-free operation of all mechanical and electrical equipment.

16. Standard Field Tests:

At completion of construction, Contractor shall demonstrate in the presence of Construction Manager, or his representative that all systems operate in accordance with the requirements of the specifications.

Contractor shall furnish all instruments and all personnel required for the tests and shall allow two (2) full working days for testing.

All equipment shall be tested in the presence of Construction Manager and as directed by Construction Manager.

Contractor shall furnish Construction Manager the required certificates of testing and the cost of all tests shall be paid by Contractor.

Work which fails to meet the requirements of any test and does not meet the requirements of the Contract Documents shall be considered defective and shall be promptly corrected or removed from the site.

The entire electrical installation shall be free from short circuits and improper grounds. Test panels and circuits with main disconnected from feeder, branches connected, switches closed, and all fixtures in place and connected for proper operation. Upon completion of the work, operate and test equipment under normal conditions, all to the satisfaction of Construction Manager.

The following tests and checks shall be performed on new, relocated or renovated equipment before it is placed in operation.

Check all bus and cable connections for proper contact pressure and mark each bolt to indicate it has been checked.

Check the equipment for mechanical adjustments, lubrications, and free operation. Remove all shipping blocks, hooks, loops, or eyelets etc.

Test all control circuits for correct connections and operation.

Perform rotation checks on motor circuits.

Check the polarity of receptacles, and test all GFIC protection receptacles.

Check circuits, feeder, and control circuits for correct connections. Check insulation resistance between phases and phase to ground using 500 volt megger.

17. Dynamic Operational Test:

As a condition of acceptance, the equipment installed under this contract shall operate in the normal (automatic) mode, under actual dynamic conditions, for seven (7) consecutive days - without failure.

18. Special Field Tests - Power:

Tests shall be complete enough to be conclusive and to ensure proper operation. This shall be certified in test reports submitted to Construction Manager. All faulty equipment shall be replaced and tested until satisfactory results are obtained.

Tests shall be nondestructive and procedures used shall be approved by Construction Manager.

Throughout entire installation, inspect and make all necessary tests, including those which Construction Manager may request to insure that drawings and specifications have been followed and that:

the electrical equipment is installed correctly;

the wiring system is free of all grounds and faulty connection;

and that the resistance between grounded equipment and true ground is not more than 10 ohms. Greater than 10 ohms will not be acceptable.

Insulation Testing: After the visual inspection of terminations and connections and the application of tape and other insulating materials, all sections of the complete system of wiring shall be thoroughly tested for shorts and grounds. Contractor shall correct all defects.

Each motor shall have its insulation resistance to ground measured with 500 volt "Megger" prior to connection, in the presence of Construction Manager. Construction Manager will make a record of these values, and values of resistance of less than ten megohms will not be acceptable. Motor rotation shall also be checked.

Insulation resistance measurements of each 480-volt circuit shall be made with loads connected and contactors, if any, blocked closed to give complete circuits. Insulation resistance of complete circuit shall be measured from the circuit breaker load terminals with the breaker open. Construction Manager will witness and make record of these values. Values of resistance of less than fifty megohms will not be acceptable.

Overload Protective Devices: Contractor shall compile, by visual inspection of equipment installed for each motor, the following data in neatly tabulated form:

1. Horsepower	4. Temperature rating
2. Nameplate amperes	5. Overload catalog number
3. Service factor	6. Overload current range and setting

Test each individual power circuit at the panel with the equipment connected for proper operation. Correct any deficiencies.

Check the service voltage at each panel under maximum load and under no load and arrange for proper voltage, if voltages and regulations are not within acceptable limits. Submit a report to Construction Manager showing service voltages and corresponding loads.

19. Identification:

Provide nameplates, labels, and signs to identify all equipment and circuiting. Wording and size of characters shall be approved by Construction Manager. This shall include but is not limited to items such as: panelboards, transformers, disconnects, starters, control stations, relays, time switches, special receptacles, remote switches, signal systems, conductors, and terminals. Nameplates shall be black lamicoid with white letters.

Use Dymo labels for identification of components located inside control cabinets.

Use Brady wire markers for identification of control circuit and signal circuit wiring. Use stenciled, typewritten or stick-on markers for terminal strips. Markers shall be slip-on PVC sleeve type as manufactured by Brady, Seaton, or Equal.

Use typewritten circuit directories for panelboards indicating type and location of load.

Nameplates shall be attached to the various devices using round head brass screws. Self-sticking nameplates and/or gluing shall not be used.

20. Sleeves and Plates:

Provide sleeves wherever openings are required through new concrete or masonry members. Place sleeves accurately and coordinate locations with structural work.

21. Direct Burial Underground Raceways:

Underground rigid steel conduit shall be PVC coated or wrapped.

Use rigid steel conduit for terminations extending above grade, including elbows against which pulling wire will rub.

Installation of green insulated ground conductors in all non-metallic conduits is acceptable.

Direct burial conduit shall be used only where listed on the Drawings.

22. Conduit Systems:

Provide Schedule 80 conduit for exposed work within five feet of exterior grade, within masonry or concrete structure located above grade.

Locknuts shall be steel or malleable iron. Bushings shall be metal with insulated throats.

EMT connectors and couplings shall be compression type. Connectors shall have insulated throat bushings.

Size shall be as indicated on the Plans, or required by the NE code for number and size of conductors installed.

Joints shall be cut square, threaded, reamed smooth and drawn up tight. Bend or offsets shall be made with standard elbows. Field bends shall be made with an approved bender or hickey. Number of bends per run shall conform to Code limitations.

Raceways shall be continuous from terminal to terminal and terminated with connectors, hubs, or locknuts and bushings in such manner that each shall be capped to prevent entrance of foreign materials during construction. Install systems completely before conductors are pulled in. Cap ends during construction.

Conduits shall be securely fastened in place with hangers, supports or fastenings provided at each elbow and at the end of each straight run terminating at a box or cabinet. Horizontal and vertical conduit runs may be supported by one-hole malleable straps, clampbacks, or other approved devices with suitable bolts, expansion shields or beam-clamps special brackets for mounting to building structure. Perforated iron strap and iron wire shall not be used for supporting conduits. Strength of the supporting equipment and size and type of anchors shall be based on the combined weight of conduit, hanger and cables with a safety factor of four.

Transitions between nonmetallic conduits and conduits of other materials shall be made with the manufacturer's standard adapters and designed for such purpose.

23. Flexible Conduit:

Provide liquid-tight flexible conduit with liquid-tight connectors for short connections to motors and devices requiring adjustment or subject to vibration. Maximum length is three feet. Provide bonding jumpers within conduit and attach to terminating boxes and equipment to ensure continuity of ground. Solid wire shall not be installed in flexible conduits.

24. 600 Volt Wire and Cable in Raceways:

Conductors shall conform to the requirement of the current edition of the Code's U.L. Standards. The size, type of insulation, voltage rating, and manufacturer's name shall be permanently marked on the covering at regular intervals.

Conductors shall be standard American Wire Gauge, soft-drawn copper; #12 and smaller may be solid; #10 and larger shall be stranded. Unless otherwise noted, minimum size shall be #12. Except where specifically noted, aluminum conductors shall not be installed.

Insulation shall be rated 600 volts. Unless otherwise noted, #14 through #4/0 cable insulation shall be type THW, THWN or THHN. All interior wiring in dry locations may be type TW in sizes up through #4.

Color code conductors consistently throughout the electrical system. All wire/conductors shall be full length, integral color pigmentation insulation in various colors and wire sizes up through at least #10, to indicate phase, voltage and/or duty in order to maximize safety in the system. Except when first approved by Construction Manager on submittal, no deviations will be allowed. Where integral pigmentation colors, other than black, white, and grey are not available, use colored plastic tape applied in a spiral halflap manner over exposed

conductor portions in manholes, boxes, panels, switchboards, and other enclosures. Use only black insulated wire for power conductor, and apply at least 4 turns of identification color tape.

Only the integral color pigmentation insulation designated for neutral conductors will be allowed throughout the full length. Wherever bonding or grounding conductors are in raceway with other conductors, only green pigmentation insulation for the full length will be allowed. Color for control wires shall be red.

TYPICAL CONDUCTOR COLOR CHART		
CONDUCTOR	SYSTEM VOLTAGE	
	227-480	120-240-208
Phase A	Brown	Black
Phase B	Orange	Red
Phase C	Yellow	Blue
Neutral	Grey	White
Equipment ground & bond	Green	Green

Install wire and cable in conduits, ducts, or raceways after the raceway system has been completed. Exercise care to prevent damage to conductor or insulation. Cable lubricants shall be approved for the type of cable.

Cables and conductors shall be continuous from origin to equipment without running splices in intermediate pull or splice boxes. Where taps and splices are necessary and approved, they shall be made in approved splice boxes with suitable connectors as noted herein.

The Electrical Contractor shall furnish and install all hangers racks, cable cleats, and supports required to make a neat and substantial cable installation.

25. Conductor Terminations and Splices:

Use solder-less pressure-type connectors, unless otherwise specified. Connectors shall be Scotchlok for wire size No. 14 through No. 8, Burndy type KVS for cable #6 and larger.

Where compression-type connectors are noted on Plans, they shall be of the type as manufactured by Burndy Company, and shall be installed with approved hydraulic tools to assure a permanent mechanically secure high-conductivity joint.

Where conductors are to be connected to metallic surface, the coated surfaces of the metal shall be polished before installing the connector. Lacquer coating of conduits shall be removed where ground clamps are to be installed.

Each conductor cable group in panels, pull boxes, or troughs shall have a permanent tape or pressure-sensitive label with suitable numbers and letters for easy identification.

26. Utilities:

All contractors shall contact the utility companies which provide services to the site. Each shall pay for any additional service connections, and shall provide piping, valves, meters, pits, detector checks, conduit, service drops, pull boxes, trenching and backfill, and/or other appurtenances required by the utility company.

Contractors shall coordinate with the electrical utility to establish clockwise phase rotation (A-B-C) at each three phase service installation.

27. Concrete Work:

Provide concrete work for duct banks, electrical equipment bases, unless specifically noted otherwise.

All concrete work shall conform to Technical Specification Doc No. 4001, “Concrete Structures”.

28. Telemetry:

Electrical Contractor shall coordinate with Construction Manager for installation of conduit and wiring systems which interface with telemetry equipment.

Carson City shall bear responsibility of installation, alignment and testing of all telemetry equipment.

Contractor shall notify Construction Manager, if it should become necessary to move, alter, adjust, modify, or disconnect any existing telemetry equipment. Carson City shall effect necessary changes.

29. Demolition:

At the completion of the installation, testing and acceptance of all new facilities, Contractor shall obtain permission of Construction Manager to begin disassembly and demolition of the old facilities, if any.

All electrical equipment and appurtenances shall remain the property of Carson City, except those items noted on the plans (those items left for disposal) or those which are required and supplied by Contractor to maintain the energy service as necessary to operate the existing facilities while construction is in progress. Such other equipment as removed from the site shall be disposed of at an approved disposal location.

Contractor shall make every effort to coordinate demolition with Carson City and shall take care to deliver all salvaged equipment to Carson City without damage and in good working condition.

30. Service Change:

Contractor shall coordinate his work with Sierra Pacific Power Company (NV Energy) for the installation of all power requirements including temporary power as required at all the Construction Site(s). Contractor shall provide all additional items as necessary to maintain power at all existing stations, if any, until the full and satisfactory operation of the new system and authorization of Construction Manager.

Contractor shall notify Construction Manager Forty Eight (48) hours prior to any shut-down of power to any segment of the functional system.

Contractor shall coordinate his work with Nevada Bell for the installation of all required telephone services or modifications thereof.

31. System Start-Up:

After all testing has been completed to the satisfaction of Construction Manager, Contractor shall notify Construction Manager, Twenty Four (24) hours prior to start-up of the new system, for start-up instructions.

END OF DOCUMENT 6007

CARSON CITY PURCHASING & CONTRACTS
TECHNICAL SPECIFICATIONS

Document No. 6008 ELECTRICAL SERVICES (6/10/02)

1. General Information:

1.1 Description:

These standards provide trench configurations and general requirements and guidelines for trenching and excavation for pipe, conduit, cable, box, and vault installations within the electric utility's, NV Energy, service territory.

1.2 Jurisdiction:

All applicable City, County, State, and Federal Specifications must be met in addition to the requirements of this standard. In the case of conflict, the more restrictive specification or standard shall apply.

2. Trenching Guidelines:

2.1 Trenching Configurations:

Trench configurations for electrical conduit installations up to the meter main shall be installed as per the most current NV Energy Details and Specifications. In cases where a typical configuration does not apply, Contractor shall contact NV Energy engineering department for an approved detail.

2.1.1 Trench Separations:

All new electrical facilities shall be installed with a minimum of twelve inches (12") of vertical clearance and 5 feet of horizontal clearance from any new or existing water lines. If the new electrical facility is above a new or existing water line, then the new electrical shall be encased with a light weight concrete slurry, 5 feet both sides of the crossing as per NV Energy details and specifications.

2.1.2 Trench Locations:

Trench locations are typically shown relative to street center line, right-of-way lines, or property lines in new and existing developments. It is the responsibility of Contractor to verify that these reference lines are established and are accurate. Where such references are unavailable, alignment shall be established by NV Energy and Construction Manager.

2.3 De-watering:

Where groundwater is encountered during trench excavation, it shall be the responsibility of Contractor to adequately de-water the trench to provide for dry, safe and convenient installation of the pipe, conduit, and/or cable.

2.4 Other Utilities:

2.4.1 Joint Trenches:

Joint trench construction shall be by mutual agreement of all parties involved. Coordination of separate utility installations in a joint trench shall be by Contractor.

2.4.2 Existing Utilities:

Prior to commencement of excavation, Contractor shall telephone the Underground Service Alert (U.S.A.) at 1-800-227-2600. After existing utilities have been located, extreme caution shall be exercised while excavating in their vicinity. Once exposed, pipes, conduits, and cable shall be shored or supported as necessary to prevent damage. The full cost of repair or replacement of damaged utilities shall be borne by Contractor.

2.5 Installation Procedures:

Pipes, conduits, and cables shall be installed in the trench, in accordance with the manufacturer's recommended procedures, NV Energy Specifications, and/or standards and accepted practices.

3. Box and Vault Installation:

3.1 Excavation:

Excavation for boxes and vaults shall be performed by Contractor concurrent with adjacent trench excavation, unless otherwise directed by the NV Energy engineer, planner, or inspector. Size, depth, and alignment of the excavation shall be as shown on the attached standard drawings.

3.2 Dewatering:

Where groundwater is encountered during excavation, it shall be the responsibility of Contractor to adequately de-water the excavation to provide for dry, safe and convenient installation of the box or vault.

3.3 Installation:

Large boxes and vaults shall be installed using equipment with adequate load capacity to safely handle the components. No personnel shall be in the excavation during placement. All boxes and vaults shall be set level, squarely aligned with existing or proposed improvements and with the top 1 inch above finish grade in unpaved areas, 1/4 inch below finish grade in paved areas, and flush in sidewalks.

3.4 Bedding and Backfill

Boxes and vaults shall be bedded and the surrounding excavation backfilled, in accordance with NV Energy Specifications and details.

4. Transformer Pad Installation:

4.1 Excavation:

Excavation for transformer pads shall be performed by Contractor or customer concurrent with adjacent trench excavation, unless otherwise directed by the NV Energy engineer or inspector. Size, depth, and alignment of the excavation shall be as shown on standard drawings.

4.2 Dewatering:

Where groundwater is encountered during excavation, it shall be the responsibility of Contractor to adequately de-water the excavation to provide for dry, safe and convenient installation of the transformer pad.

4.3 Installation:

Large transformer pads shall be installed using equipment with adequate load capacity to safely handle the components. All transformer pads shall be set level, squarely aligned with the base at existing or proposed finish grade, and installed as per NV Energy details.

4.4 Bedding and Backfill:

Transformer pads shall be bedded and the surrounding excavation backfilled, in accordance with NV Energy Specifications and Details.

END OF DOCUMENT 6008

CARSON CITY PURCHASING & CONTRACTS
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 ± 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 ± 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

CARSON CITY PURCHASING & CONTRACTS
TECHNICAL SPECIFICATIONS

Document No. 6010 SUBMERSIBLE PUMPS AND MOTORS (2/10/06)

1. General:

These specifications are intended to cover the furnishing and installation of one complete deep well submersible pump and motor assembly.

The pump shall be designed, fabricated, assembled and tested in accordance with the following standards:

OSHA	Occupational Safety and Health Act
AFBMA	Anti-Friction Bearing Manufacturers Association
ANSI	American National Standards Institute, B16.5 Steel Flanges
AWWA	American Water Works Association
NEMA	National Electric Manufacturers Association
AWS	American Welding Society
ASTM	American Society for Testing and Materials
ASME	American Society of Mechanical Engineers
HIS	Hydraulic Institute Standards
NSF	National Sanitation Foundation

The pump shall be statically and dynamically balanced and shop assembled to assure component compatibility.

2. Pump Design Specifications:

2.1 Pump Bowl Assembly:

The pump shall be a Hays brand pump, or approved equal. The bowls shall be Class 30 cast iron, flanged type construction lined with porcelain, free of blow holes, sand holes, or other detrimental defects, and shall be accurately machined to close dimensional tolerances. The bowl unit shall be capable of withstanding a hydrostatic pressure equal to twice the pressure at the rated capacity or 1.5 times the shutoff head, whichever is greater. The bowl unit shall include a bearing to carry the momentary upthrust encountered at start-up. The bowl unit shall include a metal guard to protect the motor cable from abrasion during installation.

The impeller shaft shall be of 400 series stainless steel, turned, ground and polished. The shaft shall be supported by water lubricated bronze bearings above and below each impeller. The suction bell bearing shall be sealed with a bronze sand collar.

The impellers shall be C86500 manganese bronze, accurately machined and finished suitably balanced. Each impeller shall be securely attached to the shaft with split-tapered locking bushings. The impellers shall be vertically adjustable by means of a top shaft nut above the motor.

2.2 Drop Pipe and Pit-less Unit:

Drop pipe shall be standard well drop pipe steel with standard wall thickness, threaded and coupled, diameter as shown on the plans. Drop pipe shall conform to American Standard Tapered pipe thread specifications. The pipe shall be furnished using consistent lengths. A check valve shall be installed immediately above the pump and also at 20' below ground surface as shown on the plans.

Contractor is required to submit a shop drawing of the pit-less unit to Engineer. The pit-less unit for the well shall consist of malleable steel and designed for the installation of a submersible pump and drop pipe as shown on the plans. The casing outlet unit shall not protrude into the casing, thereby providing a clear opening for removal and installation of the submersible pump unit. After installation of the pit-less unit, the pump and drop pipe shall be installed into the well and centered in the casing. The pit-less unit shall be a Maass, HD or approved equal.

The top of the well casing shall be fitted with a watertight pit-less well cap and vent. The cap shall be cast iron with O-ring casing seals and threaded electrical connection outlet.

2.3 Motor Characteristics:

Enclosure - Submersible.
Insulation, NEMA - Class B or F.
Ambient Temperature - 40° Centigrade.
Service Factor (min) - 1.15.
Horsepower - As Required.
Full Load Speed - 1800 RPM, unless approved by Engineer.
Voltage - 460.
Phases - 3.
Cycles, Hertz - 60.
Minimum Efficience-70%

The motor shall conform to the latest NEMA specifications for submersible motors. The motor shall be as manufactured by Hitachi or Franklin, no substitutions.

2.4 Motor Design Specifications:

The motor shall be of the squirrel cage induction type, capable of being equipped with a soft-start feature. The motor shall be of proper size to drive the pump continuously over the entire head-capacity range without the load exceeding the service factor and capable of continuous operation under water.

The motor shall be equipped with a thrust bearing to adequately support the weight of all rotating parts, plus the hydraulic thrust. The power output shaft shall be 416 stainless steel.

The motor enclosure shall be cast iron or aluminum with cast iron end bells. Pump manufacturer shall provide motor to ensure proper interface with the pump head.

All fastenings exposed to the well water shall be stainless steel. The pump motor coupling shall be 416 stainless steel and capable of transmitting the total torque of the unit.

2.5 Interconnector:

Interconnector shall be made of cast iron and shall couple the bowl to the motor. The interconnector shall include a bronze sleeve bearing with a length to shaft diameter ratio of at least 3:1 to protect the motor from radical loads. The bearing shall be protected by a sand and grit slinger. The interconnector shall completely enclose the upper motor end bell and shall include a suction screen.

2.6 Submersible Cable:

The cable shall be adequately secured to the drop pipe and of sufficient length to include pump setting, bowl assembly, plus one foot for each 50 feet of setting to compensate for sag during installation, plus extension from the surface plate to the pump plant panel.

2.7 Installation:

The pumping equipment shall be installed in accordance with approved procedures, submitted with the shop drawings and as indicated on the plans. Contractor shall notify Construction Manager thirty-six (36) hours prior to installing the new pump and drop pipe assemble for inspection of the installation by Carson City Public Works Department. The motor shall be tested with the appropriate instruments to assure there is no contact of live electrical components with the well water.

Following installation of the pumping equipment, the well shall be slug treated with granular or liquid chlorine. Chlorine shall be added in sufficient quantity to effect a concentration of 200 ppm in the well.

After testing is completed, the well shall again be shock treated with granular, or liquid, chlorine to effect a concentration of 100 ppm. The chlorine shall be mixed in the well by starting and stopping the pump several times, and then shall be left in the well for twenty-four (24) hours. The well shall then be open discharged until a chlorine concentration <1 ppm is reached. The chlorinated water shall be disposed of properly. Water shall not

be disposed of using the existing storm drain systems or where highly chlorinated water will contact any surface water drainage systems.

2.8 Testing:

Acceptance testing shall be conducted after installation of the pumping equipment and after Contractor has notified Construction Manager that the equipment is ready for testing and has received approval that the tests are to be conducted. Testing and acceptance shall consist of:

Field inspection to verify proper alignment, freedom from binding, vibration and other defects.

Overall pumping performance and efficiency test.

Measurements during the overall pumping tests will include discharge flow, pumping water level, discharge pressure, and input electrical power. The test will be conducted at design conditions and the plumbing plant will be deemed acceptable if the design conditions at a minimum pump efficiency of 70% has been met.

2.9 Warranty:

The complete pump and motor units shall be guaranteed against defects in material and workmanship for a period of one (1) year from the date of acceptance. All manufacturer information that was provided with the new pump and motor shall be provided to Carson City and included in the O&M manuals.

END OF DOCUMENT 6010

CARSON CITY PURCHASING & CONTRACTS
TECHNICAL SPECIFICATIONS

Document No. 6011 PUMP CONTROL VALVE (12/31/01)

1. General:

Pump control valves shall be installed in the locations and the sites shown on the plans.

Materials:

Valves shall be constructed of the following materials:

ITEM	MATERIAL
Main Valve and Body Cover	Cast Iron ASTM A48
Main Valve Trim	Brass QQ-626 Bronze ASTM B61
Pilot Control System	Cast Brass ASTM B62 with 303 Stainless Steel Trim
Rubber Parts	Buna-N-Synthetic Rubber

1.2 Design:

Valves shall be a diaphragm-actuated, single-seated, composition disc, hydraulically-operated valve. It shall have two operating chambers sealed from each other by a flexible synthetic rubber fully-supported diaphragm. The valve disc shall have a rectangular cross-section and shall be retained on three sides. Control of valve operation shall be by means of an externally mounted four-way solenoid pilot valve. External packing glands or stuffing boxes are not permitted in the main valve.

Pressure from system side of check valve shall be used for pilot valve operation. Valve shall be Model 61-02 globe style Pump Control Valve manufactured by Cla-Val Co., only.

END OF DOCUMENT 6011

ABOVE GRADE SODIUM HYPOCHLORITE FEED UNIT

ABOVE GRADE ELECTRICAL CABINET

1. Scope:

1.1 This section covers furnishing one (1) factory-built, factory-delivered, underground well control meter station and above grade sodium hypochlorite feed unit with above grade electrical cabinet, with all necessary internal piping, meters, valves and controls and other necessary appurtenances as shown on the plans and specified herein. The underground well control meter station shall be complete when delivered and will not require internal contractor construction except to install the power service through the service conduit provided for that purpose.

1.2 The station telemetry will be furnished by Carson City. The manufacturer is to provide a 27" tall, by 30" wide by 10" deep metal cabinet inside the above grade electrical cabinet for this equipment. The contractor shall remove the telemetry back panel and provide it to the Construction Manager. Carson City will then replace the backboard once all telemetry equipment has been installed.

2. Quality Assurance:

2.1 The equipment and materials covered by these specifications are intended to be standard equipment of proven reliability and as manufactured by reputable manufacturers having experience in the production of such equipment. The equipment furnished shall be designed, constructed, and installed in accordance with the best practices and methods and shall operate satisfactorily when installed as shown on the contract drawings and operated per manufacturer’s recommendations.

2.2 It is intended that the manufacturer of the selected equipment shall be a business regularly engaged in the manufacture, assembly, construction, start-up and maintenance of water distribution equipment of the type required for this project. The manufacturer shall have at least ten (10) years of successful experience in providing stations of the type, design, function and quality as required for this project. As such, the station manufacturer shall be required to affix an UNDERWRITERS LABORATORIES (UL) LABEL attesting to the compliance of that assembled equipment under the PACKAGED PUMPING SYSTEMS (QCZJ) UL Listing Category. This label shall be inclusive of the entire well/control/meter vault station with enclosure so as to demonstrate compliance with the National Electrical Code requirements for working clearances and wiring procedures.

2.3 Equipment manufactured without this third party certification label or equipment manufactured by an outside source or "brokered equipment" defined as systems not assembled on the premises of the named manufacturer by that company's employees WILL NOT be allowed.

3. Pre-Bid Submittal:

3.1 All prospective manufacturers must prepare a Pre-bid Submittal specific to the equipment required for this project and make it available to the design engineer a minimum of ten (10) calendar days prior to the time of bidding. Pre-bid submittals must be provided in a minimum of three (3) copies per the requirements listed below. A list of approved alternate equipment manufacturers shall be forthcoming by addendum from the engineer five (5) calendar days before the time of bidding.

3.2 Pre-bid submittals shall provide the following documents and samples as a minimum:

- Mechanical drawings, fully to scale, on 24" x 36" size sheets showing all equipment, devices and components at size and in at least three (3) views; interior plan view, exterior plan view and section. Show NEC Section 110-26 electrical clearances at panels and related devices where the section applies.

- Electrical drawings on 24" x 36" size sheets without match lines, showing on one (1) sheet the power electrical diagram and on one (1) sheet the control schematic diagram.

- Component data sheets marked for the exact device and features for all mechanical and electrical components provided for in the specification including base materials and finishes and coatings.

- A complete listing and photocopies of all UL file numbers under which the equipment is to be assembled and fabricated.

- A structural drawing showing mounting devices and steel framing for the base skid, with all member sizes and weights called out and a foundation plan showing the sized outline of the recommended foundation size and shape.

- An officer signed, notarized statement of the fact that start-up and service technicians to be used on this equipment will be full time, regular employees of the manufacturer, not a third party contractor or representative.

- All pipe welds shall be performed by certified welders. As part of the equipment Pre-submittal, the pump station manufacturer shall provide copies of the welding certificates of the employees who are to perform the pipe welds.

- A list of five (5) installations in the Western United States where similar equipment by the manufacturer is currently in similar service; include contact name, telephone number, mailing address of the municipality of installation, engineer, owner, and date of installation. If five installations do not exist, the list shall include all that do exist. If no installations exist, a statement to that effect must be included.

- Samples of the equipment capsule lap joint showing the protection coating specified and the Fusion Bonded Epoxy Coating on the interior pipe surface shall be included with the pre-bid submittal.

4. Approvals:

4.1 Carson City Public Works (CCPW) shall secure approval from the State of Nevada Bureau of Health Protection Services (BHPS) for this station design as specified in Nevada Administrative Code section 445A.66695, paragraphs 1, 2, 3(b), and 6 as relates to the station design. The manufacturer shall prepare station plans and specifications in accordance with NAC 445A.66705. All plans provided by the manufacturer for BHPS approval shall be sealed by an engineer licensed in the State of Nevada, and shall be provided to CCPW for submittal to BHPS.

5. Equipment Capsule – For Well Control/Meter Station:

5.1 The equipment capsule size for this project shall be appropriate for National Standard mandated clearances and for proper clearances above, below and around equipment to provide for safe servicing, removal and reinstallation of that equipment.

5.2 Likewise, the entrance manway and/or equipment hatches shall be sized to provide for the eventual removal and replacement of any component within the station without altering the station to accomplish that task.

6. Equipment Capsule - Construction:

6.1 The plate steel employed throughout the capsule shall be 1/4" minimum thickness and meet or exceed the requirements for ASTM A-36. The structural shapes (channels and angles) shall be of the thickness/weight as shown on the plans for this item and shall meet or exceed the requirements for ASTM A-36. The structural rectangular or square tubing shall be of the wall gauge as shown on the plans for this item and shall meet or exceed the requirements for ASTM A-500 Grade B. Field welding to complete the capsule or attach the entrance hatch will not be allowed.

6.2 The plate forming the top and bottom of the capsule shall be cold formed prior to assembly so as to form a lap joint with the side wall. The lap joint shall be continuously welded on the interior by hand and the exterior by machine to form an airtight seal. The lower side wall continuous weld shall be an average 1 1/2 inches above the capsule floor, which removes the lower weld from incidental water impingement. Capsules without lap joints will not be accepted.

6.3 The lap joint shall be in full conformance with Steel Tank Institute (STI) P-3 specifications Section 4.2.6 and Underwriters Laboratories (UL) 58 specifications for steel vessels in buried service, and the American Welding Society (AWS) Structural Welding Code, Section 9.10, for dynamically loaded structures.

6.4 Any ferrous metal device passing through the capsule wall will be welded fully along its circumference or length on both sides of the capsule wall.

6.5 The capsule shall be a vertical, elliptical capsule with a width of 7 feet 6 inches, length of 13 feet 0 inches and an inside clear height of 7 feet 3 inches. The tangent wall will be reinforced on a maximum of 27 inch centers each way. The vertical reinforcement shall be 6" x 4" x 1/4" rectangular structural tubing capped at the ends. The horizontal reinforcement will be 5" x 6.7" channels.

6.6 The top and bottom of the equipment capsule shall be supported and reinforced by a combination of standard structural shapes of the sizes and weights suitable for H-20 loading.

6.7 Four (4) or more lifting plates of 3/8 inch minimum thickness shall be placed about the perimeter of the capsule to facilitate the lifting and handling of the station.

6.8 Interior lifting eyes shall be placed over each piece of equipment in excess of 60 pounds in weight.

6.9 The capsule will be complete with a sump. The sump shall be a minimum of eighteen (18) inches in diameter x eight (8) inches deep; the sump shall be provided with a four (4) inch plugged outlet for gravity outflow as required

7. Entrance Manway:

7.1 The equipment capsule entrance manway shall be a prefabricated aluminum access door, rectangular in shape, with a minimum clear opening of thirty-six (30) inches by fifty-four (54) inches. The access manway shall be designed when installed to be flush mounted at finished grade so that vehicular or pedestrian traffic can pass smoothly over the cover. The door leaf shall be 1/4" aluminum diamond pattern plate reinforced for H-20 loading. The channel frame supporting the door leaf shall also be 1/4" aluminum with an anchor flange around the perimeter.

7.2 The door leaf shall be equipped with heavy, forged brass hinges with stainless steel pins, spring operators to assist in opening and an automatic hold-open arm with red vinyl grip handle to permit easy one hand release. When the door leaf is in the raised position, the hold-open arm will engage a lock open device to prevent accidental closing of the door leaf. The access door will be fabricated for keyed entry, by having a padlock protective pocket with hinged cover contiguous with the channel frame. The access door will be padlocked and the lock will be complete with two (2) keys on a key ring complete with the manufacturer's identification. The entrance manway shall be complete with a 1-1/2 inch drainage coupling in the front right hand corner of the channel frame. The channel drain will be so plumbed as to flow either by gravity to a french drain exterior to the station or to the station sump at the engineers direction.

8. Access Ladder:

8.1 An all aluminum access ladder will be provided. The ladder shall be a Type 1A extra heavy duty ladder with 300 lbs. load rating and meet ANSI A14.3 fixed ladder standard. The ladder will have 1 1/4" serrated rungs with 3" full I-Beam side rails. The uppermost ends of the side rails will be protected by plastic caps bolted into place. The complete access ladder will be bolted into place at a minimum of two (2) points both top and bottom so as to be easily removable to facilitate equipment maintenance.

8.2 A Bilco Model LU-1 ladder-up safety post shall be installed on the vertical centerline of the entrance ladder.

9. Safety Matting:

9.1 The walkway areas (that space from the entrance ladder to the control panel and the entire NEC clearance area) shall be covered with a rubber drainage runner. The runner shall be medium duty, 1/2 inch minimum thickness of open slot design allowing fluids to drain under standing or walking surfaces. The runner shall have a tread design to promote sure footing. The underside of the runner shall have a raise knob design to permit aeration and drainage, and to reduce runner fatigue. The runner shall not be glued to the floor.

10. Corrosion Protection:

10.1 All surfaces of the entire structure shall be sandblasted equal to commercial blast cleaning (SSPC-SP6).

10.2 Following grit blasting, all weldments will be pretreated by hand with brush using Tnemec Series 69 Hi-Build Epoxoline II coating to provide additional corrosion protection. Following the pretreatment full coating application shall take place.

10.3 The full protective coating shall take place immediately after surface preparation. The protective coating shall be Tnemec Series 69 Hi-Build Epoxoline II two-component, high solids, system formulated for high build application for protection and finishing and having excellent chemical and corrosion resistant properties. The epoxy system shall be self priming and require no intermediate coatings. The protective coating shall provide in two (2) applications a total dry mil thickness of 8.0 mils (WATERFALL color).

10.4 The station manufacturer shall furnish four (4) seventeen pound packaged magnesium anodes for cathodic protection. The anodes shall be buried equally spaced around the station and connected by heavy copper wire to lugs on the station provided for that purpose.

11. Piping:

11.1 Piping shall be steel and conform to material specification ASTM A-53(CW) for nominal pipe size four (4) inch and smaller and ASTM A-53(ERW) Grade B for nominal pipe size five (5) inches and larger. Steel butt-welding fittings shall conform to material specification ASTM A-234 Grade WPB and to the dimensions and tolerances of ANSI Standards B16.9 and B16.28 respectively.

11.2 Forged steel flanges shall conform to material specification ASTM A-105 Class 60 and/or ASTM A-181 for carbon steel forgings and to the dimensions and tolerances of ANSI Standards B16.5 as amended in 1992 for Class 150 and Class 300 flanges.

11.3 The piping sizes shall be as shown on the drawing.

- Size 10 inch and below - Schedule 40
- Size 12 inch thru 20 inch - Standard weight (.375" wall)
- Size 24 inch and above - Standard weight (.500" wall)

11.4 All pipe welds shall be performed by certified welders employed by the station manufacturer. As part of the equipment submittal, the station manufacturer shall provide copies of the welding certificates of the employees who are to perform the pipe welds.

11.5 All piping surfaces shall be prepared by sandblasting, or other abrasive blasting, prior to any welds taking place. Piping of 5" diameter and smaller may be cut by saw. Piping of 6" diameter and larger shall be bevel cut, and Oxy-fuel or Plasma-arc cutting techniques shall be used to assure and facilitate bevel pipe cuts. No saw cuts or other form of abrasive cut-offs are allowed on 6" and larger diameter pipe.

11.6 In all cases, short circuit transfer, spray transfer or pulse-arc transfer modes of the gas metal arc welding process shall be applied semi-automatically. When utilizing the short circuit mode, shielding gas consisting of 50% carbon dioxide and 50% argon gas shall be used. When utilizing the spray or pulse-arc transfer modes, a shielding gas consisting of 5% carbon dioxide and 95% argon shall be used. In all cases, welding wire with a minimum tensile strength of 70,000 psi shall be employed. All flange welds and butt welds of equal size pipe shall be a single continuous nonstop weld around the complete circumference of the pipe. Whenever possible, vertical up weld passes will be applied to all pipe welds. No vertical down weld passes will be allowed. Completed welding assemblies shall create no internal obstruction, restriction or create any unintended sources of water deflection.

11.7 Piping of six (6) inch diameter and larger shall require a minimum of two (2) weld passes to complete each weld. The first pass, or root pass, shall be applied at the bottom of the bevel cut using the short circuit transfer welding mode, and the second pass, or cap pass, shall be applied over the root pass using the spray or pulse arc transfer welding modes to insure that at a minimum the total weld thickness shall be equal to thinnest of the two pieces being welded together.

12. Pipe Supports:

12.1 Pipe supports by minimum sizing for:

- 8" and smaller piping shall be 2" x 3" x 3/16" wall rectangular tubing;
- 10" and larger piping shall be 3" x 4" x 1/4" wall rectangular tubing;
- 6" and larger piping shall be provided with "kick" bracing projecting fully from the underside of the pipe to the floor at an angle of no less than 15° from vertical out at a

right angle to the run of the pipe being supported. These “kick” braces shall be in addition to the vertical pipe supports called out above.

12.2 Pipe supports are to be fully welded at both end points to the pipe and steel floor where required.

12.3 Pipe supports are to be fully welded at both end points to the pipe and steel floor where required.

13. Fusion Bonded Epoxy Coating - Steel Piping:

13.1 Steel piping shall have applied to it a Fusion Bonded Epoxy Coating on the interior pipe surface that conforms to AWWA C-213-91 for steel water pipelines. The powder coating product shall be National Sanitation Foundation (NSF) Standard 61 certified material. The final product shall be capable of meeting Salt Spray Resistance ASTM B117 (1000 hour) with no blistering, undercutting or rust bleed; Humidity Resistance ASTM D2247 (1000 hour) with no blistering, undercutting or rust bleed; and Impact Resistance of ASTM G14-72 (160 in. lbs.). The Fusion Bonded Epoxy Coating shall provide a minimum total dry mil thickness of 12-16 mils. The epoxy powder coating shall be Pipe Clad® 1500 Red latest revision from Valspar, Inc.

13.2 Prior to shipment of the station, the station manufacturer shall provide in writing to the Engineer certification that the fusion bonded epoxy coating has been applied to all internal surfaces of the steel piping using the proper method. Said certification shall show under the station manufacturer’s letterhead:

- Date of application;
- Material manufacturer and product designation including a product data sheet for the coating;
- Applier of the fusion bonded coating, name, address and phone number;
- Notarized signature of an officer of the station manufacturing company stating the fusion bonded epoxy coating was applied to AWWA Standard C213-91 or the latest revision.

14. Tank Penetration Sleeve:

14.1 Tank wall penetrations for all pipes with interior epoxy fusion bonded coating shall include a tank penetration sleeve of at least 1/2 inch thickness. This sleeve shall be attached to the pipes prior to epoxy coating. The sleeve shall prevent destruction of the pipe coating at weld locations. This sleeve shall be shown on submittal drawings.

15. Service Connections On Internal Piping:

15.1 All plumbed devices within the station eventually requiring service, such as meters, control valves, pumps and like equipment, shall be easily removed from the piping by the presence of appropriately placed and sufficient quantity of adaptors and couplings as shown on the drawings; no less than the quantity of couplings and adaptors shown shall be allowed.

16. Restraining Points:

16.1 The main inlet and outlet piping to the station shall each be provided with two (2) or four (4) restraining points as welded on “eyes” or similar device welded to the capsule or framing to facilitate the attachment of joint restraint tie rods or other device to be used in retarding any pipe movement at the connections.

17. Compression Couplings:

17.1 The well control meter station piping shall include a compression type, flexible coupling to prevent binding and facilitate removal of associated equipment where shown on the plans for this item. In lieu of a compression coupling, a flanged coupling adapter (FCA) may be used.

17.2 All compression couplings flanged coupling adapters (FCA), and flexible connectors/expansion joints shall include a minimum of two (2) control joint rods with appropriate restraining points.

18. Combination Pressure Gauges:

18.1 Combination pressure gauges shall be glycerine filled with a built-in pressure snubber and have a 4-1/2 inch minimum diameter faces and be turret style, black phenolic case with clear glass face. The movement shall be rotary, of 400 Series stainless steel with teflon coated pinion gear and segment. The gauge shall be bottom connected and accept a 1/4" NPT female thread. Combination pressure gauge range and scale graduations shall be in psi and feet of water as follows:

- INLET PRESSURE - 0 to 200 psi, 20 psi figure intervals, with graduating marks every 2 psi (0-460 feet).
- OUTLET PRESSURE - 0 to 200 psi, 20 psi figure intervals, with graduating marks every 2 psi (0-460 feet).

18.2 All gauges will be panel mounted off the pipeline and be flexible connected to their respective sensing point. The gauge trim tubing shall be complete with both isolating and vent valves and the tubing shall be so arranged as to easily vent air and facilitate gauge removal. Gauges mounted directly to the pipeline or at the sensing point will not be accepted.

18.3 Gauges shall be Ashcroft Model 1279XLL. – NO SUBSTITUTIONS.

19. Hose Bib:

19.1 There shall be provided a standard hose bib with a 3/4" ball valve and pressure regulator.

20. Deep Well Pump Control Valve:

20.1 The deep well pump control valve is designed for installation on the discharge of the deep well pump line to eliminate starting and stopping surges caused by the pump. The pump is started and stopped with the valve in an open position.

20.2 The valve shall be hydraulically operated, single diaphragm-actuated, globe pattern. The stainless steel valve stem shall be guided by two bearings located in the cover and the power unit body.

20.3 The valve shall consist of four components: the body with seat installed, the power unit body with center bearing, the cover with bearings installed and the diaphragm assembly. The valve body, power unit body and cover shall be ductile iron. Packing glands and/or stuffing boxes are not permitted. There are no pistons operating the main valve or pilot controls. The valve shall be flanged to meet ANSI Class 150 and have a maximum pressure rating of 250 psi.

20.4 The valve operation shall be controlled by an externally mounted, four-way solenoid operated pilot. The solenoid shall be designed to operate on AC or DC current and have a manual operator installed. Copper tubing pilot control lines shall be provided. Opening and closing speed controls and shut off valves shall be provided.

20.5 An adjustable limit switch assembly shall be mounted on the main valve connected to the main valve stem. It shall be actuated by opening or closing of the valve and easily adjusted to operate at any point of the valve's travel. The limit switch will be used to complete the pump off cycle.

20.6 The Deep Well Pump Control Valve shall be Cla-Val Model 61G-02.

21. Gate Valves:

21.1 The isolation valves where shown and as sized on the plan sheet covering this item shall be a gate valve meeting or exceeding AWWA Standard C-500. The gate valve will be cast iron body, bronze mounted, resilient seat, NRS (non-rising stem). The valve will be flanged pattern with flange and drilling complying with ANSI B16.1, Class 125. The valve will be complete with handwheel operator and shall be constructed so as to open left (counter-clockwise). Maximum working pressure shall be 200 psi.

21.2 The Gate Valves shall be M&H Valve Model 4067-02.

22. Non-Slam Check Valves:

22.1 Each pipe run shall include a globe style, non-slam check valve flanged to meet ANSI Class 125. The body of the check valve shall be cast iron. The plug and seat shall be bronze and conform to ASTM Designation B-584. The seat shall contain a Buna-N seal to provide zero leakage. The seal design shall provide for both a metal to metal low and high pressure without over-loading or damaging the Buna-N seal. The guide bushings shall be bronze copper alloy and conform to ASTM Designation B-584. The valve spring and seat retainers shall be stainless steel and conform to ASTM Designation A-313. The valve plug shall be guided at both ends by a center shaft integral with the valve plug. Alignment of the center shaft shall be provided by guide bushings.

22.2 The Non-Slam Check Valves shall be Val-Matic Series 1800-BN.

23. Magnetic Flowmeter:

23.1 The magnetic flow meter shall consist of a flow tube, signal cable, and a remote mounted transmitter/display to measure flow rate and transmit an analog 4-20mA signal.

23.2 The flow tube shall be sized as shown on the plans. The housing material shall be carbon steel construction with corrosion resistant coating and ANSI Class 150 flanged connections. The flow tube shall be AISI Type 304 stainless steel. The meter shall include a Neoprene liner and AISA Type 316Ti stainless steel electrodes.

23.3 The flow tube is used with I/A Series magnetic flow transmitters to form a magnetic flow system. The transmitter uses a pulse dc technique to excite the flow tube coils and converts the signal to a digital 4-20mA output.

23.4 One (1) power supply shall be furnished. Input and output wiring shall be accomplished with an integral barrier strip terminal. The power supply shall withstand momentary short circuit without

failure. Input voltage shall be 120V AC, 60 Hz. Output voltage shall be 24V DC, <29 VDC with no load, >21 VDC at 100 mA.

23.5 The Magnetic Flowmeter shall be a Foxboro Series 9100 with IMT25 Transmitter/Display. Display shall be mounted in Above Grade Electrical Cabinet.

24. Meter Test Port:

24.1 The meter installation shall be complete with a meter test port as shown on the plans for this item. The test port shall be installed a minimum of two (2) diameters downstream measured from the center of the meter. The test port shall consist of a NPT coupling in the pipe downstream of the meter capable of accommodating a NPT threaded by hose connection adapter. The connection shall be plugged.

25. Pressure Testing:

25.1 When the station plumbing is completed, the pressure piping within the station, including valves, meters, control valves, fittings, and connections as make up the entire system shall be hydrostatically tested at a pressure of 175 psi or a pressure equal to the lowest test pressure rating of the equipment within the tested system, whichever is lesser pressure. The test pressure shall be applied for a minimum of 20 minutes, during which time all joints, connections and seams shall be checked for leaking. Any deficiencies found shall be repaired and the system shall be retested.

25.2 The results of this testing shall be transmitted in writing to the Engineer prior to shipment of the station and shall note test pressure, time at full pressure and be signed by the Quality Control Manager or test technician.

26. Equipment Grounding:

26.1 Each electrical equipment item in the station shall be properly grounded per Section 250 of the National Electrical Code. Items to be grounded include, but are not limited to, control panel, GFI convenience receptacles, dedicated receptacle for sump pump/dehumidifier, heater, lights, light switch, exhaust fans and pressure switches.

26.2 All ground wires from installed equipment shall be in conduit and shall lead back to the interface/junction panel to a plated aluminum ground buss specific for grounding purposes and so labeled. The ground buss shall be complete with a lug large enough to accept the installing electrician's bare copper earth ground wire. The buss shall serve as a bond between the earth ground and the equipment ground wires.

27. Electrical - Power Service To Above Grade Meter Main:

27.1 The electrical service provided for this station will be 277/480 volt, 3 phase, 60 cycle, 4 wire and fed for the above grade electrical service center cabinet.

28. Electrical Apparatus – Above Grade Electrical Cabinet:

28.1 All 480 volt circuit breakers, well pump motor starter, flow meter display/transmitter and owner supplied telemetry shall be incorporated into one (1) NEMA 12 Hoffman panel, 72"H x 60"W x 36"D, free standing, per the following:

- Drip shields over all four (4) doors;

- Stainless steel hinge pins;

- Both sets of doors fitted with padlocking handles & heavy duty 3-point latch mechanism in place of standard key locking hardware.

- Each door shall be equipped with two (2) doorstop kits.

- Open bottom except for a 2" inward flange on all four (4) sides. The flange shall be reinforced with a 1/4" thick angle frame.

- Internal Components - Mount on a strut framework not wood. Bottom gutter shall not be installed below cabinet openings.

  - Panel Heater - Hoffman Model DAH8001B - Thermostatically Controlled, Fan-driven heater unit, adjustable from 0 degree F to 100 degree F. Fan draws cool air from the bottom of the enclosure and passes the air across the thermostat and heating elements before being released into enclosure cavity. Heater shall be 800 watts, 115 volts, 7.37 amps.

  - Cooling Fan - Hoffman Model A6AXFN - Rigid housing will eliminate breakage and grounding problems. Maximum operating temperature is 158 degrees F. Fan will have ball-bearing construction and split-capacitor motors. Fan shall be size 6"; power connection shall be lead wires; voltage shall be 115 VAC; Amps shall be .36; Watts shall be 32; CFM shall be 240. Thermostat to be Honeywell Model T6051A1016.

  - Incandescent Light - Hubbell Model VX-152 - 100 Watt bulb, 3/4" hub, body, cover and globe.

29. Above Grade Electrical Cabinet – Telemetry Space

29.1 The above grade electrical cabinet will include space for a size 27" Wide x 30" Tall x 10" deep telemetry cabinet. Carson City is to supply this cabinet to be field-installed by the Contractor.

30. Above Grade Electrical Cabinet – Main Breaker

30.1 One (1) Main Breaker, GE SFHA Spectra Breaker, 480 Volt, 250 Amp Frame w/250 Amp Trip, minimum10,000 AIC, TF250S Enclosure, TNIA 250A Neutral Bar, SAST 1 Shunt Trip (for emergency trip via vault) high water level floats.

31. Electrical Apparatus – Servicenter – Mounted Above Grade

31.1 The unit shall incorporate a transformer, a primary main circuit breaker, a secondary main circuit breaker and a load center design breaker panel. Input voltage shall be 480 Volts; Output voltage shall be 120/240 volts; KVA shall be 10; Max branch spaces, 1 THQL, 2-Pole shall be 4; Max branch spaces, THQP, 1-Pole shall be 16; Max branch spaces, THQP, 2-Pole shall be 6; Breaker Rating - primary main shall be 50 Amp;

Breaker Rating - secondary Main shall be 50 Amp. All breakers associated with the conveniences shall be GFCI rated.

31.2 Servicenter shall be GE Model 9T2151100.

32. Electrical Apparatus - Adjustable Frequency Drives

32.1 This specification is to cover a complete Adjustable Frequency motor Drive (AFD) consisting of a pulse width modulated (PWM) inverter designed for use on a standard NEMA Design B induction motor.

32.2 Referenced Standards:

a. Institute of Electrical and Electronic Engineers (IEEE) - Standard 519-1992, IEEE Guide for Harmonic Content and Control.
b. Underwriters laboratories - UL508C
c. National Electrical Manufacturer's Association (NEMA) - ICS 7.0, AC Adjustable Speed Drives
d. IEC 16800 Parts 1 and 2

32.3 The AFD package as specified herein shall be UL listed as a complete assembly and enclosed in an integrated UL type 1 enclosure, assembled and tested by the manufacturer in an ISO9001 facility. The AFD tolerated voltage window shall allow the AFD to operate from a line of +30% nominal, and -35% nominal voltage as a minimum. Environmental operating conditions: 0 to 40°C continuous.

32.3 All AFDs shall have the same customer interface, including digital display, and keypad, regardless of horsepower rating. The keypad shall be removable, capable of remote mounting and allow for uploading and downloading of parameter settings as an aid for start-up of multiple AFDs.

32.4 The keypad shall include Hand-Off Auto selections and manual speed control. The drive shall incorporate bumpless transfer of speed reference when switching between Hand and Auto modes. There shall be fault reset and Help buttons on the keypad. The Help button shall include on-line assistance for programming and troubleshooting.

32.5 There shall be a built-in time clock in the AFD keypad. The clock shall have a battery backup with 10 years minimum life span. The clock shall be used to date and time stamp faults and record operating parameters at the time of fault. The clock shall also be programmable to control start/stop functions, constant speeds, PID parameter sets and output relays. The AFD shall have a digital input that allows an override to the time clock (when in the off mode) for a programmable time frame. There shall be four (4) separate, independent timer functions that have both weekday and weekend settings.

32.6 The AFDs shall utilize pre-programmed application macros specifically designed to facilitate start-up. The Application Macros shall provide on command to reprogram all parameters and customer interfaces for a particular application to reduce programming time. The AFD shall have two user macros to allow the end-user to create and save custom settings.

32.7 The AFD shall have cooling fans that are designed for easy replacement. Operating temperature will be monitored and used to cycle the fans on and off as required. The AFD shall be capable of starting into a coasting load (forward or reverse) up to full speed and accelerate of decelerate to setpoint without safety tripping or component damage (flying start).

32.8 The AFD shall have the ability to automatically restart after an over-current, over-voltage, under-voltage, or loss of input signal protective trip. The number of restart attempts, trial time, and time between attempts shall be programmable.

32.9 The overloading rating of the drive shall be 110% of its normal duty current rating for one

(1) minute every ten (10) minutes, 130% overload for two (2) seconds. The minimum FLA rating shall meet or exceed the values in the NEC/UL table 430-150 for 4-pole motors.

32.10 The AFD shall have an integral 5% impedance line reactors to reduce the harmonics to the power line and to add protection from AC line transients. The 5% impedance may be from dual (positive and negative DC buss) reactors, or 5% AC line reactors. AFDs with only one DC reactor shall add AC line reactors.

32.11 The AFD shall include a coordinated AC transient protection system consisting of 4-120 joule rated MOVs (phase to phase and phase to ground), a capacitor clamp, and 5% impedance reactors.

32.12 The VFD shall be capable of sensing a loss of load (broken belt/broken coupling) and signal the loss of load condition. Relay outputs shall include programmable time displays that will allow for drive acceleration from zero speed without signaling a false underload condition.

32.13 If the input reference (4-20mA or 2-10V) is lost, the AFD shall give the user the option of either (1) stopping and displaying a fault, (2) running at a programmable preset speed, (3) hold the AFD speed based on the last good reference received, or (4) cause a warning to be issued, as selected by the user.

32.14 The AFD shall have programmable Sleep and Wake up functions to allow the drive to be started and stopped from the level of process feedback signal.
All AFD to have the following adjustments:

a. Three (3) programmable critical frequency lockout ranges to prevent the AFD from operating the load continuously at an unstable speed.
b. Two (2) PID Setpoint controllers shall be standard in the drive, allowing pressure or flow signals to be connected to the AFD, using the microprocessor in the AFD for the closed loop control.
c. Two (2) programmable analog inputs shall accept current or voltage signals.
d. Two (2) programmable analog outputs (0-20mA or 4-20mA).
e. Six (6) programmable digital inputs for maximum flexibility in interfacing with external devices.
f. Three (3) programmable digital Form-C relay outputs.
g. Seven (7) programmable preset speeds.
h. Two (2) independently adjustable accel and decel ramps with 1 - 1800 seconds adjustable time ramps.

i. The AFD shall include a motor flux optimization circuit that will automatically reduce applied motor voltage to the motor to optimize energy consumption and audible motor noise.

j. The AFD shall include a carrier frequency control circuit that reduces the carrier frequency based on actual AFD temperature that allows the highest carrier frequency without derating the AFD or operating at high carrier frequency only at low speeds.

k. The AFD shall include password protection against parameter changes.

32.15 The Keypad shall include a backlit LCD display. The display shall be in complete English words for programming and fault diagnostics (alpha-numeric codes are not acceptable). All applicable operating values shall be capable of being displayed in engineering (user) units. A minimum of three operating values shall be capable of being displayed at all times.

32.16 The AFD shall have an RS-485 port as standard. The standard protocols shall be Modbus, Johnson Controls N2 bus, and Siemens Building Technologies FLN. Each individual drive shall have the protocol in the base AFD. All protocols shall be certified by the governing authority. Serial communications capabilities shall include, but not be limited to; run-stop control, speed set adjustments, current limit, accel/decel time adjustments, and lock and unlock the keypad. The drive shall have the capability of allowing the DDC to monitor feedback such as process variable feedback, output speed/frequency, current (in amps), percent torque, power (kW), kilowatt hours (resettable), operating hours (resettable), and drive temperature. The DDC shall also be capable of monitoring the AFD relay output status, digital input status, and all analog input and analog output valves. All diagnostic warning and fault information shall be transmitted over the serial communications bus. Remote VFD fault reset shall be possible. The following additional status indicates and settings shall be transmitted over the serial communications buss - keypad Hand or Auto selected, bypass selected, the ability to change the PID setpoint, and the ability to force the unit to bypass (if bypass is specified). The DDC system shall also be able to monitor if the motor is running in the AFD mode or bypass mode (if bypass is specified) over serial communications. A minimum of 15 field parameters shall be capable of being monitored. The AFD shall allow the DDC to control the drive's digital and analog outputs via the serial interface. This control shall be independent of any AFD function.

32.17 All AFDs shall include EMI/RFI filters. The onboard filters shall allow the AFD assemble to be CE Marked and the AFD shall meet product standard EN 61800-3 for the First Environment restricted level.

32.18 All AFDs through 50 HP shall be protected from input and output power mis-wiring. The AFD shall sense this condition and display an alarm on the keypad.

32.19 The Adjustable Frequency Drive Unit shall be ABB Model ACH-550-VDR.

32.20 The system shall be completely factory integrated and tested prior to delivery of the station. The complete system shall be U.L. 508A listed.

32.21 One (1) Well Pump Breaker, GE SFHA Spectra Breaker, 480 Volt, 250 Amp Frame, w/200 Amp Trip.

32.22 Starter Control Circuit Transformer - An industrial control circuit transformer shall be provided. It shall have epoxy encapsulated coils with molded terminal barriers, molded-in terminals and phil-slot screws. Transformer shall be provided with primary J-2 jumpers and secondary fuse clips.

32.23 Control Circuit Transformer shall be Micron Industries Model Impervitran.

32.24 PHASE MONITOR - A phase monitor shall be supplied to protect three-phase equipment against phase loss, undervoltage and phase reversal conditions. When a fault is sensed, the monitor output relay opens within two seconds or less to turn the equipment off and/or cause an audio or visual alarm. Both Delta and Wye systems may be monitored. The monitor shall have an automatic reset and shall also include an adjustable voltage delay. The monitor shall have an indicator LED (glows when all conditions are normal and shall monitor phase sequence: ABC operate (will not operate CBA). The phase monitor shall be UL approved and CSA certified.

32.25 RUNNING TIME METER - A running time meter shall be supplied for each pump to show the number of hours of operation. The meter shall be enclosed in a dust and moisture proof molded plastic case, suitable for flush mounting on the main control panel. The meter dial shall register in hours and tenths of hours up to 99999.9 hours before repeating. The meter shall be suitable for operation from a 115 volt, 60 cycle supply.

33. Electrical Apparatus - Discharge Pressure Control - Mounted Above Grade In Electrical Cabinet

33.1 Discharge control of the well pumping operation shall be provided by a bellows type, adjustable differential pressure switch. The switch shall be complete with a single pole, double throw contact block with 5 amp non-inductive rated contacts at 230 volts AC. The set points of the on/off cycle shall be independently adjustable through the full range of the switch rating.

- High Discharge Lockout, 25-200 psi.
- Approximate Deadband, 8 psi.

33.2 A pressure gauge shall be sub-panel mounted adjacent to the high discharge pressure switch. The gauge and switch shall be so plumbed with the suction header sensing line that a common blow-off valve can relieve pressure in both simultaneously for purposes of checking and calibrating the high discharge lock-out.

33.3 The Pressure Switch shall be Mercoid Model 1005W-B3-D.

34. U.L. Listing

34.1 All service entrance, power distribution, control and starting equipment panels shall be constructed and installed in strict accordance with Underwriters Laboratories (UL) Standard 508A “Industrial Control Equipment.” The UL label shall also include an SE “Service Entrance” rating stating that the main distribution panel is suitable for use as service entrance equipment. The panels shall be shop inspected by UL, or constructed in a UL recognized facility. All panels shall bear a serialized UL label indicating acceptance under Standard 508A and under Enclosed Industrial Control Panel or Service Equipment Panel. In addition, a photocopy of the UL labels for this specific project shall be transmitted to both the project engineer and the contractor for installation within their permanent project files, prior to shipment of the equipment covered under these specifications.

35. E.T.L. Listing

35.1 All control panels shall be E.T.L. Listed by Interek Testing Services (ITS) under Category 4 - Industrial Control Equipment. Each completed panel shall bear an E.T.L. listing label. The listing label shall include the station manufacturer's name, address and telephone number. The station manufacturer shall have quarterly inspections performed by ITS at the manufacturer's facilities to ensure that the products being listed comply with the report and procedural guide for that product.

36. Electrical Apparatus - Conduit and Wiring

36.1 The service entrance conduits shall be rigid steel conduit, individually sized to accept the inbound service conductors and telemetry/telephone/radio cables, and shall be installed from the main power or control panel through the equipment capsule side sheet and terminate exterior to the equipment capsule. The service entrance exterior conduit connection points shall be capped or plugged for shipment.

36.2 All wiring within the equipment capsule and outside of the panel shall be run in conduit except for the watertight flexible conduit and fittings used to connect fan motors, solenoid valves, limit switches, etc., where flexible connections are best utilized. Only the sump pump and dehumidifier, where furnished by the original manufacturer with a UL approved rubber cord and plug, may be plugged into a receptacle.

36.3 EQUIPMENT CAPSULE CONDUIT - Rigid, heavy wall, Schedule 40 PVC with solvent weld moisture-proof connections, in minimum size 3/4" or larger, sized to handle the type, number and size of equipment conductors to be carried - in compliance with Article 347 of the National Electrical Code and NEMA TC-2, Federal WC-1094A and UL-651 Underwriters Laboratory Specifications.

36.4 FLEXIBLE CONNECTIONS - Where flexible conduit connections are necessary, the conduit used shall be liquid-tight, flexible, totally nonmetallic, corrosion resistant, nonconductive, U.L. listed conduit sized to handle the type, number and size of equipment conductors to be carried - in compliance with Article 351 of the National Electrical Code.

36.5 MOTOR CIRCUIT CONDUCTORS - Sized for load. All branch circuit conductors supplying a single motor of one (1) horsepower or more shall have an ampacity of not less than 125 percent of the motor full load current rating, dual rated type THHN/THWN, as set forth in Article 310 and 430-B of the National Electrical Code (NEC), Schedule 310-13 for flame retardant, heat resistant thermoplastic, copper conductors in a nylon or equivalent outer covering.

36.6 CONTROL AND ACCESSORY WIRING - Sized for load, type MTW/AWM (Machine tool wire/appliance wiring material) as set forth in Article 310 and 670 of the National Electrical Code, Schedule 310-13 and NFPA Standard 79 for flame retardant, moisture, heat and oil resistant thermoplastic, copper conductors in compliance with NTMA and as listed by Underwriters Laboratories (AWM), except where accessories are furnished with a manufacturer supplied UL approved rubber cord and plug.

37. Electrical Apparatus - Receptacles

37.1 Two (2), 20 amp receptacles shall be provided in the capsule. All breakers associated with these receptacles shall be GFCI breakers only.

38. Convenience Group – Lighting In Vault

38.1 There shall be one (1) or more two-tube, 32 watt per tube, impact-resistant, UV-stabilized, reinforced polyester fiberglass housing, shatter-resistant 15% DR acrylic diffuser standard, poured in gasketing, captive, corrosion-resistant, forty-eight (48) inch minimum length fluorescent light fixtures installed within the equipment capsule, as shown on the plan for this item. Ballast shall be thermally protected, resetting, T8 electronic, rapid start, Non-PCB, UL Listed, CSA Certified. The light switch shall be of the night glow type and be located within the hatch periphery. The light switch shall be wired to operate the exhaust fan equipment whenever the equipment capsule lights are on. Open fluorescent or incandescent fixtures will not be accepted.

38.2 Enclosure Light Shall be DMW-2-32-0-120-GEB10RS.

39. Electrical Apparatus - Pressure Transmitters (2 Each) - Mounted In Vault

39.1 A pressure transmitter shall be provided. It shall incorporate polysilicon thin film technology. Accuracy shall be 1%. Transmitter shall be FM approved. Enclosure shall be stainless steel NEMA 4X. Cable shall be No. 36 AWG PVC shielded, vented, UL approved. Diaphragm shall be 17-4 PH stainless steel. Pressure connection shall be 1/4” NPT-M. Output signal shall be 4-20mA.

39.2 The Pressure Transmitter shall be Ashcroft Model K1-7-M02-42-C1.

40. Convenience Group - Ultrasonic Ceiling Sensor – In Vault

40.1 An ultrasonic ceiling sensor shall be provided to control lighting based on occupancy. Sensor shall be solid state, crystal-controlled (25 kHz ± 0.005%). Sensors shall be temperature and humidity-resistant. Unit shall have an adjustable time delay from 15 seconds to 15 minutes.

40.2 Ultrasonic Ceiling Sensor shall be Watt Stopper Series W.

41. Convenience Group – Heater (Below Ground Station And Above Grade Chem Feed)

41.1 One (1) each, wall mounted as shown.

41.2 Rating - 10,240 BTU/HR - 3000 watts, 230 volt.

41.3 Enclosed resistance wire within steel finned element.

41.4 Control - thermostat.

41.5 UL listed.

41.6 Vane axial fan - down flow discharge.

41.7 Hard wired in conduit per UL 400-1.

42. Convenience Group - Exhaust Fan (Below Ground Station And Above Grade Chem FEED)

42.1 One (1) each installed as shown.

42.2 Capacity each 230 cfm at .2 inch static pressure.

42.3 Permanent split capacitor motor/blower.

42.4 Hard wired in conduit to conduit box on motor per UL 400-1.

42.5 120 volt A.C. operation from hatch mounted limit switch and HAND/AUTO switch on main control panel.

42.6 Hatch installed limit switch to activate exhaust fan whenever the entrance hatch is open.

42.7 Exhaust air piping - 3 inch minimum.

42.8 Air return piping - 3 inch minimum.

42.9 Exhaust and return piping protected by 180º PVC return bend with removable insect screen.

42.10 When exhaust fans and an air conditioner or fan coil cooling unit are both used, the exhaust fans' control wiring shall contain relay contacts (normally closed) that open the exhaust fans' circuit whenever an air conditioner or fan coil cooling unit is in operation.

43. Convenience Group - Sump Pump (Installed In Vault)

43.1 One (1) each installed as shown.

43.2 Capacity 19 gpm at 15 feet TDH.

43.3 Impeller - glass filled valor.

43.4 Cast iron motor shell, switch cap and pump housing.

43.5 UL listed submersible oil filled motor - UL listed rubber power cord - 120 volt AC operation.

43.6 Float operated, submersible (NEMA 6) mechanical switch.

43.7 Completely submersible hermetically sealed.

43.8 Auto reset thermal overload protection.

43.9 PVC pump discharge piping 1 1/2" x 1 1/4" with single check valve - union both sides.

43.10 Provision for dewatering drain system for freeze protection.

ABOVE GRADE SODIUM HYPOCHLORITE FEED UNIT

44. Equipment Base

44.1 The plate steel employed throughout the equipment base shall meet or exceed the requirements for ASTM A-36. The structural shapes (channels and angles) shall be of the thickness/weight as shown on the plans for this item and shall meet or exceed the requirements for ASTM A-36. The design of all members shall be in accordance with the recommended practice for design as specified in the MANUAL OF STEEL CONSTRUCTION, published by the American Institute of Steel Construction, Inc.

44.2 The equipment base shall be one completed unit when delivered. The equipment base design shall accommodate both lifting from above the unit by a hoist or crane and lifting from below by a fork lift.

45. Equipment Enclosure

45.1 The equipment enclosure shall be a hand layup, molded fiberglass cover containing but not limited to the following raw material:

- Resins - Resins shall be thermosetting, medium reactivity, rigid fire resistant polyester containing maximum monomer content of 42% and a maximum of 11% Thixotropic additive.

- Glass Fiber - Glass Fiber reinforcement shall be K filament type E Borosilicate glass having high performance chrome-complex or silane finish compatible with polyester resins.

- Gelcoat - Exterior surface coating shall be ultraviolet light stabilized, weather resistant, polyester base containing fade resistant color pigments, and such inert extenders as are appropriate to maintain total pigment volume concentration less than 20%.

- Interior Coating - Interior laminate coating when required shall be a pigmented heat resistant high gloss polyester base surfacing sealer.

- Other Materials - Organic peroxide catalysts and promoters appropriate to the resin-type shall be used as necessary to provide thorough cure.

45.2 The equipment enclosure when installed shall be hinged at one end. A minimum of four (4) butt type hinges will be used and each hinge will have a removable hinge pin. The hinges will be affixed to the cover by bolting and be complete with a full span aluminum internal support arms. Bolts and nuts of the hinging system will not directly bear on the fiberglass cover, but bear only on each hinge and the backing bar. The hinges will allow the cover to open fully to expose all interior equipment.

45.3 Two (2) pneu-spring inert gas over oil spring-loaded opening assist automatic cylinders shall be supplied to counterbalance the weight of the fiberglass cover to ease the opening and closing function. The cylinders shall be complete with internal orifice-type valve that dampens the extension motion, but permits undampened compression.

45.4 The equipment enclosure shall be secured from unauthorized entry by a simplex, weather resistant padlock system. Where more than one (1) cover is used or more than one (1) booster station is supplied, the padlocks will be keyed alike. Two (2) keys will be provided for each padlock, with each set of keys on a key ring complete with the manufacturer's identification and service telephone number. The equipment enclosure cover shall have affixed in a prominent location the logo of the manufacture.

45.5 The equipment enclosure shall be insulated with an isocyanurate (flame retardant urethane) foam insulating material. The insulation shall be applied to the interior of the cover by spray and other approved methods. The insulation shall have a minimum density (compressibility) of 2.25 lbs/cu. ft. nominal and shall be applied to the thickness required to provide a minimum R value of 21.

45.6 The equipment enclosure cover shall be complete with a minimum of one (1) galvanized lifting handle. The handle will be affixed to the long side of the cover. The handle will be so located as to allow the equipment enclosure cover to be easily tilted to expose completely the mechanical/electrical equipment contained therein. The handle will be bolted through the cover and through an aluminum backing bar. Handles screwed directly to the cover will not be acceptable.

45.7 DELIVERY - CHEMICAL FEED STATION PROTECTION - Each completed above ground chemical feed station shall be completely encased (with the exception of the underneath portion of the base) in a shrink wrap, polyethylene plastic enclosure to protect the transported unit from

adverse elements encountered during shipment. The plastic enclosure shall be of Griff-Shrink 5-ply VCI clear reinforced shrink film as manufactured by Reef Industries.

46. Corrosion Protection - Base Only

46.1 All surfaces of the entire structure shall be gritblasted equal to commercial blast cleaning (SSPC_SP6).

46.2 Following grit blasting, all weldments will be pretreated by hand using Tnemec Series 61 Tneme-Liner Cycloaliphatic Amine Epoxy Coating to provide additional corrosion protection. Following the pretreatment full coating application shall take place.

46.3 The full protective coating shall take place immediately after surface preparation. The protective coating shall be Tnemec Series 61 Tneme-Liner Cycloaliphatic Amine Epoxy Coating consisting of a two-component, epoxy system formulated for high build application for protection and finishing of steel and having excellent chemical and corrosion resistant properties. The epoxy system shall be self-priming and require no intermediate coatings. The protective coating shall provide in two (2) applications a total dry mil thickness of 8.0 to 12.0 mils DFT. The final coat of the structure's interior will have two (2) layers of 1.5 ounces of fiberglass reinforcing matting applied to the internal structure with a polyester based resin. The fiberglass matting shall run in opposite directions so no seams are aligned. The fiberglass will be top coated with a UV resistant gel-coat, white in color to protect the fiberglass from UV rays. When completed, the fiberglass coating shall be impervious to water/chemical penetration to protect the steel substructure.

47. Chemical Metering Equipment

47.1 Two (2) solenoid driven metering pumps, suitable for metering of 12% to 15% solution of sodium hypochlorite, shall be installed.

47.2 The chemical feed equipment shall include two (2) positive displacement diaphragm metering pumps. The pump shall be instrument responsive and shall have a selector switch for either manual or automatic start/stop control. Stroke length shall be adjustable and used for dosage control. The pump shall be capable of metering 2.5 gallons per day maximum against 175 psig injection pressure. The pump shall be similar and equal to LMI Model C761-460BI, and suitable for operation with sodium hypochlorite solution. The pump shall be equipped with a bleed four-function valve. A 3/4" NPT corporation stop and PVC solution tube shall be included and mounted to the water line, located in the well control/meter vault as shown on the plans. A PVC bodied back pressure / anti-siphon valve shall be installed directly to the input of the chemical solution tube.

47.3 Chemical storage day tank shall be provided with one (1) 55 gallon tank with non-vented manway lid. Tank shall be installed on 12" high poly tank stand to allow for a flooded suction feed to the chemical pumps. The tank shall be hi-density, linear polyethylene (HDLPE), natural white color. The tank shall comply with FDA Regulation 177.1520 and NSF/ANSI 61 Standards. All materials are UV stabilized for long-term outdoor service.

47.4 The chemical metering pump shall operate off start and stop signals from the well pump starting signal. A receptacle shall be provided to power the metering pumps at all times.

47.5 A calibration cylinder, valving and piping shall be furnished and installed on a poly based backpan to enable accurate calibration. The calibration cylinder shall have a minimum volume of 100 milliliters, and be a Koflo Calibration Column or equivalent. The calibration column shall be piped and valved as shown on the chemical piping schematic.

47.6 A chemical injector shall be provided. The injector main connection shall be a brass corporation stop. Thread connection shall be male NPT and capable of withstanding maximum water main

pressure. Solution tube shall be sized to match pump discharge line or injection flow rate. A ball check valve shall be included to prevent backpressure from the main from entering chemical feed system. A stainless steel safety chain shall be included to prevent withdrawal of solution tube past corporation stop. The solution line shall be flexible tubing. The flexible tubing shall allow for removal of injector from main without disassembly of pump discharge line. The Chemical injector shall be SAF-T-FLO Series EB-145-B-P-6-0.

48. Electrical Apparatus Telemetry Control Interface/Junction Panel (Above Grade Chemical Feed Unit)

48.1 It will be the responsibility of the station manufacturer to provide the following.

- Two (2) 2" diameter conduit sleeves to be installed to facilitate electrical wiring and chemical feed lines.
- Size 12" x 12" Fiberglass Type 4X telemetry interface panel/junction panel.
- Separate 120 volt single phase power circuit in conduit to the telemetry interface panel.
- Telemetry control circuits made up and in conduit from main control panel to telemetry interface panel terminal strip.

49. Electrical Apparatus Devices - Above Grade Chemical Feed Station

49.1 Hand_Off-Automatic switches shall be oil tight, 3-position maintained and be located on the interface/junction door, and control the following circuits:

- Exhaust Fan (2-position) Run-Auto

49.2 Nameplates shall be furnished on all panel front mounted switches.

50. Electrical Apparatus Devices - Leak Detector

50.1 Electronic chlorine gas detector to detect chlorine at less than 1 MGL in the air in the equipment area. Detector shall be wired to interface panel with connection wired to the receiver located in the electrical cabinet. Detector shall be wired to activate a signal back through SCADA. The leak detector shall be equipped with a battery backup and power supply.

50.2 The Leak Detector Assembly shall be a Wallace & Tiernan Acutec 35 single point detector.

51. Factory Start-Up Service

51.1 Start-up service technician shall be a regular employee of well head / master meter station manufacturer.

51.2 As part of the submittal covering this equipment, list the factory service manager, his employee number, his telephone number with extension and his number of years with the company. List also each start-up service technician, his employee number and years of service with the company.

51.3 Verify that one (1) or more of the service technicians listed above will perform the required start-up service on the equipment covered in the submittal.

51.4 One (1) full day at job site for start-up and training.

51.5 Start-up service to include two (2) bound O&M manuals and two (2) CDs.

51.6 Start-up service report attested to by start-up technician and representative of owner or engineer.

51.7 Service report distributed to:

- Manufacturer's File
- Engineer's File
- Contractor's File
- Owner's File

52. Manufacturer's Warranty

52.1 The warranty is the sole responsibility of the station manufacturer and that manufacturer's warranty shall be provided in written form for inclusion with both the submittal covering the specified equipment and the O&M manuals provided with that equipment.

52.2 Said manufacturer's warranty shall at a minimum cover:

- A period of one (1) year commencing upon successful start-up, after authorized manufacturer's start-up, not to exceed eighteen (18) months from the date of shipment.
- The warranty period shall be inviolate regardless of any component manufacturer's warranty for equipment and components within the station.
- The manufacturer's warranty shall cover all equipment, components and systems provided in or with the station by the manufacturer of the station, exclusive of those components supplied by and/or installed by others independent of the manufacturer of record for this station.
- The warranty shall provide for the station manufacturer to bear the full cost of labor and materials for replacement and/or repair of faulty or defective components so there shall be no cost incurred by the Owner for this work during the warranty period.
- The manufacturer's warranty policy is amended only by the items considered consumables, i.e., light bulbs, pump seals, pump packing, lubricants and other maintenance items consumed by usage.
- No assumption of contingent liabilities for any component failure during manufacturer's warranty is made.
- It is the intent of this manufacturer's warranty to gain for the owner a single source responsible party for all components specified herein. "Second party" or "pass through" warranties will not be accepted.
- If the submitted written manufacturer's warranty does not meet the minimum requirements set forth above, that submittal will forthrightly be rejected.

53. General Liability Insurance

53.1 The well head/master meter station manufacturer shall furnish premises/ operations and products/completed operations general liability insurance from an insurance company with a rating of A-V according to the most recent Best's Key Rating Guide, in an amount equal to $10,000,000 per occurrence. The insurance certificate must be included with the manufacturer's

submittal. The coverage must be provided by an insurance carrier licensed and admitted in the state of manufacture.

54. Foundation:

54.1 The manufacturer shall submit a design for the foundation. An engineer licensed in the State of Nevada for structural engineering shall perform the building foundation design, and the foundation design must bear the seal and signature of the engineer.

END OF DOCUMENT 6015

CARSON CITY PURCHASING & CONTRACTS
TECHNICAL SPECIFICATIONS

Document No. 6016 ELECTRICAL ACCEPTANCE TESTING(3/24/10)

1 GENERAL

1.1 DESCRIPTION

The electrical equipment and conductors to be tested are specified herein and shown on the electrical drawings of the Contract Documents.

The Contractor shall retain an independent InterNational Electrical Testing Association (NETA) member Engineering and Testing Firm (Testing Firm) for specified on-site acceptance testing of the project electrical power distribution system and utilization equipment covered by this contract.

The Testing Firm shall be responsible for the Short Circuit and Protective Device Coordination Report as specified in Specification 6017. The Testing Firm shall verify the protective device settings are implemented in accordance with Specification 6017. The Testing Firm work includes the ARC-Fault equipment labeling work as specified in Specification 6017.

The manufacturer of the electrical equipment supplied for the project shall complete their on-site factory inspection, testing, and setup prior to the Testing Firm's Acceptance Testing and subsequent Protective Device setting verification work. The power monitors shall be set up by the factory representatives and power monitor readings and settings verified by the Testing Firm.

1.2 REFERENCES

This section contains references to the latest published version of the InterNational Electrical Testing Association's (NETA) Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems (ATS).

The NETA acceptance testing specification (NETA ATS) including procedures and test forms is part of this section as specified and modified for this project. In case of conflict between the requirements of this section and NETA ATS document, the requirements of this section shall prevail. Request clarification from the Engineer for document conflict resolution of the testing requirements.

1.3 TESTING APPLICATION

Calibrated test equipment with calibration stickers is required for electrical acceptance tests. The required tests, including correction of defects where found, and subsequent retesting, shall be completed prior to energizing electrical distribution system, utilization systems, and conductors and completed prior to functional testing. The installation of the protective device, breaker, and relay settings shall be completed and verified.

1.4 TESTING FIRM QUALIFICATIONS

The Testing Firm and their proposed project team shall possess the following minimum qualifications:

1. Testing Firm shall be an independent testing organization providing unbiased testing authority, professionally independent of the manufacturer, suppliers, and installers of equipment or systems to be evaluated by the Testing Firm.

2. Testing Firm shall be regularly engaged in the testing of electrical equipment, devices, installations, and systems.

3. Testing Firm shall be a member company of the InterNational Electrical Testing Association (NETA), a NETA Associate Member company providing testing in accordance with NETA ATS published specifications, or the pre-approve firms that use the NETA methods and published testing specifications. If firm's own published testing specifications are proposed, then submit a copy to the Engineer for acceptance.

4. Testing Firm's lead technical person shall be currently certified by NETA or the National Institute for Certification in Engineering Technologies (NICET) in electrical power distribution systems testing. Submit proof of technical training and certification for performing testing work.

5. Testing Firm's technicians shall be regularly employed, qualified testing staff.

The following are pre-qualified Testing Firms:

1. Emerson-Electrical Reliability Systems

1.5 SUBMITTALS

Contractor shall submit the following information in accordance with General Conditions Submittals:

A. TESTING FIRM QUALIFICATIONS:

For any Testing Firm not pre-qualified, the Contractor shall receive Engineer approval of the proposed Testing Firm and their project team prior to the Pre-Test Submittals.

1. Project Team: Identify lead technical person and testing staff. Provide documentation of training and experience demonstrating compliance with the qualifications specified.

2. Testing Firm: Provide reference names and current phone numbers of the Owner, Contractor, and Engineer that has knowledge of the Firm's work:

   a. Three projects for Owner completed within the past four years, or

   b. Three projects for Brown and Caldwell completed within the past four years, or

   c. Provide references for five recent projects that were completed within the last four years. Provide a description of the scope of the referenced project.

3. For Testing Firm's experience to be judged acceptable, the Contractor shall demonstrate that the proposed Testing Firm's reference projects are of similar scope and size to this project, and in performing these projects the following has been achieved:

   a. Testing Firm's work did not delay the projects or adversely impact the progress of the Contractor's work or the Owner's project.

   b. Specified requirements were achieved.

   c. Work was performed in accordance with NETA ATS or other Engineer accepted criteria.

   d. Submittals approved with two or fewer re-submittals after the initial submittal.

   e. No warranty claims related to the Testing Firm's work.

4. Provide documentation demonstrating compliance with the qualification specified.

B. POST-TEST SUBMITTALS:

1. Test Reports specified in Part 3 of this Section.

2 PRODUCTS

2.1 TESTING EQUIPMENT AND INSTRUMENTS

The test equipment, instruments and devices used for testing shall be calibrated to test equipment standards with references traceable to the National Institute of Standards and Technology.

The test equipment, instruments and devices shall have current calibration stickers indicating date of calibration, deviation from standard, name of calibration laboratory and technician, and date of next recalibration.

3 EXECUTION

3.1 GENERAL

The Contractor shall submit a schedule for the Testing Firm work and notify the Engineer 30 days prior to commencement of any witnessed testing.

3.2 INSTALLATION CONTRACTOR TESTING

A. GENERAL:

The following specified tests, including correction of defects where found and the subsequent re-testing, shall be completed prior to energization of the equipment or systems. Submit all completed test report forms in a 3-ring binder type notebook at the project Substantial Completion date.

B. PRE-FUNCTIONAL CHECKOUT:

Prior to energizing equipment, the Contractor shall perform a pre-functional checkout of the power and the control circuit. Protective devices shall be installed and available for service and calibrated or adjusted with specified setpoints installed. Contractor selected initial setpoints shall be installed and recorded, when specified setpoints are not required from the manufacturer or the Engineer.

Contractor shall submit a description of proposed test and checkout procedures conforming to the following requirements, including a schedule for conducting these procedures, not less than 30 days prior to the performance of pre-functional testing.

Pre-functional checkout shall consist of energizing each control circuit and operating each control device, protective device, monitoring or alarm device, and each interlock and verify the specified action or response occurs.

C. FUNCTIONAL TESTING:

Prior to functional testing, all protective devices shall be adjusted and made operative. Prior to energization of associated equipment, perform a functional checkout of all electrical and instrumentation control circuits as specified in the following. Checkout shall consist of energizing each control circuit and operating each control, alarm, safety device, and each interlock, in turn, to verify that the specified action occurs.

Record and submit data sheets as specified.

3.3 TESTING FIRM ACCEPTANCE TESTING REQUIREMENTS

A. ACCEPTANCE TEST REPORTS:

The Contractor shall maintain a written record of all inspection and test results and, upon completion of the project, shall assemble and certify a final test report

A copy of the preliminary test results shall be provided to the Engineer at the end of each day of testing.

Furnish two copies of the complete acceptance testing final report to the Engineer at Substantial Completion of the project.

3.4 PROTECTIVE DEVICE FIELD SETTINGS

The Testing Firm shall verify, and certify in the acceptance test final report, that the protective device coordination study settings for new and existing equipment based on the Short Circuit and Protective Device Coordination Report specified in Specification 6017 have been implemented and recorded on the Testing Firm's Data Sheets.

3.5 ARC FLASH STUDY RESULTS

The Testing Firm shall provide and install labels on the project electrical equipment for personnel protective clothing requirements as specified in Specification 6017.

END OF DOCUMENT 6016

Document No. 6017 Short Circuit and Protective Device Coordination Report

1. GENERAL

1.1 DESCRIPTION

A. GENERAL:

This section specifies that the Contractor subcontract an independent full member NETA Engineering and Study Firm/Testing Firm to prepare:

1. Electrical equipment short circuit study for all facility new and existing equipment.
2. Arc flash study for all equipment.
3. Protective device coordination study report for all equipment in the facility electrical power system.

The Testing Firm shall be as described in Specification 6016 and shall also be responsible for the electrical testing described therein.

B. SCOPE:

The Short Circuit and Protective Device Coordination Report shall include analysis including Utility Company equipment that affect the installed equipment's short circuit ratings, protective device ratings and protective device settings.

Report shall also include analysis of the equipment's short circuit ratings, protective device ratings and protective device settings affected by the installed equipment.

Report shall include the results of the arc flash hazard analysis study for energized electrical equipment in accordance with the methods outlined in IEEE Standard 1584 and stated hereinafter.

Work shall include the fabrication of signs with the arc flash hazard study results and the installation of the signs on the equipment in accordance with NFPA 70E Table 3-3.9.3 that includes the personnel protective equipment (PPE) risk category, the energy available, and the clothing recommendation.

The following equipment shall be included in the scope of the studies specified in this section:

1. Service Entrance Meter/Main
6. Lighting and power distribution panels.
7. Feeder cables between all equipment and CP3, 4, and 5.

1.2 REFERENCES

This section contains references to the following documents. They are a part of this section as specified and modified. Where a referenced document contains references to other standards, those documents are included as references under this section as if referenced directly. In the event of conflict between the requirements of this section and those of the listed documents, the requirements of this section shall prevail.

Unless otherwise specified, references to documents shall mean the documents in effect at the time of Advertisement for Bids or Invitation to Bid (or on the effective date of the Agreement if there were no Bids). If referenced documents have been discontinued by the issuing organization, references to those documents shall mean the replacement documents issued or otherwise identified by that organization or, if there are no replacement documents, the last version of the document before it was discontinued. Where document dates are given in the following listing, references to those documents shall mean the specific document version associated with that date, regardless of whether the document has been superseded by a version with a later date, discontinued or replaced.

Reference	Title
IEEE 141	Recommended Practice for Electric Power Distribution for Industrial Plants
IEEE 242	Recommended Practice for Protection and Coordination of Industrial and Commercial Power Systems
IEEE 1584	Guide for Performing Arc-Flash Hazard Calculations
NETA ATS	Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems, 1999
NFPA 70E	Standard for Electrical Safety In the Workplace

1.3 SCHEDULE

The report shall be completed, submitted to the Engineer for acceptance and reworked to include the Engineer comments and corrections, as required. The report shall be approved by the Engineer prior to purchase and fabrication of electrical equipment including switchgear.

A copy of the Engineer accepted report shall be sent by the Contractor to all affected manufacturers prior to fabrication.

1.4 SUBMITTALS

The report specified in this Section shall be provided in accordance with General Conditions.

2. PRODUCTS

2.1 REPORT

The product shall be a certified report summarizing the short circuit and coordination study and conclusions or recommendations which may affect the integrity of the electric power distribution system. As a minimum, the report shall include the following:

1. The equipment manufacturer's information used to prepare the study.

2. Power Utility Company system information applicable to the project.

3. Short circuit calculations listing short circuit levels at each bus. Provide a sketch of the bus and use both the project term and the bus-code-name to identify the bus, branches, sources, loads. Base the system on the Project One-Line diagram.

4. Coordination study time-current curves including the instrument transformer ratios, model numbers of the protective relays, and the relay settings associated with each breaker.

5. Comparison of short circuit duties of each bus to the interrupting capacity of the equipment protecting that bus.

6. Data used as input to the report that includes cable impedances, source impedances, equipment ratings for the equipment being purchased for the project, etc.

7. Assumptions made during the study.

3. EXECUTION

3.1 GENERAL

Provide a short circuit and coordination study on the electrical power distribution system as specified and as described in Section 6.1 of NETA ATS. The studies shall be performed in accordance with IEEE Standards 141 and 242 and shall utilize the ANSI method of short circuit analysis in accordance with ANSI C37.010.

The studies shall be performed using actual equipment data for both existing and new equipment. The coordination study shall use the data from the same manufacturer of protective relay devices as being provided by the switchgear manufacturer.

3.2 QUALIFICATIONS

The short circuit and coordination report shall be performed by the Testing Firm as described in Specification 6016. The studies shall be signed by the professional electrical engineer responsible for the studies and registered to practice engineering in the state in which the project is located.

3.3 SHORT CIRCUIT STUDY

The Contractor shall be responsible to obtain and verify all data needed to perform the study. As a minimum, the short circuit study shall include the following:

A. One-Line Diagram

1. Location and function of each protective device in the system, such as relays, direct-acting trips, fuses, etc.

2. Type designation, current rating, range or adjustment, manufacturer's style and catalog number for all protective devices.

3. Power, voltage ratings, impedance, primary and secondary connections of all transformers.

4. Type, manufacturer, and ratio of all instrument transformers energizing each relay.

5. Nameplate ratings of all motors and generators with their subtransient reactances. Transient reactances of synchronous motors and generators and synchronous reactances of all generators.

6. Sources of short circuit currents such as utility ties, generators, synchronous motors, and induction motors.

7. Significant circuit elements such as transformers, cables, breakers, fuses, reactors, etc.

8. Emergency as well as normal switching conditions, as applicable.

9. The time-current setting of existing adjustable relays and direct-acting trips, as applicable.

B. Impedance Diagram

1. Available MVA, voltage, and impedance from the power utility company.

2. Local generated capacity impedance.

3. Bus impedance.

4. Transformer and/or reactor impedances.

5. Cable impedances.

6. Equipment impedances.

7. System voltages.

8. Grounding scheme for the project: resistance grounding, solid grounding, or no grounding.

C. Calculations

1. Determine the paths and situations where short circuit currents are the greatest.

2. Study shall address bolted faults and calculate the 3-phase and line-to-ground short circuits of each case.

3. Calculate the maximum and minimum fault currents.

3.4 ARC FLASH ANALYSIS

The Contractor shall be responsible to obtain and verify all data needed to perform the study. The arc flash analysis study shall include the following IEEE Standard 1584 nine step analysis process:

1. Collect system and installation data.

2. Determine modes of operation.

3. Determine bolted fault current.

4. Determine arc fault current.

5. Determine protective device characteristic and arc fault duration.

6. Document system voltages and equipment class.

7. Select working distances.

8. Calculate incident energy.

9. Calculate the arc flash protection boundary.

3.5 PROTECTIVE DEVICE COORDINATION STUDY

As a minimum, the coordination study for the power distribution system shall include the following on 5-cycle, log-log graph paper:

1. Time-current for each protective relay or fuse showing graphically that the settings will provide protection and selectivity within industry standards. Each curve shall be identified, and the tap and time dial settings shall be specified.

2. Time-current curves for each device shall be positioned to provide for maximum selectivity to minimize system disturbances during fault clearing. Where selectivity cannot be achieved, the Engineer shall be notified as to the cause.

3. Time-current curves and points for cable and equipment damage.

4. Circuit interrupting device operating and interrupting times.

5. Indicate maximum fault values on the graph.

6. Sketch of bus and breaker arrangement.

3.6 IMPLEMENTING THE PROTECTIVE DEVICE COORDINATION STUDY SETTINGS AND ARC FLASH SIGN INSTALLATION

The Testing Firm shall implement the protective device coordination study settings on new and existing equipment as required in Specification 6016, based on the Engineers accepted Protective Device Coordination Report specified herein and submit a final amended report of the Record As-Built electrical equipment protective device settings subsequent to start-up and testing.

The Testing Firm shall work with the Contractor and the Study Firm for implementing the Arc Flash Hazard sign installation requirements for electrical equipment as specified in NEC Article 110.16 Flash Protection and NFPA 70E.

END OF DOCUMENT 6017

CARSON CITY PURCHASING & CONTRACTS
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

CARSON CITY PURCHASING & CONTRACTS
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:

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 ⅝	18.75
Over 18	8 ⅝	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.

3. Construction:

3.1 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 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.

3.2 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

DOCUMENT No. 02600 FUSIBLE POLYVINYLCHLORIDE PIPE FOR INSTALLATION BY HORIZONTAL DIRECTIONAL DRILL (HDD)

1. General

1.1 Description

1.1.1 Scope

1.1.1.1 This section specifies fusible polyvinylchloride pipe, including standards for dimensionality, testing, quality, acceptable fusion practice, safe handling, storage and installation of the pipe by horizontal directional drilling, directional boring, or guided boring.

1.1.2 Requirements

1.1.2.1 Contractor shall provide fusible polyvinylchloride pipe conforming to all standards and procedures, and meeting all testing and material properties as described in this specification for installation by horizontal directional drilling.

1.1.2.2 Contractor shall be responsible for all installation processes and procedures associated with the installation by horizontal directional drilling in accordance with this specification.

1.1.3 Pipe Description

1.1.3.1 Pipe Supplier shall furnish fusible polyvinylchloride pipe conforming to all standards and procedures, and meeting all testing and material properties as described in this specification.

1.1.3.2 Pipe shall conform to the following dimensionality and general characteristics table:

Pipe Description	Nominal Diameter (in.)	DR	Color	Pressure Class (psi)	Required Inner Diameter (in.)
Water Line C905	24 inch	21	Blue	200	As Required
Sch. 40 Elect. Cond.	4 inch	N/A	Grey	Sch. 40	As Required

2. Quality Assurance

2.1 References

2.1.1 This section contains references to the following documents. They are a part of this section as specified and modified. Where a referenced document contains references to other standards, those other standards are included as references under this section as if referenced directly. In the event of a conflict between the requirements of this section and those of the listed documents, the requirements of this section shall prevail.

2.1.2 Unless otherwise specified, references to documents shall mean the documents in effect at the time of design, bid, or construction, whichever is earliest. If referenced documents have been discontinued by the issuing organization, references to those documents shall mean the replacement documents issued or otherwise identified by that organization or, if there are no replacement documents, the last version of the document before it was discontinued.

2.1.3 Where document dates are given in the following listing, references to those documents shall mean the specific document version associated with that date, regardless of whether the document has been superseded by a version with a later date, discontinued or replaced.

Reference	Title
ANSI/AWWA C110/A21.10	American National Standard for Ductile-Iron and Gray-Iron Fittings, 3-inch through 48-inch, for Water and Other Liquids
ANSI/AWWA C111/A21.11	American National Standard for Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings
AWWA C605-94	Standard for Underground Installation of Polyvinyl Chloride (PVC) Pressure Pipe and Fittings for Water
AWWA C651	Standard for Disinfecting Water Mains
AWWA C900-97	Standard for Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4 in. through 12 in. (100mm through 300mm), for Water Distribution
AWWA C905-97	Standard for Polyvinyl Chloride (PVC Pressure Pipe and Fabricated Fittings, 14 in. through 48 in. (350mm-1200mm), for Water Distribution
AWWA M23	AWWA Manual of Supply Practices PVC Pipe—Design and Installation, Second Edition
ASTM C923	Standard Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes and Laterals
ASTM D1784	Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds
ASTM D1785	Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120
ASTM D2152	Test Method for Degree of Fusion of Extruded Poly(Vinyl Chloride) (PVC) Pipe and Molded Fittings by Acetone Immersion
ASTM D2241	Poly (Vinyl Chloride) (PVC) Plastic Pipe (SDR-PR)
ASTM D2665	Poly (Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings
ASTM D3034	Standard Specification for Type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings
ASTM F477	Elastomeric Seals (Gaskets) for Joining Plastic Pipe
ASTM F679	Standard Specification for Poly(Vinyl Chloride) (PVC) Large Diameter Plastic Gravity Sewer Pipe and Fittings
ASTM F1057	Standard Practice for Estimating the Quality of Extruded Poly (Vinyl Chloride) (PVC) Pipe by the Heat Reversion Technique
ASTM F1417	Standard Test Method for Installation Acceptance of Plastic Gravity Sewer Lines Using Low-Pressure Air
UNI-B-6	Recommended Practice for Low-Pressure Air Testing of Installed Sewer Pipe
UNI-PUB-08	Tapping Guide for PVC Pressure Pipe
NSF-14	Plastics Piping System Components and Related Materials
NSF-61	Drinking Water System Components--Health Effects
PPI TR-2	PVC Range Composition Listing of Qualified Ingredients

2.2 Manufacturer Requirements

2.2.1 Fusible polyvinylchloride pipe shall be tested at the extrusion facility for properties required to meet all applicable parameters as outlined in either AWWA C900, AWWA C905, applicable sections of ASTM D2241,

ASTM D3034, or ASTM F679. Testing priority shall be in conformance with AWWA C900 and AWWA C905, except for pipe made to the ASTM D3034 or ASTM F679 standards, which shall be tested to those standards. All piping shall be made from a PVC compound conforming to cell classification 12454 per ASTM D1784.

2.3 Fusion Technical Requirements

2.3.1 Fusion Technical Requirements shall be fully qualified by the pipe supplier to install fusible polyvinylchloride pipe of the type(s) and size(s) being used. Qualification shall be current as of the actual date of fusion performance on the project.

2.4 Specified Pipe Suppliers

2.4.1 Fusible polyvinylchloride pipe shall be used as manufactured under the trade names Fusible C-900®, Fusible C-905® and FPVC™, for Underground Solutions, Inc., Poway, CA (858) 679-9551. Fusion process shall be as patented by Underground Solutions, Inc., Poway, CA, Patent No. 6,982,051. Owner and Engineers are aware of no other supplier or fusible polyvinylchloride pipe that is an equal to this specified pipe supplier and product.

2.5 Warranty

2.5.1 The pipe shall be warranted for one year per the pipe supplier's standards terms.

2.5.2 In addition to the standard pipe warranty, the fusion services shall be warranted for one year per the fusion service provider's standard terms.

2.6 Pre-Construction Submittals

2.6.1 The following PRODUCT DATA is required from the pipe supplier and/or fusion provider:

1) Pipe Size
2) Dimensionality
3) Pressure Class per applicable standard
4) Color
5) Recommended Minimum Bending Radius
6) Recommended Maximum Safe Pull Force
7) Pipe and fusion services warranty information
8) Written procedural documentation for piping products including proper handling and storage, installation, tapping, and testing.
9) Fusion technician qualification indicating conformance with this specification.

2.6.2 The following WORK PLAN AND INFORMATION is required from the contractor and/or horizontal drilling Contractor. This WORK PLAN AND INFORMATION shall also be supplied to the pipe supplier, should it be requested.

1) Work plan shall include for each HDD installation any excavation locations and dimensions, interfering utilities, bore dimensions and locations including bend radii used, and traffic control schematics.
2) A project safety and contingency plan which shall include but shall not be limited to drilling fluid containment and cleanup procedures, equipment and plan for compromised utility installations including electrical and power lines, water, wastewater and any other subsurface utility in the area.
3) An HDD schedule identifying daily work hours and working dates for each installation.

2.7 Post-Construction Submittals

2.7.1 The following AS-RECORDED DATA is required from the contractor and/or fusion provider to the Owner or pipe supplier upon request:

1) Fusion report for each fusion joint performed on the project, including joints that were rejected. Specific requirements of the Fusion Technician's joint report shall include:
a) Pipe Size and Thickness
b) Machine Size
c) Fusion Technician Identification
d) Job Identification
e) Fusion Joint Number
f) Fusion, Heating, and Drag Pressure Settings
g) Hear Plate Temperature
h) Time Stamp
i) Heating and Cool Down Time of Fusion
j) Ambient Temperature

2) As-recorded Information

a) The as-recorded plan and profile will reflect the actual installed alignment, and reflect the horizontal offset from the baseline and depth of cover.
b) All fittings, valves, or other appurtenances will also be referenced and shown.
c) A daily project log, along with tracking log sheets, should they be used, shall be provided. Tracking log sheet data, should it be employed, shall include any and all that apply, including inclination, depth, azimuth, and hydraulic pull-back and rotational force measured.

3. Products

3.1 Fusible Polyvinylchloride Pressure Pipe for Potable Water

3.1.1 Fusible polyvinylchloride pipe shall conform to AWWA C900 or AWWA C05, and/or ASTM D2241 or ASTM D1785 for IPS standard dimensions if applicable. Testing shall be in accordance with AWWA standards for all pipe types.

3.1.2 Re-work material shall be allowed per AWWA C900 and AWWA C905 standards.

3.1.3 Fusible polyvinylchloride pipe shall be extruded with plain ends. The ends shall be square to the pipe and free of any bevel or chamfer. There shall be no bell or gasket of any kind incorporated into the pipe.

3.1.4 Fusible Polyvinylchloride pipe shall me manufactured in a standard 20', 30' or 40' nominal length.

3.1.5 Fusible polyvinylchloride pipe shall be blue in color for potable water use.

3.1.6 Pipe generally shall be marked per AWWA C900 or AWWA C905, and shall include as a minimum:

1) Nominal pipe size
2) PVC
3) Dimension Ratio, Standard Dimension Ratio or Schedule
4) AWWA pressure class or standard pressure rating for non-AWWA pipe.
5) AWWA Standard designation number or pipe type for non-AWWA pipe.
6) NSF-61 mark verifying suitability for potable water service
7) Extrusion production-record code
8) Trademark or trade name
9) Cell Classification 12454 and/or PVC material code 1120 may also be included.

3.1.7 Pipe shall be homogeneous throughout and be free of visible cracks, holes, foreign material, blisters, or other visible deleterious faults.

3.2 Fusible Polyvinylchloride Pressure Pipe for Non-Potable Water

3.2.1 Fusible polyvinylchloride pipe shall conform to AWWA C900 or AWWA C905, and/or ASTM D2241 or ASTM D1785 for IPS standard dimensionality, if applicable. Testing shall be in accordance with AWWA standards for all pipe types.

3.2.2 Re-work material shall be allowed per AWWA C900 and AWWA C905 standards.

3.2.3 Fusible polyvinylchloride pipe shall be extruded with plain ends. The ends shall be square to the pipe and free of any bevel or chamfer. There shall be no bell or gasket or any kind incorporated into the pipe.

3.2.4 Fusible polyvinylchloride pipe shall be manufactured in a standard 20', 30' or 40' nominal length.

3.2.5 Fusible polyvinylchloride pipe shall be purple on color for reclaim, reuse, or other non-potable distribution or conveyance. Fusible polyvinylchloride pipe shall be white in color for raw water collection and transmission, or other non-potable resource or irrigation water uses.

3.2.6 Pipe generally shall be marked per AWWA C900 or AWWA C905, and shall include as a minimum:

1) Nominal pipe size
2) PVC
3) Dimension Ratio, Standard Dimension Ratio or Schedule
4) AWWA pressure class or standard pressure rating for non-AWWA pipe.
5) AWWA Standard designation number or pipe type for non-AWWA pipe.
6) Extrusion production-record code
7) Trademark or trade name
8) Cell Classification 12454 and/or PVC material code 1120 may also be included.
9) For reclaim water service, the wording: "Reclaimed Water, NOT for Potable Use".

3.2.7 Pipe shall be homogeneous throughout and be free of visible cracks, holes, foreign material, blisters, or other visible deleterious faults.

3.3 Fusible Polyvinylchloride Pressure Pipe for Wastewater

3.3.1 Fusible polyvinylchloride pipe shall conform to AWWA C900 or AWWA C905, and/or ASTM D2241 or ASTM D1785 for IPS standard dimensionality, if applicable. Testing shall be in accordance with AWWA standards for all pipe types.

3.3.2 Rework material shall be allowed per AWWA C900 and AWWA C905 standards.

3.3.3 Fusible polyvinylchloride pipe shall be extruded with plain ends. The ends shall be square to the pipe and free of any bevel or chamfer. There shall be no bell or gasket of any kind incorporated into the pipe.

3.3.4 Fusible polyvinylchloride pipe shall be manufactured in a standard 20', 30' or 40' nominal length.

3.3.5 Fusible polyvinylchloride pipe shall be green in color for wastewater use.

3.3.6 Pipe generally shall be marked per AWWA C900 or AWWA C905, and shall include as a minimum:

1) Nominal pipe size
2) PVC
3) Dimension Ratio, Standard Dimension Ratio or Schedule
4) AWWA pressure class or standard pressure rating for non-AWWA pipe
5) AWWA Standard designation number or pipe type for non-AWWA pipe
6) Extrusion production-record code
7) Trademark or trade name
8) Cell Classification 12454 and/or PVC material code 1120 may also be included.

3.3.7 Pipe shall be homogeneous throughout and be free of visible cracks, holes, foreign material, blisters, or other visible deleterious faults.

3.4 Fusible Polyvinylchloride Non-Pressure Pipe for Wastewater or Surface Water.

3.4.1 Fusible polyvinylchloride pipe shall conform to ASTM D3034 or ASTM F679

3.4.2 Fusible polyvinylchloride pipe may instead conform to AWWA C900 or AWWA C905, and/or ASTM D2241 or ASTM D1785 for IPS standard dimensionality, if applicable. Testing shall be in accordance with AWWA standards for any of these pipe types.

3.4.3 Rework material shall be allowed per ASTM D3034, ASTM F679, AWWA C900, or AWWA C905 standards.

3.4.4 Fusible polyvinylchloride pipe shall be extruded with plain ends. The ends shall be square to the pipe and free of any bevel or chamfer. There shall be no bell or gasket of any kind incorporated into the pipe.

3.4.5 Fusible polyvinylchloride pipe shall be manufactured in a standard 20', 30' or 40' nominal length.

3.4.6 Fusible polyvinylchloride pipe shall be green in color for wastewater use. Fusible polyvinylchloride shall be white in color for surface or storm water use.

3.4.7 Pipe generally shall be marked per AWWA C900 or AWWA C905, and shall include as a minimum:

1) Nominal pipe size
2) PVC
3) Dimension Ratio, Standard Dimension Ratio or Schedule (omit for ASTM D3034 or ASTM F679 pipe).
4) Pipe legend or stiffness designation, or AWWA pressure class, or standard pressure rating for non-AWWA pipe.
5) AWWA Standard designation number or pipe type for non-AWWA pipe (omit for ASTM D3034 or ASTM F679 pipe)
6) Extrusion production-record code
7) Trademark or trade name
8) Cell Classification 12454 and/or PVC material code 1120 may also be included.

3.4.8 Pipe shall be homogeneous throughout and be free of visible cracks, holes, foreign material, blisters, or other visible deleterious faults.

3.5 Fusion Joints

3.5.1 Unless otherwise specified, fusible polyvinylchloride pipe lengths shall be assembled in the field with butt-fused joints. The Contractor shall follow the pipe supplier's guidelines for this procedure. All fusion joints shall be completed as described in this specification.

3.6 Connections and Fittings for Pressure Applications

3.6.1 Connection shall be defined in conjunction with the coupling of project piping, as well as the tie-ins to other piping systems.

3.6.2 Ductile Iron Mechanical and Flanged Fittings

Acceptable fittings for use with fusible polyvinylchloride pipe shall include standard ductile iron fittings conforming to AWWA/ANSI C110/A21.10 and AWWA/ANSI C111/A21.11.

1) Connections to fusible polyvinylchloride pipe may be made using a restrained or non-restrained retainer gland product for PVC pipe, as well as for MJ or flanged fittings.
2) Bends, tees and other ductile iron fittings shall be restrained with the use of thrust blocking or other means as indicated in the construction documents.
3) Ductile iron fitting and glands must be installed per the manufacturer's guidelines.

3.6.3 PVC Gasketed, Push-on Fittings

Acceptable fittings for use with fusible polyvinylchloride pipe shall include standard PVC pressure fittings conforming to AWWA C900 or AWWA C905.

1) Acceptable fittings for use joining fusible polyvinylchloride pipe other sections of fusible polyvinylchloride pipe or other sections of PVC shall include gasketed PVC, push-on type couplings and fittings, including bends, tees, and couplings as shown in the drawings.
2) Bends, tees, and other PVC fittings shall be restrained with the use of thrust blocking or other restraint products as indicates in the construction documents.
3) PVC gasketed, push-on fittings and mechanical restraints, if used, must be installed per the manufacturer's guidelines.

3.6.4 Fusible Polyvinylchloride Sweeps or Bends

1) Fusible polyvinylchloride sweeps or bends shall conform to the same sizing convention, diameter, dimensional tolerances and pressure class of the pipe that they are joining together.
2) Fusible polyvinylchloride sweeps or bends shall be manufactured from the same fusible polyvinyl chloride pipe being used for the installation, and shall have at least 2 feet of straight section on either end of the sweep or bend to allow for fusion of the sweep to the pipe installation.
3) Standard fusible polyvinylchloride sweep or bend angles shall not be greater than 22.5 degrees, and shall be used in nominal diameters ranging from 4 inch through 16 inch.

3.6.5 Sleeve-Type Couplings

1) Sleeve-type mechanical couplings shall be manufactured for use with PVC pressure pipe, and may be restrained or unrestrained as indicated in the construction documents.
2) Sleeve-type couplings shall be rated at the same or greater pressure carrying capacity as the pipe itself.

3.6.6 Expansion and Flexible Couplings

1) Expansion-type mechanical couplings shall be manufactured for use with PVC pipe, and may be restrained or unrestrained as indicated in the construction documents.
2) Expansion-type mechanical couplings shall be rated at the same or greater pressure carrying capacity as the pipe itself.

3.6.7 Connection Hardware

Bolts and nuts for buried service shall be made of non-corrosive, high-strength, low-alloy steel having the characteristics specified in ANSI/AWWA C111/A21.11, regardless of any other protective coating.

3.7 Connections for Gravity Sanitary Sewer and Non-Pressure Applications

3.7.1 The following connections are to be used in conjunction with tie-ins to other non-pressure, gravity sewer piping and/or structures, and shall be as indicated in the construction documents.

3.7.2 PVC Gasketed, Push-on Couplings

1) Acceptable couplings for joining fusible polyvinylchloride pipe to other sections of fusible polyvinylchloride pipe or other sections of PVC pipe shall include gasketed PVC, push-on type couplings as indicated in the construction documents.
2) PVC gasketed, push-on fittings and/or restraint hardware must be installed per the manufacturer's guidelines.

3.7.3 Fusible Polyvinylchloride Sweeps or Bends

1) Fusible polyvinylchloride sweeps or bends shall conform to the same sizing convention, diameter, dimensional tolerances and pressure class of the pipe that they are joining together.
2) Fusible polyvinylchloride sweeps and bends shall be manufactured from the same fusible polyvinylchloride pipe being used for the installation, and shall have at least 2-feet of straight section on either end of the sweep or bend to allow for fusion of the sweep to the pipe installation.
3) Standard fusible polyvinylchloride sweep or bend angles shall not be greater that 22.5 degrees and shall be used in nominal diameters ranging from 4-inch through 16-inch.

3.7.4 Sleeve-Type Couplings

1) Sleeve-type mechanical couplings shall be manufactured for use with PVC pipe, and may be restrained or unrestrained as indicated in the construction documents.

3.7.5 Expansion and Flexible Couplings

1) Expansion-type mechanical couplings shall be manufactured for use with PVC pipe, and may be restrained or unrestrained as indicated in the construction documents.

3.7.6 Connection Hardware

1) Bolts and nuts for buried service shall be made of non-corrosive, high-strength, low-alloy steel having the characteristics specified in ANSI/AWWA C111/A21.11, regardless of any other protective coating.

3.7.7 Connection to Sanitary Sewer Manholes and Structures

1) Fusible polyvinylchloride pipe shall be connected to manholes and other structures to provide a leak-free, properly graded flow into or out of the manhole structure.
2) Connections to existing manholes and structures shall be as indicated in the construction documents.

    a) For a cored or drilled opening provide a flexible, watertight connection that meets and/or exceeds ASTM C923.
    b) For a knock out opening, provide a watertight connection (waterstop or other method) meeting the material requirements of ASTM C923 that is securely attached to the pipe with stainless steel bands or other means.
    c) Grout opening in manhole wall with non-shrink grout. Pour concrete collar around pipe and outside manhole opening. Provide flexible pipe joint or flexible connector within 2' of collar.

3) Connections to a new manhole or structure shall be as indicated in the construction documents.

    a) A flexible, watertight gasket per ASTM C 923 shall be cast integrally with riser section(s) for all precast manhole and structures.
    b) Drop connections shall be required where shown on drawings.
    c) Grout internal joint space with non-shrink grout.

3.8 Drilling System Equipment

3.8.1 General

1) The directional drilling equipment, as a minimum, shall consist of a directional drilling rig of sufficient capacity to perform the bore(s) and pull-back of the pipe(s), a drilling fluid mixing and delivery system of sufficient capacity to successfully complete the crossing, a guidance system to accurately guide boring operations, and trained and competent personnel to operate the system. All equipment shall be in good, safe operating condition with sufficient supplies, materials and spare parts on hand to maintain the system in good working order for the duration of this project. All required equipment shall be included in the emergency and contingency plan as submitted per these specifications.

3.8.2 Drilling Rig

1) The direction drilling machine shall consist of a hydraulically powered system to rotate, push and pull drill pipe while delivering pressurized fluid mixture to a drill head. The machine shall be anchored to withstand the pulling, pushing and rotating forces required to complete the project.
2) The drilling rig hydraulic system shall be of sufficient pressure and volume to power drilling operations. The hydraulic system shall be free from leaks.
3) The drilling rig shall have a system to monitor pull-back hydraulic pressure during pull-back operations.

3.8.3 Drill Head

1) The horizontal directional drilling equipment shall produce a stable fluid lined tunnel with the use of a steer-able drill head and any subsequent pre-reaming heads.
2) The system must be able to control the depth and direction of the drilling operations.
3) Drill head shall contain all necessary cutters and fluid jets for the operation, and shall be of the appropriate design for the ground medium being drilled.

3.8.4 Drilling Fluid System

1) Drilling Fluid (Drilling Mud)

a) Drilling fluid shall be composed of clean water and the appropriate additive(s) for the fluid to be used. Water shall be from a clean source and shall meet the mixing requirements of the mixture manufacturer(s).
b) The water and additives shall be mixed thoroughly to assure the absence of any clumps or clods. No hazardous additives may be used.
c) Drilling fluid shall be maintained at a viscosity sufficient to suspend cuttings and maintain the integrity of bore wall(s).
d) Drilling fluid shall be disposed of off-site in accordance with local, state and federal requirements and/or permit conditions.
e) No additional chemicals or polymer surfactants shall be allowed to be added to the drilling fluid unless they have been submitted per this specification.

2) Mixing System

a) A drilling fluid mixing system shall be of sufficient size to mix and deliver drilling fluid for the project.
b) The mixing system shall be able to ensure thorough mixing of the drilling fluid. The drilling fluid reservoir tank shall be sized for adequate storage of the fluid.
c) The mixing system shall continually agitate the drilling fluid during drilling operations.

3) Drilling Fluid Delivery and Recovery System

a) The drilling fluid pumping system shall have a minimum capacity to supply drilling fluid in accordance with the drilling equipment pull-back rating at a constant required pressure.

b) The delivery system shall have filters or other appropriate in-line equipment to prevent solids from being pumped into the drill pipe.

c) Used drilling fluid and drilling fluid spilled during drilling operations shall be contained and properly disposed of. The use of spill containment measures shall be maintained around drill rigs, drilling fluid mixing system, entry and exit pits and drilling fluid recycling system (if used) to prevent spills into the surrounding environment. Pumps, vacuum truck(s), and/or storage of sufficient size shall be in place to contain excess drilling fluid.

d) A closed-loop drilling fluid system and a drilling fluid cleaning system should be used to whatever extent practical, depending upon project size and conditions. Under no circumstances shall drilling fluid that has escaped containment be reused in the drilling system.

3.8.5 Drilling Control System

1) Calibration of the electronic detection and control system shall be verified prior to the start of the bore.

2) The drilling head shall be remotely steer-able by means of an electronic or magnetic detection system. The drilling head location shall be monitored in three dimensions:

a) Offset from the baseline,

b) Distance along the baseline, and

c) Depth of cover.

3) Point of rotation of the head shall also be monitored

4) For gravity application and on-grade drilling, sonde/beacon or approved equipment applicable for grade increments of 1/10th of one percent shall be used.

3.9 Pipe Pull Heads

1) Pipe pull heads shall be utilized that employ a positive through-bolt design assuring a smooth wall against the pipe cross-section at all times.

2) Pipe pull heads shall be specifically designed for use with fusible polyvinylchloride pipe, and shall be as recommended by the pipe supplier.

3.10 Pipe Rollers

1) Pipe rollers, if required, shall be of sufficient size to fully support the weight of the pipe during handling and pullback operations.

2) A sufficient quantity of rollers and spacing, per the pipe supplier's guidelines shall be used to assure adequate support and excessive sagging of the product pipe.

4. EXECUTION

4.1 Delivery and Off-Loading

1) All pipe shall be bundled or packaged in such a manner as to provide adequate protection of the ends during transportation to the site. Any pipe damaged in shipment shall be replaced as directed by the Owner or Engineer.

2) Each pipe shipment should be inspected prior to unloading to see if the load has shifted or otherwise been damaged. Notify Owner or Engineer immediately if more than immaterial damage is found. Each pipe shipment should be checked for quantity and proper size, color, and type.

3) Pipe should be loaded, off-loaded, and otherwise handled in accordance with AWWA M23, and all of the pipe supplier's guidelines shall be followed.

4) Off-loading devices such as chains, wire rope, chokers, or other pipe handling implements that may scratch, nick, cut or gouge the pipe are strictly prohibited.

5) During removal and handling, be sure that the pipe does not strike anything. Significant impact could cause damage, particularly during cold weather.
6) If appropriate unloading equipment is not available, pipe may be unloaded by removing individual pieces. Care should be taken to insure that pipe is not dropped or damaged. Pipe should be carefully lowered, not dropped, from trucks.

4.2 Handling and Storage

1) Any length of pipe showing a crack or which has received a blow that may have caused an incident fracture, even though no such fracture can be seen, shall be marked as rejected and removed at once from the work. Damaged areas, or possible areas of damage may be removed by cutting out and removing the suspected incident fracture area. Limits of the acceptable length of pipe shall be determined by the Owner or Engineer.
2) Any scratch or gouge greater than 10% of the wall thickness will be considered significant and can be rejected unless determined acceptable by the Owner or Engineer.
3) Pipe lengths should be stored and placed on level ground. Pipe should be stored at the job site in the unit packaging provided by the manufacturer. Caution should be exercised to avoid compression, damage, or deformation to the ends of the pipe. The interior of the pipe, as well as all end surfaces, should be kept free from dirt and foreign matter.
4) Pipe shall be handled and supported with the use of woven fiber pipe slings or approved equal. Care shall be exercised when handling the pipe to not cut, gouge, scratch or otherwise abrade the piping in any way.
5) If pipe is to be stored for periods of one (1) year or longer, the pipe should be shaded or otherwise shielded from direct sunlight. Covering the pipe which allows for temperature build-up is strictly prohibited. Pipe should be covered with an opaque material while permitting adequate air circulation above and around the pipe as required to prevent excess heat accumulation.
6) Pipe shall be stored and stacked per the pipe supplier's guidelines.

4.3 Fusion Process

4.3.1 General

1) Fusible polyvinylchloride pipe will be handled in a safe and non-destructive manner before, during, and after the fusion process and in accordance with this specification and pipe supplier's guidelines.
2) Fusible polyvinylchloride pipe will be fused by qualified fusion technicians, as documented by the pipe supplier.
3) Each fusion joint shall be recorded and logged by an electronic monitoring device (date logger) affixed to the fusion machine.
4) Only appropriately sized and outfitted fusion machines that have been approved by the pipe supplier shall be used for the fusion process. Fusion machines must incorporate the following properties, including the following elements:

   a) HEAT PLATE – Heat plates shall be in good condition with no deep gouges or scratches. Plates shall be clean and free of any debris or contamination. Heater controls shall function properly, cord and plug shall be in good condition. The appropriately sized heat plate shall be capable of maintaining a uniform and consistent heat profile and temperature for the size of pipe being fused, per the pipe supplier's guidelines.
   b) CARRIAGE- Carriage shall travel smoothly with no binding at less than 50 psi. Jaws shall be in good condition with proper inserts for the pipe size being fused. Insert pins shall be installed with no interference to carriage travel.
   c) GENERAL MACHINE-Overview of machine body shall yield no obvious defects, missing parts, or potential safety issues during fusion.
   d) DATA LOGGING DEVICE- The current version of the pipe supplier's recommended and compatible software shall be used. Data logging device operations and maintenance manual shall be with the unit at all times. If fusing for extended periods of time, an independent 110V power source shall be available to extend battery life.

5) Other equipment specifically required for the fusion process shall include the following:

   a) Pipe rollers shall be used for support of pipe to either side of the machine.
   b) A weather protection canopy that allows full machine motion of the heat plate, fusion assembly and carriage shall be provided for fusion in inclement and/or windy weather.
   c) Fusion machine operations and maintenance manual shall be kept with the fusion machine at all times.
   d) Facing blades specifically designed for cutting fusible polyvinylchloride pipe shall be used.

4.3.2 Joint Recording

Each fusion joint shall be recorded and logged by an electronic monitoring device (data logger) connected to the fusion machine. The fusion data logging and joint report shall be generated by software developed specifically for the butt-fusion of thermoplastic pipe. The software shall register and/or record the parameters required by the pipe supplier and these specifications. Data not logged by the data logger shall be logged manually and be included in the Fusion Technician's joint report.

4.4 Drilling Operations

4.4.1 General

1) Bore path and alignment are as indicated in the contract documents. The path of the bore may be modified based on field and equipment conditions. Entry and exit locations and control-point elevations shall be maintained as indicated in the contract documents.
2) Bend radii shown in the contract documents are minimum allowable radii and shall not be reduced.

4.4.2 Location and Protection of Underground Utilities

1) Correct location of all underground utilities that may impact the HDD installation is the responsibility of the Contractor, regardless of any locations shown on the drawings or previous surveys completed.
2) Utility location and notification services shall be contacted by the Contractor prior to the start of construction.
3) All existing lines and underground utilities shall be positively identified, including exposing those facilities that are located within an envelope of possible impact of HDD installation as determined for the project specific site conditions. It is the Contractor and HDD system operator's responsibility to determine this envelope of safe offset from existing utilities. This will include, but is not limited to, soil conditions and layering, utility proximity and material, HDD system and equipment, and foreign subsurface material.

4.4.3 Site Location Preparation

1) Work site as indicated on drawings shall be graded or filled to provide a level working area. No alterations beyond what is required for operations are to be made.
2) Contractor shall confine all activities to designated work areas.

4.4.4 Drilling Layout and Tolerances

1) The drill path shall be accurately surveyed with entry and exit areas placed in the appropriate locations within the areas indicated on drawings. If using a magnetic guidance system, drill path will be surveyed for any surface geomagnetic variations or anomalies.

2) Instrumentation shall be provided and maintained at all times that accurately locates the pilot hole, measures drill-string axial and torsional loads and measures drilling fluid discharge rate and pressure.
3) Entry and exit areas shall be drilled so as not to exceed the bending limitations of the pipe as recommended by the pipe supplier.

4.4.5 Pilot Hole Bore

1) Pilot hole shall be drilled along bore path. In the event that the pilot bore does deviate from the bore path, it may require contractor to pull-back and re-drill from the location along bore path before the deviation.
2) The Contractor shall limit curvature in any direction to reduce force on the pipe during pull-back. The minimum radius of curvature shall be no less than that specified by the pipe supplier and as indicated on the drawings.

4.4.6 Reaming

1) After successfully completing the pilot hole, the bore hole shall be reamed to a diameter which meets the requirements of the pipe being installed. The following table is offered as an estimate guide:

Nominal Pipe Diameter	**Bore Hole Diameter**
< 8 inches	Pipe Dia. + 4 inches
8 inches to 24 inches	Pipe Dia. X 1.5
> 24 inches	Pipe Dia. + 12 inches

2) Multiple reaming passes shall be used at the discretion of the Contractor and shall conform to this specification.
3) In the event of a drilling fluid fracture, returns loss or other loss of drilling fluid, the Contractor shall be responsible for restoring any damaged property to original condition and cleaning up the area in the vicinity of the damage or loss.

4.5 Pipe Pull-Back and Insertion

4.5.1 Pipe shall be fused prior to insertion, if the site and conditions allow, into one continuous length.

4.5.2 Contractor shall handle the pipe in a manner that will not over-stress the pipe prior to insertion. Vertical and horizontal curves shall be limited so that the pipe does not bend past the pipe supplier's minimum allowable bend radius, buckle, or otherwise become damaged. Damaged portions of the pipe shall be removed and replaced.

4.5.3 The pipe area shall be graded as needed to provide support for the pipe and to allow free movement into the bore hole.

1) The pipe shall be guided into the bore hole to avoid deformation of, or damage to, the pipe.
2) The fusible polyvinylchloride pipe may be continuously or partially supported on rollers or other Owner and Engineer approved friction decreasing implement during joining and insertion, as long as the pipe is not over-stressed or critically abraded prior to, or during installation.
3) A swivel shall be used between the reaming head and the fusible polyvinylchloride pipe to minimize torsion stress on the pipe assembly.

4.5.4 Buoyancy modification shall be at the sole discretion of the Contractor, and shall not exceed the pipe supplier's guidelines in regards to maximum pull force or minimum bend radius of the pipe. Damage caused by buoyancy modifications shall be the responsibility of the Contractor.

4.5.5 Once pull-back operations have commenced, the operation shall continue without interruption until the pipe is completely pulled through the bore hole.

4.5.6 The pipe shall be installed in a manner that does not cause upheaval, settlement, cracking, or movement and distortion of surface features. Any damages caused by the Contractor's operations shall be corrected by the Contractor.

4.6 Installation Cleanup

4.6.1 Following the installation, the project site shall be returned to a condition equal to or better than the pre-construction conditions of the site. All excavations will be backfilled and compacted per the construction documents and jurisdictional standards. All pavement and hardscape shall be repaired per applicable jurisdictional standards, excess materials shall be removed from the site, and disturbed areas shall be re-landscaped. All drilling fluid shall be properly disposed of per these specifications and all applicable jurisdictional laws.

4.6.2 Contractor shall verify that all utilities, structures, and surface features in the project area are sound.

4.7 Preparation Prior to Making Connections into Existing Piping Systems

4.7.1 Approximate locations for existing piping systems are shown in the construction documents. Prior to making connections into existing piping systems, the Contractor shall:

1) Field verify location, size, piping material and piping system of the existing pipe.
2) Obtain all required fittings, which may include saddles, sleeve type couplings, flanges, tees, or others as shown in the construction documents.
3) Have installed all temporary pumps and/or pipes in accordance with established connection plans.

4.7.2 Unless otherwise approved, new piping systems shall be completely assembled and successfully tested prior to making connections into existing pipe systems.

4.8 Pipe System Connections

4.8.1 Pipe connections shall be installed per applicable standards and regulations, as well as per the connection manufacturer's guidelines and as indicated in the construction documents. Pipe connections to structures shall be installed per applicable standards and regulations, as well as per the connection manufacturer's guidelines.

4.9 Tapping for Potable and Non-Potable Water Applications

4.9.1 Tapping shall be performed using standard tapping saddles designed for use on PVC piping in accordance with AWWA C605. Tapping shall be performed only with use of tap saddles or sleeves. NO DIRECT TAPPING WILL BE PERMITTED. Tapping shall be performed in accordance with the applicable sections for Saddle Tapping per Uni-Pub-8.

4.9.2 All connections requiring a larger diameter than that recommended by the pipe supplier, shall be made with a pipe connection as specified and indicated on the drawings.

4.9.3 Equipment used for tapping shall be made specifically for tapping PVC pipe:

1) Tapping bits shall be slotted “shell” style cutters, specifically made for PVC pipe. “Hole saws” made for cutting wood, steel, ductile iron, or other materials are strictly prohibited.
2) Manually operated or power operated drilling machines may be used.

4.9.4 Taps may be performed while the pipeline is filled with water and under pressure (‘wet’ tap), or when the pipeline is not filled with water and not under pressure (‘dry’ tap).

4.10 Testing

4.10.1 Testing shall comply with all applicable jurisdictional building codes, statutes, standards, regulations and laws.

4.10.2 Hydrostatic Testing and Leakage Testing for Pressure Piping

1) Hydrostatic and leakage testing for piping systems that contain mechanical jointing as well as fused PVC jointing shall comply with AWWA C605.
2) Unless agreed to or otherwise designated by the owner or engineer, for a simultaneous hydrostatic and leakage test following installation, a pressure equal to 150% of working pressure at point of test, but not less than 125% of normal working pressure at highest elevation shall be applied. The duration of the pressure test shall be for two (2) hours.
3) If Hydrostatic testing and leakage testing are performed at separate times, follow procedures as outlined in AWWA C605.
4) In preparation for pressure testing the following parameters must be followed:

    a) All air must be vented from the pipeline prior to pressurization. This may be accomplished with the use of the air relief valves or corporation stop valves, vent piping in the testing hardware or end caps, or any other method which adequately allows air to escape the pipeline at all high points. Venting may also be accomplished by “flushing” the pipeline in accordance with the parameters and procedures as described in AWWA C605.
    b) The pipeline must be fully restrained prior to pressurization. This includes installation of all mechanical restraints per the restraint manufacturer’s guidelines, whether permanent or temporary to the final installation. This also includes the installation and curing of any and all required thrust blocking. All appurtenances included in the pressure test, including valves, blow-offs, and air-relief valves shall be checked for proper installation and restraint prior to the beginning of the test.
    c) Temporary pipeline alignments that are being tested, such as those that are partially installed in their permanent location shall be configured to minimize the amount of potentially trapped air in the pipeline.

4.10.3 Leakage Testing for Non-Pressure Piping

1) Gravity sanitary sewers that contain mechanical jointing in addition to fused PVC joints may need to be tested for excessive leakage.
2) Gravity sanitary sewer leakage testing may include appropriate water or low pressure air testing. The leakage outward or inward (exfiltration or infiltration) shall not exceed 25 gallons per inch of pipe diameter per mile per day for any section of the system. An exfiltration or infiltration test shall be performed with a minimum positive head of two feet. The air test, if used, shall be conducted in accordance with one of the following standards:

    a) ASTM F1417
    b) UNI-B-6

3) The testing method selected shall properly consider the existing groundwater elevations during the test.

4.10.4 Deflection Testing for Non-Pressure Piping

1) After completion of the backfill, the Engineer or Owner may require that a deflection test be performed.
2) Deflection tests should be conducted using a go/no-go mandrel. The mandrel's outside dimension shall be sized to permit no more than 7.5 percent deflection. The percent deflection shall be established from the base inside diameter of the pipe. If the internal beading of the joints for the pipe is not required to be removed, the mandrel shall account for this clearance as well. The mandrel shall be approved by the Owner or Engineer prior to use. Lines that permit safe entry may allow other deflection test options, such as direct measurements.

4.10.5 Disinfection of the Pipeline for Potable Water Piping

1) After installation, the pipeline, having passed all required testing, shall be disinfected prior to being put into service. Unless otherwise directed by the Owner or Engineer, the pipeline will be disinfected per AWWA C651.

4.10.6 Partial Testing

1) Segments of the pipe may be tested separately in accordance with standard testing procedure, as approved by the Owner and Engineer.

END OF DOCUMENT 02600

END OF TECHNICAL SPECIFICATIONS

ATTACHMENT A
PREVAILING WAGE RATES FOR CARSON CITY

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
PREVAILING WAGE RATES FOR CARSON CITY

PILEDRIVER (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
BOILERMAKER	
Boilermaker	59.50

ATTACHMENT A
PREVAILING WAGE RATES FOR CARSON CITY

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
FLOOR COVERER	
Floor Coverer-Journeyman	36.26
Floor Coverer-Foreman	38.90
GLAZIER	
Glazier	21.25
HIGHWAY STRIPER	**ADD LABORER ZONE RATE**
Highway Striper	33.57
HOD CARRIER-BRICK MASON TENDER	**ADD ZONE RATE**
Brick Mason-Journeyman	30.10
Brick Maons-Foreman	30.60
HOD CARRIER-PLASTER TENDER	**ADD ZONE RATE**

ATTACHMENT A
PREVAILING WAGE RATES FOR CARSON CITY

Plasterer Tender-Journeyman	33.76
Plasterer-Gun Tender	34.76
Plasterer Tender-Foreman	35.12

IRON WORKER

Ironworker-Journeyman	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

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

ATTACHMENT A
PREVAILING WAGE RATES FOR CARSON CITY

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	

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

ATTACHMENT A
PREVAILING WAGE RATES FOR CARSON CITY

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
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

ATTACHMENT A
PREVAILING WAGE RATES FOR CARSON CITY

Regarding job descriptions for public works projects, please take notice of the following:

1. Pursuant to NAC 338.0095(1)(a), "A workman employed on a public work must be paid based on the type of work that the workman actually performs on the public work and in accordance with the recognized class of the workman."
2. The work description for a particular class is not intended to be jurisdictional in scope nor to be construed as limiting or prohibiting any worker from performing the work of one or more classes.
3. Any person who believes that a type of work is not classified, or who otherwise needs clarification pertaining to the recognized classes or job descriptions, shall contact the Labor Commissioner, in writing, for a determination of the applicable classification and pay rate for a particular type of work.
4. The job descriptions set forth or referenced herein supercede any and all descriptions previously agreed upon by the Labor Commissioner in any settlement agreements or stipulations arising out of contested matters.
5. The following specific provisions, where applicable, shall prevail over any general provisions of the job descriptions:

- Amendments to the prevailing wage determinations;
- Group Classifications and/or descriptions recognized by the Labor Commissioner and included with wage determinations for a particular type of work in a particular county.

AIR BALANCE TECHNICIAN, includes but is not limited to:
Inspecting, testing, programming, documenting, adjusting and balancing heating, cooling and ventilating systems using specialized tools and testing equipment to attain performance standards specified in the design of the systems.

ALARM INSTALLER, includes but is not limited to:

1. Installing or testing electrical protective signaling systems used to provide notification of fire, burglary or other irregularities on the premises of the subscriber of the system;
2. Installing of wiring and signaling units;
3. Repairing electrical protective signaling systems
4. Starting up, programming and documenting systems;

BOILERMAKER, includes but is not limited to:

1. Constructing, assembling, maintaining and repairing stationary steam boilers and boiler house auxiliaries;
2. Aligning structures or plate sections to assemble boiler frame tanks or vats;
3. Assisting in the testing of assembled vessels, directing cleaning of boilers and boiler furnaces;
4. Inspecting and repairing boiler fittings, including, without limitation, safety valves, regulators, automatic-control mechanisms, water columns and auxiliary machines.

BRICKLAYER, includes but is not limited to:

1. Laying materials, including without limitation, brick, structural tile and blocks of concrete, cinder, glass, gypsum and terra cotta, but not including stone, to construct or repair walls, partitions, arches, sewers, and other structures;
2. Laying and aligning bricks, blocks or tiles to build or repair structures for high temperature equipment, including, without limitation, cupola, kilns, ovens and furnaces; and
3. Fastening or fusing brick or other building materials to structures with wire clamps, anchor holes, torches or cement.
4. Pointing-cleaning-caulking of all types of masonry; caulking of window frames encased in masonry on brick, stone or cement structures, including grinding and cutting out on such work and sand blasting, steam cleaning and gunite work.

ATTACHMENT A
PREVAILING WAGE RATES FOR CARSON CITY

5. Pointing, cleaning and weatherproofing of buildings, grain elevators and chimneys built of stone, brick or concrete, including grinding and cutting out, sand blasting and gunite work on the same.

CARPENTER, includes but is not limited to:

1. Laying out, constructing, erecting, fabricating, installing and repairing structures and fixtures of wood, plywood, or alternative materials, doors and hardware and the fastening of the same, inclusive of garage or overhead door openers, cabinets, framework, floors, and acoustical ceiling systems using carpenter's hand tools and power tools;
2. Installing or erecting metal studs, drywall, lathing, wall partitions, prefabricated EFIS panels or any other system of panels that is attached to the interior or exterior of any building or structure, insulation and all types of ceilings;
3. Pre-cast concrete and concrete form work which includes but is not limited to: setting of templates, layout, fabrication, constructing, placing, erection, rigging and hoisting, stripping and removing of all forms which are to be reused;
4. Plywood decking, including, without limitation, stacking and installation of the plywood and the plywood decking;
5. Cutting, setting, removing of beam sides and soffits, bracing, and pads;
6. Constructing all wood panel forms and frame wall;
7. Building, erecting and disassembling self-supporting scaffolds that are more than 14 feet in height;
8. Laying out, cutting, joining, fitting of Foam Architectural Elements if same are attached mechanically; and
9. Shaping, cutting and planing by any means if done by hand or machine.

CEMENT MASON, includes but is not limited to:

1. Smoothing and finishing surfaces of poured concrete floors, walls, sidewalks and curbs to specified textures;
2. Patching holes with fresh concrete or an epoxy compound;
3. Molding expansion joints and edges through the use of edging tools, jointers and straightedges;
4. Setting of curb and gutter forms one board high;

ELECTRONIC COMMUNICATION TECHNICIAN, includes but is not limited to:

1. Pulling cable, installing and trimming devices, terminating loops, circuits, or other data gathering points;
2. Termination of main control panels, racks, or other head end equipment, as well as testing of all circuits from the field devices to the main control panels and/or equipment;
3. Utilizing test equipment for the purpose of troubleshooting and verifying the integrity of the circuits in question;
4. Using hand tools to assemble and install data communication lines and equipment computer systems, antennas and towers;
5. Disassembling equipment to adjust, repair or replace parts using hand tools;
6. Starting up, programming and documenting systems;
7. Measuring, cutting, splicing, connecting, soldering and installing wire and cable associated with communication systems

ELECTRICIAN LINEMAN, includes but is not limited to:

1. Erecting and repairing wood poles and prefabricated light duty metal towers, cable and related equipment to construct overhead transmission and distribution power lines used to conduct electrical energy between generating stations, substations and consumers;
2. Directing and assisting electrician ground men in attaching cross arms, insulators, lightning arresters, switches, wire conductors and auxiliary equipment to poles and towers in preparation of erecting the poles or towers;
3. Climbing erected poles or towers and installing equipment such as transformers
4. Strings wire conductors between erected poles with assistance of ground helpers and adjusts slack in conductors to compensate for contraction and elongation of conductors due to temperature variations, using winch.

ATTACHMENT A
PREVAILING WAGE RATES FOR CARSON CITY

ELECTRICIAN GROUNDMAN, includes but is not limited to:

1. Working under the direct supervision of linemen, including the operation of jackhammers and man hauls;
2. Loading and unloading of materials and equipment used by electrician lineman.
3. Does not include climbing poles, towers or other structures or working in the proximity of energized lines or equipment;

ELECTRICIAN-NEON SIGN, includes but is not limited to:

1. Installing, servicing and repairing plastic, neon and illuminated signs;
2. Ascending ladders or operating hydraulic or electric hoist to install, service, or examine sign to determine cause of malfunction;
3. Wiring, rewiring or removing defective parts and installing new parts using electrician's tools;
4. Removing sign or part of sign for repairs, such as structural fabrication, scroll repair, or transformer repair;

ELECTRICIAN WIREMAN, includes but is not limited to:

1. Laying out plans, installing, testing and repairing wiring, electrical fixtures, apparatus and control equipment;
2. Measuring, cutting, bending, threading, assembling and installing electrical conduit by using tools including, without limitation, a hacksaw, pipe threader, or conduit bender;
3. Pulling wiring through conduit;
4. Splicing wires;
5. Connecting wiring to lighting fixtures and power equipment;
6. Installing control and distribution apparatus, including, without limitation, switches, relays and circuit breakers, and fastening such apparatus into place;
7. Connecting power cables to equipment, including, without limitation, electric ranges and motors, and installing grounding leads;
8. Testing the continuity of a circuit to ensure electrical compatibility and safety of components using testing instruments, including, without limitation, an ohmmeter, a battery and buzzer, and an oscilloscope;
9. As necessary, cutting and welding steel structural members;

ELEVATOR CONSTRUCTOR, includes but is not limited to:

1. Assembling, installing, repairing and maintaining electric and hydraulic freight and passenger elevators, escalators and dumbwaiters;
2. Cutting pre-fabricated sections of framework, rails and other elevator components to specified dimensions, using acetylene torch, power saw, and disc grinder;
3. Installing cables, counterweights, pumps, motor foundations, escalator drives, guide rails, elevator cars, and control panels, using hand tools;

FENCE ERECTOR, includes but is not limited to:

1. Erecting or repairing chain link, wooden, tortoise, wire/wire mesh, or temporary fencing;
2. Mixing and pouring concrete around bases of posts and tamping soil into post hole to embed post;
3. Digging post holes with a spade, post hole digger or power driven auger;
4. Aligning posts through the use of lines or by sighting;
5. Verifying vertical alignment of posts with a plumb bob or spirit level;

FLAG PERSON, includes but is not limited to:

1. Directing movement of vehicular traffic through construction projects;
2. Distributing traffic control signs and markers along site in designated pattern;
3. Informing drivers of detour routes through construction sites;

FLOOR COVERER, includes but is not limited to:

ATTACHMENT A
PREVAILING WAGE RATES FOR CARSON CITY

1. Applying blocks, strips or sheets of shock-absorbing, sound-deadening or decorative covering to floors and walls, including carpets or rugs;
2. Measuring and cutting covering materials, such as rubber, linoleum, astro-turf, or cork tile and foundation material such as felt, using rule, straightedge, linoleum knife and snips;
3. Spreading adhesive cement over floor to cement foundation material to floor for sound-deadening, and to prevent covering from wearing at the board joints;
4. Rolling finished floors to smooth the floor and press cement into base and covering;
5. Fitting of devices for the attachment of carpet, linoleum, rubber and all resilient floor coverings and the fitting of metal edges, corners and caps used in the installation of the foregoing materials and all other preparatory work;

GLAZIER, includes but is not limited to:

1. Installing, setting, cutting, preparing, or removal of glass, or materials used in lieu thereof, including, without limitation, in windows, doorways, showers, bathtubs, skylights and display cases;
2. Installing glass on surfaces, including, without limitation, fronts of buildings, interior walls and ceilings;
3. Installing pre-assembled framework for windows and doors designed to be fitted with glass panels, including stained glass windows by using hand tools;
4. Loading and arranging of glass on trucks at the site of the public work;

HIGHWAY STRIPER, includes but is not limited to:

1. Painting highways, streets and parking surfaces by using manually propelled or mechanically propelled machines, brushes, rollers or spray guns;
2. Installing any device or application of any material used in lieu of paint for traffic direction, including, without limitation, buttons, tapes, plastics, rumble bars and other similar materials;

HOD CARRIER-BRICK MASON TENDER, includes but is not limited to:

1. Tending to or assisting brick masons, bricklayers and stonemasons;
2. Mixing, packing, wheeling and tempering mortar and fire clay;
3. Mixing, supplying and holding materials or tools;
4. Mixing, handling and conveying all other materials used by brick masons, bricklayers and stone masons;
5. Building scaffolds, trestles, boxes and swinging staging used exclusively by bricklayers and stone masons;
6. Hanging cables and placing putlogs;
7. Carrying bricks and mortar in a hod;
8. Cleaning work area and equipment of bricklayers and stone masons

HOD CARRIER-PLASTERER TENDER, includes but is not limited to:

1. Serving Plasterers in any capacity;
2. Handling materials after the materials are delivered as used by a Plasterer;
3. Building and handling all necessary trestle, scaffolding and planking of scaffolding for the exclusive use of Plasterers;
4. Building mortar boxes, mortar boards and stands.

IRONWORKER, includes but is not limited to:

1. Performing duties, as part of a crew, to raise, place and unite girders, columns and other structural steel members to form completed structures or structure frameworks;
2. Setting up hoisting equipment for raising and placing structural steel members;
3. Fastening steel members to cable of hoist, using chains, cable or rope;
4. Forcing steel members into final position using turnbuckles, crowbars, jacks, hand tools;
5. Aligning rivet holes in steel members with corresponding holes in previously placed steel members by driving drift pins to handle of wrench through holes;

6. Bolting aligned steel members to keep them in position until the steel members can be permanently riveted, bolted or welded into place;
7. Cutting and welding steel members;
8. Installing and repairing gates, iron doors, flagpoles, iron fences and roof decking;
9. Installing corrugated sheets when attached to steel frames;
10. Stud welding of all iron, steel and metal to structural steel;
11. Handling and setting of steel and metal joists;
12. Loading, unloading, hoisting, handling, signaling, placing and erecting of pre-stressed and pre-cast materials;
13. Handling, racking, sorting, cutting, bending, hoisting, placing, burning, welding and tying all material used to reinforce concrete construction;

LABORER, includes but is not limited to:

Perform tasks involving physical labor at building, highway, and heavy construction projects, tunnel and shaft excavations, and demolition sites. May operate hand and power tools of all types: air hammers, earth tampers, cement mixers, small mechanical hoists, and a variety of other equipment and instruments. May clean and prepare sites, dig trenches, set braces to support the sides of excavations, erect scaffolding, clean up rubble and debris, and remove asbestos, lead, and other hazardous waste materials. May assist other craft workers.

MARBLE MASON, includes but is not limited to:

1. Cutting, tooling, and setting marble slabs in floors and walls of buildings and renovating and polishing marble slabs previously set in buildings;
2. Trimming, facing and cutting marble to a specific size using a power saw, cutting and facing equipment, and hand tools
3. Drilling holes in marble slabs and attaching brackets;
4. Spreading mortar on the bottom and sides of a marble slab and on the side of adjacent marble slabs;
5. Setting blocks in positions, tamping a marble slab into place and anchoring bracket attachments with wire;
6. Filling joints between marble slabs with grout and removing excess grout with a sponge;
7. Cleaning and beveling cracks and chips on marble slabs using hand tools and power tools;
8. Heating cracked or chipped areas of a marble slab with a blowtorch and filling the defect with a composition mastic that matches the grain of the marble slab; and
9. Polishing marble slabs and other ornamental stone to a high luster by using hand tools and power tools.

MECHANICAL INSULATOR, includes but is not limited to:

1. Covering and lining structures with cork, canvas, tar paper, magnesia and related materials;
2. Installing blown-on insulation on pipe and machinery;
3. Lining of mechanical room surfaces and air handling shafts;
4. Filling and damming of fire stops and penetrations including, but not limited to, electrical and mechanical systems;
5. Foam applications for the purpose of thermal, acoustical, or fire protective purposes, including RTV foams or equivalents, applied to mechanical or electrical systems;
6. Duct lining and duct wrapping, direct application and installation of fire protection of grease ducts, exhaust systems, or any other ductwork for acoustical or thermal purposes;
7. Insulation of field joints on pre-insulated underground piping and the pouring of Gilsilite or its equivalent;
8. The application of material, including metal and PVC jacketing, on piping, fittings, valves, flanges, boilers, ducts, plenums, flues, tanks, vats, equipment and any other hot or cold surface for the purpose of thermal control;

MILLWRIGHT, includes but is not limited to:

1. Installing machinery and equipment according to layout plans, blueprints and other drawings in industrial establishments by using hoists, lift trucks, hand tools and power tools;
2. Dismantling machines by using hammers, wrenches, crowbars and other hand tools;

3. Assembling and installing equipment, including, without limitation, shafting, conveyors, monorails and tram rails, by using hand tools and power tools;
4. Constructing foundations for machines by using hand tools and building materials, including, without limitation, wood, cement and steel;
5. Assembling machines and bolting, welding, riveting or otherwise fastening them to a foundation or other structure by using hand tools and power tools; and
6. Repairing and lubricating machines and equipment (at the site of the public work) assembled and used by millwrights.

OPERATING ENGINEER, includes but is not limited to:

Operate one or several types of power construction equipment, such as motor graders, bulldozers, scrapers, compressors, pumps, derricks, shovels, tractors, or front-end loaders to excavate, move, and grade earth, erect structures, or pour concrete or other hard surface pavement.

PAINTER, includes but is not limited to:

1. All painting of walls, equipment, buildings, bridges and other structural surfaces by using brushes, rollers and spray guns;
2. Application of wall coverings/wall paper;
3. Removing old paint to prepare surfaces before painting the surface;
4. Mixing colors or oils to obtain desired color or consistency;
5. Sanding surfaces between coats and polishing final coat to a specified finish;
6. Cutting stencils and brushing and spraying lettering and decorations on surfaces;
7. Washing and treating surfaces with oil, turpentine, mildew remover or other preparations;
8. Filling cracks, holes and joints with caulk, putty, plaster or other filler by using caulking gun or putty knife;

PILEDRIVER, includes but is not limited to:

1. Operating pile drivers mounted on skids, barge, crawler, treads or locomotive crane to drive piling as foundations for structures including, without limitation, buildings, bridges and piers;
2. Barking, shoeing, splicing, form building, heading, centering, placing, driving, staying, framing, fastening, automatic pile threading, pulling and/or cutting off of piling;
3. Fabricating, forming, handling and setting of all such pre-cast, pre-stressed and post-stressed shapes that are an integral part of docks, piers, wharves, bulkheads, jetties, and similar structures;

PIPEFITTER, includes but is not limited to:

Assembling, installing, modifying and maintaining pipe systems, pipe supports and pneumatic equipment and related machines and equipment components for steam, hot water, heating, cooling, lubricating, sprinkling and industrial and processing systems which may require:

a. Cutting, threading and hammering pipe to specifications using tools, including, without limitation, saws, cutting torches and pipe threaders and benders;
b. Attaching pipes to walls, structures and fixtures, including without limitation, radiators or tanks, using brackets, clamps, tools, or welding equipment;
c. Coating non-ferrous piping materials by dipping in mixture of molten tin and lead to prevent erosion, or galvanic and electrolytic action;

PLASTERER, includes but is not limited to:

1. Applying coats of plaster onto interior or exterior walls, ceilings, or partitions of buildings to produce a finished surface according to blueprints, architects' drawings and oral instruction;
2. Creating decorative textures in finish coat by using sand, pebbles or stones;
3. Installing guide wires on exterior surfaces of buildings to indicate thickness of plaster or stucco;
4. Applying weatherproof, decorative covering to exterior surfaces of a building;

5. Molding and installing ornamental plaster pieces, panels and trim;
6. Directing workers to mix plaster to a desired consistency;
7. Assembly of EFIS panels;
8. Laying out, cutting, joining, fitting and installation of Architectural Foam Elements which are trowel applied or adhesive set;
9. Applying, shaping, cutting, and planing in preparation for netting done by hand or machine;
10. All plaster or synthetic finishes applied to Foam Architectural Elements

PLUMBER, includes but is not limited to:

Assembling, installing and repairing pipes, fittings and fixtures for heating, water and drainage systems inside of buildings and to a point 5 feet outside of buildings which may therein require:

a. Repairing and maintaining plumbing by replacing defective washers, repairing or mending broken pipes, and opening clogged drains;
b. Assembling pipe sections, tubing and fittings by using screws, bolts, solder, plastic solvent and caulking;
c. Installing pipe assemblies, fittings, valves and fixtures, including, without limitation, sinks, toilets and tubs, by using hand tools and power tools;
d. Cutting openings in structures, excluding concrete, to accommodate pipe and pipe fittings by using hand tools and power tools;
e. Filling pipes and plumbing fixtures with water or air and observing pressure gauges to detect and locate leaks.

REFRIGERATION MECHANIC, includes but is not limited to:

1. Installing and repairing industrial and commercial refrigeration systems;
2. Mounting compressors, condensers and other refrigeration components to the frame of a refrigerator by using hand tools and acetylene welding equipment;
3. Assembling structural and functional components needed for refrigeration, including, without limitation, controls, switches, gauges, wiring harnesses, valves, pumps, compressors, condensers, cores and pipes;
4. Installing expansion and control valves by using hand tools and acetylene welding equipment;
5. Cutting, bending, threading and connecting pipe from functional components to water, power or refrigeration systems;
6. Fabricating and assembling components and structural portions of a refrigeration system;

ROOFER, includes but is not limited to:

1. Installing and covering roofs and structures with slate, asphalt, wood and other related materials, other than sheet metal, by using brushes, knives, punches, hammers and other tools;
2. Spraying roofs, sidings and walls with material to bind, seal, insulate or soundproof sections of a structure;
3. Installation of all plastic, slate, slag, gravel, asphalt and composition roofing, and rock asphalt mastic when used for damp and waterproofing;
4. Installation of all damp resisting preparations when applied on roofs with mop, three-knot brush, roller, swab or spray system;
5. All types of preformed panels used in waterproofing;
6. Handling, hoisting and storing of all roofing, damp and waterproofing materials;
7. The tear-off and/or removal of roofing and roofing materials;

SHEET METAL WORKER, includes but is not limited to:

1. Fabricating, assembling, dismantling, installing or repairing:
    - 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;
2. Setting up and operating fabrication machines to cut, bend and straighten sheet metal;

3. Shaping metal over anvils, blocks or forms using a hammer;
4. Operating soldering and welding equipment to join sheet metal parts;
5. Inspecting, assembling and smoothing seams and joints of burred surfaces;
6. Welding, soldering, bolting, riveting, screwing, clipping, caulking or bonding component parts to assemble products by using hand tools, power tools and devices for lifting and handling;

SPRINKLER FITTER, includes but is not limited to:

Installing, dismantling, maintaining, repairing, adjusting and correcting all fire protection and fire control systems, including the installation of piping or tubing, appurtenances and equipment pertaining thereto, including both overhead and underground water mains, fire hydrants, and hydrant mains, standpipes and hose connection to sprinkler systems, sprinkler tank heaters, air lines and thermal systems used in connection with sprinkler and alarm systems.

SURVEYOR, includes but is not limited to:

1. Planning ground surveys designed to establish base lines, elevation and other geodetic measurements;
2. Compiling data relevant to the shape, contour, gravitation, location, elevation and dimension of land and land features on or near the surface of the Earth for engineering, map making, mining, land evaluation, construction and other purposes;
3. Surveying bodies of water to determine navigable channels and to secure data for construction of breakwaters, piers and other marine structures;
4. Computing data necessary for driving and connecting underground passages, underground storage and volume of underground deposits.

TAPER, includes but is not limited to:

1. Sealing joints between plasterboard or other wallboards to prepare a wall surface for painting or papering;
2. Mixing sealing compound by hand or with a portable electric mixer and spreading the compound over the joints between boards using a trowel, broad knife, or spatula;
3. Filling cracks and holes in walls and ceilings with sealing compound ;
4. Applying texturing compound and primer to walls and ceiling to prepare a surface for a final finish by using brushes, rollers and spray guns;
5. Coating of joint compound or taping mud;

TERRAZZO WORKER, includes but is not limited to:

1. Applying cement, sand, pigment and marble chips to floors and stairways to attain durable and decorative surfacing according to specifications or drawings;
2. Spreading mixtures of sand, cement and water over surface with a trowel to form terrazzo;
3. Cutting metal division strips and pressing the metal division strips into a terrazzo base so that top edges form a desired design or pattern and define level of finished floor surface;
4. Spreading mixtures of marble chips, cement, pigment and water over a terrazzo base to form a finished surface by using a float and trowel;
5. Pre-casting terrazzo blocks in wooden forms

TILE SETTER, includes but is not limited to:

1. Applying tile and materials made for tile in tile-like units to walls, floors, ceilings and promenade roof decks following design specification;
2. Applying glazed, unglazed, mosaic and other ceramic tiles, which are used as a surface on floors, walls, ceilings, and other surfaces and which must be set to specific grade;
3. Applying and floating all setting beds into which glazed, unglazed, mosaic, or other ceramic tiles are set;
4. Leveling and plumbing tiles to a specified grade

TILE, TERRAZZO AND MARBLE FINISHER, includes but is not limited to:

ATTACHMENT A
PREVAILING WAGE RATES FOR CARSON CITY

1. Supplying and mixing construction materials for a tile setter, terrazzo worker or marble setter;
2. Applying grout and finishing the surface of installed tile, terrazzo and marble;
3. Cleaning installed tile, terrazzo and tile surfaces;
4. Renovation and filling chipped, cracked and broken pieces of tile, terrazzo and marble;
5. Grinding and polishing tile, terrazzo and marble;
6. Assisting a tile setter, terrazzo worker or marble setter;

TRAFFIC BARRIER ERECTOR, includes but is not limited to:

Erects or places instruments to provide directional assistance to traffic on or near the public works construction project.

TRUCK DRIVER, includes but is not limited to:

Driving a tractor trailer combination or a truck to transport goods or materials at the site of a public work or between sites of a public work. (Also, see descriptions listed with Truck Driver rates, if any.)

WELL DRILLER, includes but is not limited to:

1. Setting, operating or tending to portable drilling rig machinery and related equipment to drill wells;
2. Extending stabilizing jackscrews to support and level a drilling rig;
3. Installing water well pumps;
4. Drillings wells for industrial water supplies, irrigation water supplies or water supplies for any other purpose; dewatering or other similar purposes; exploration; hole drilling for geologic and hydrologic information; and core drilling for geologic information.

GROUP CLASSIFICATIONS

LABORER, includes but is not limited to:

Group 1
All cleanup work of debris, grounds, and building including windows and tile
Dumpmen or Spotter (other than asphalt)
Handling and Servicing of Flares, Watchmen
General Laborer
Guide Posts and Highway Signs
Guardrail Erection and Dismantling
Limber, Brushloader and Piler
Pavement Marking and Highway Striping
Traffic Control Supervisor
Group 2
Choker setter or Rigger (clearing work only) Pittsburgh
Chipper and similar type brush shredders
Concrete worker (wet or dry) all concrete work not listed in Group3
Crusher or Grizzly Tender
Greasing Dowels
Guinea Chaser (Stakemen)
Panel Forms (wood or metal) handling, cleaning and stripping of Loading and unloading, (Carrying and handling of all rods and material for use in reinforcing concrete
Railroad Trackmen (maintenance, repair or builders)
Sloper
Semi-Skilled Wrecker (salvaging of building materials other than those listed in Group 3)

Group 3

ATTACHMENT A
PREVAILING WAGE RATES FOR CARSON CITY

Asphalt Workers (Ironers, Shovelers, Cutting Machine)
Buggymobile
Chainsaw, Faller, Logloader and Bucker
Compactor (all types)
Concrete Mixer under 1/2 yard
Concrete Pan Work (Breadpan type), handling, cleaning\stripping
Concrete Saw, Chipping, Grinding, Sanding, Vibrator
Cribbing, Shoring, Lagging, Trench Jacking, Hand-Guided Lagging Hammer
Curbing or Divider machine
Curb Setter (precast or cut)
Ditching Machine (hand-guided)
Drillers Helper, Chuck Tender
Form Raiser, Slip Forms
Grouting of Concrete Walls, Windows and Door Jams
Headerboardmen
Jackhammer, Pavement Breaker, Air Spade
Mastic Worker (wet or dry)
Pipewrapper, Kettlemen, Potmen, and men applying asphalt, creosote and similar type materials
All Power Tools (air, gas, or electric), Post Driver
Riprap-Stonepaver and RockSlinger, including placing of sack concrete wet or dry
Rototiller
Rigging and Signaling in connection with Laborers' work
Sandblaster, Potmen, Gunmen or Nozzlemen
Vibra-screed
Skilled Wrecker (removing and salvaging of sash, windows, doors, plumbing and electrical fixtures)

Group 4
Burning and Welding in connection with Laborers' work
Joy Drill Model TWM-2A, Gardner Denver Model DN143 and similar type drills (in accordance with Memorandum of Understanding between Laborers and Operating Engineers dated at Miami, Florida, Feb. 3, 1954) and Track Drillers, Diamond Core Drillers, Wagon Drillers, Mechanical Drillers on Multiple Units
High scalers
Concrete pump operator
Heavy Duty Vibrator with Stinger 5" diameter or over
Pipelayer, Caulker and Bander
Pipelayer-waterline, Sewerline, Gasoline, Conduit
Cleaning of Utility Lines
Slip Lining of Utility Lines (including operation of Equipment)
TV Monitoring and Grouting of Utility Lines
Asphalt Rakers

Group 4A
Foreman

Group 5
Construction Specialists
Blasters and Powdermen, all work of loading, placing, and blasting of all powder and explosives of any type, regardless of method used for such loading and placing
Asbestos removal
Lead abatement
Hazardous waste
Material removal

Group 6
Gunite Foremen, Nozzlemen, Rodmen, Gunmen, Materialmen, Reboundmen
OPERATING ENGINEER, includes but is not limited to:

ATTACHMENT A
PREVAILING WAGE RATES FOR CARSON CITY

Group 1
Engineer Assistant

Group 1A
Heavy Duty Repairman Hellper
Oiler
Parts man

Group 2
Compressor Operator
Material Loader and/or Conveyor Operator (handling building materials)
Pump Operator

Group 3
Bobcat or similar loader, 1/4 cu. yd. or less
Concrete Curing Machines (streets, highways, airports, canals)
Conveyor Belt Operator (tunnel)
Forklift (under 20)
Engineer Generating Plant (500 K.W.)
Mixer Box Operator (concrete plant)
Motorman
Rotomist Operator
Oiler (truck crane)

Group 4
Concrete Mixer Operator, Skip type
Dinky Operator
Forklift (20' or over) or Lumber Stacker
Ross Carrier
Skip Loader Operator (under one (1) cu. yd.)
Tie Spacer

Group 5
Concrete Mixers (over one (1) cu. yd.)
Concrete Pumps or Pumpcrete Guns
Elevator and Material Hoist (one (1) drum)
Groundman for Asphalt Milling and similar

Group 6
Auger type drilling equipment up to and including 30 ft. depth digging capacity m.r.c.
Boom Truck or Dual Purpose a-Frame Truck
B.L.H. Lima Road Pactor or similar
Chip Box Spreader (Flaherty type or similar)
Concrete Batch Plant (wet or dry)
Concrete Saws (highways, streets, airports, canals)
Locomotives (over thirty (30) tons)
Maginnis International Full Slab Vibrator (airports, highways, canals and warehouses)
Mechanical Finishers (concrete) (Clary, Johnson, Bidwell Bridge Deck or similar types)
Mechanical Burn, Curb and/or Curb and Gutter Machine (concrete or asphalt)
Pavement Breaker, Truck Mounted, with compressor combination
Pavement Breaker or Tamper (with or without compressor combination)
Power Jumbo Operator (setting slip-forms, etc., in tunnels)
Roller Operator (except asphalt)
Self-Propelled Tape Machine
Self-Propelled Compactor (single engine)
Self-Propelled Power Sweeper Operator
Slip-Form Pump (power-driven by hydraulic, electric, air, gas, etc. lifting device for concrete forms)
Small Rubber-Tired Tractors
Snooper Crane, Paxton-Mitchell or similar

ATTACHMENT A
PREVAILING WAGE RATES FOR CARSON CITY

Stationary Pipe Wrapping, Cleaning and Bending Machine Operator

Group 7
Auger type drilling equipment over 30 ft. depth digging capacity m.r.c.
Compressor (over 2)
Concrete Conveyor or Concrete Pump, truck or equipment mounted (any assistance required shall be performed by an Assistant to Engineer) Boom length to apply
Concrete Conveyor, Building Site
Drilling and Boring Machine, vertical and horizontal (not to apply to waterliners, wagon drills or jack hammers)
Crusher Plant Engineer
Generators
Kolman Loader
Material Hoist (two (2) or more drums)
Mechanical Finishers or Spreader Machine (asphalt, Barber-Greene or similar)
Mine or Shaft Hoist
Pipe Bending Machines (pipeline only)
Pipe Cleaning Machines (tractor-propelled and supported)
Pipe Wrapping Machines (tractor-propelled and supported)
Portable Crushing and Screening Plants
Post Driller And/Or Driver
Pumps (over 2)
Roller Operator (asphalt)
Screedman (except asphaltic or concrete paving)
Screedman (Barber-Greene and similar) (asphaltic or concrete paving)
Self-Propelled Boom-Type Lifting Device (center mount) (on ten (10) ton capacity or less)
Slusher Operator
Surface Heater and Planer Operator
Trenching Machine (maximum digging capacity three (3) ft. depth) (Any assistance in the operation, if needed, shall be performed by an Assistant to Engineer)
Truck-Type Loader
Welding Machines (gasoline or diesel)

Group 8
Asphalt Plant Engineer
Asphalt Milling Machine
Cast-In-Place Pipe-Laying Machine
Combination Slusher and Motor Operator
Concrete Batch Plant (multiple units)
Dozer Operator
Drill Doctor
Elevating Grader Operator
Grooving and Grinding Machine (highways)
Ken Seal Operator
Loader (up to and including two and one-half (2 1/2) cu. yds)
Mechanical Trench Shield
Mixermobile
Push Cats
Road Oil Mixing Machine Operator Wood-Mixer (and other similar Pugmill equipment)
Rubber-Tired Earthmoving Equipment (up to and including thirty-five (35) cu. yds. "struck " m.r.c., Euclids, T-Pulls, DW10, 20, 21 and similar)
Self-Propelled Compactors with Dozer; Hyster 450, Cat 825 or similar
Sheepfoot
Small Tractor (with boom)
Soil Stabilizer (P & H or equal)
Timber Skidder (rubber-tired) or similar equipment
Tractor-Drawn Scraper
Tractor Operator
Tractor-Mounted Compressor Drill Combination
Trenching Machine Operator (over three (3) feet depth)

ATTACHMENT A
PREVAILING WAGE RATES FOR CARSON CITY

Tri-Batch Paver
Tunnel Badger or Tunnel Boring Machine Operator
Tunnel Mole Boring Machine
Vermeer T-600b Rock Cutter

Group 9
Chicago Boom
Combination Backhoe and Loader (up to and including 3/8 cu. yd.)
Combination Mixer and Compressor (gunite)
Heavy Duty Repairman and/or Welder
Lull Hi-Lift (twenty (20) feet or over)
Mucking Machine
Sub-Grader (Gurries or other types)
Tractor (with Boom) (D6 or larger)
Track-Laying-Type Earthmoving Machine (single engine with tandem scrapers)

Group 10
Boom-Type Backfilling Machine
Bridge Crane
Cary-Lift or similar
Chemical Grouting Machine
Derricks (two (2) Group 10 Operators required when swing engine remote from hoist)
Derrick Barges (except excavation work)
Euclid Loader and similar types
Gradesetter, Grade Checker
Heavy Duty Rotary Drill Rigs
Lift-Slab (Vagtborg and similar types)
Loader (over two and one-half (2 1/2 cu. yds. up to and including four (4) cu. yds.)
Locomotive (over one hundred (100) tons, single or multiple units)
Multiple-Engine Earthmoving Machines (Euclid Dozers, etc.)
Pre-Stress Wire Wrapping Machine
Rubber-Tired Scraper, Self-Loading
Single-Engine Scraper (over thirty-five (35) cu. yds.)
Shuttle Car (Reclaim Station)
Train Loading Station
Trenching Machine multi-engine with sloping attachments (Jefco or similar)
Vacuum Cooling Plant
Whirley Crane (up to and including twenty-five (25) tons)

Group 10A
Backhoe-Hydraulic (up to and including one (1) cu. yd.)
Backhoe (up to and including one (1) cu. yd.) (Cable)
CMI Dual Lane Auto-Grader SP30 or similar type
Cranes (not over twenty-five (25) tons) (hammerhead and gantry)
Finish Blade
Gradalls (up to and including one (1) cu. yd.)
Motor Patrol Operator
Power Shovels, Clamshells, Draglines, Cranes (up to and including one (1) cu. yd.)
Rubber-Tired Scraper, Self-Loading (twin engine)
Self-Propelled Boom-Type Lifting Device, center mount (over 10 tons up to and including 25 tons)

Group 11
Automatic Asphalt or Concrete Slip-Form Paver
Automatic Railroad Car Dumper
Canal Trimmer
Cary Lift, Campbell or similar type
Cranes (over twenty-five (25) tons)
Euclid Loader when controlled from the Pullcat
Highline Cableway Operator

ATTACHMENT A
PREVAILING WAGE RATES FOR CARSON CITY

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 Liebher and Tower Cranes (and similar types)
Wheel Excavator (up to and including seven hundred fifty (750) cu. yds. per hour)
Whirley Cranes (over twenty-five (25) tons)

Group 11A
Band Wagons (in conjunction with Wheel Excavators)
Operator of Helicopter)when used in construction work)
Loader (over twelve (12) cu. yds.)
Multi-Engine Earthmoving Equipment (over seventy-five (75) cu. yds. "struck" m.r.c.)
Power Shovels. Clamshells, Draglines, Backhoes, and Gradalls (over seven 7 cu. yds. m.r.c.)
Remote-Controlled Earth Moving Equipment
Wheel Excavator (over seven hundred fifty (750) cu. yds. per hour)

Group 11B
Holland Loader or similar or Loader (over 18 cu. yds.)

OPERATING ENGINEERS - Steel Fabricator & Erector

Group 1
Cranes over 100 tons
Derrick over 100 tons
Self-Propelled Boom Type Lifting Devices over 100 tons

Group 2
Cranes over 45 tons up to and including 100 tons
Derrick, 100 tons and under
Self Propelled Boom Type Lifting Device, over 45 tons
Tower Crane

Group 3
Cranes, 45 tons and under
Self Propelled Boom Type Lifting Device, 45 tons and under

Group 4
Chicago Boom
Forklift, 10 tons and over
Heavy Duty Repairman/Welder

Group 5
Boom Cat

OPERATING ENGINEER -Piledriver

Group 1
Derrick Barge Pedestal mounted over 100 tons

ATTACHMENT A
PREVAILING WAGE RATES FOR CARSON CITY

Clamshells over 7 cu. yds.
Self Propelled Boom Type Lifting Device, over 100 tons
Truck Crane or Crawler, land or barge mounted over 100 tons

Group 2
Derrick Barge Pedestal mounted 45 tons up to and including 100 tons
Clamshells up to and including 7 cu. yds.
Self Propelled Boom Type Lifting Device over 45 tons
Truck Crane or Crawler, land or barge mounted, over 45 tons up to and including 100 tons

Group 3
Derrick Barge Pedestal mounted under 45 tons
Self Propelled Boom Type Lifting Device 45 tons and under
Skid/Scow Piledriver, any tonnage
Truck Crane or Crawler, land or barge mounted 45 tons and under

Group 4
Assistant Operator in lieu of Assistant to Engineer
Forklift, 10 tons and over
Heavy Duty Repairman/Welder

Group 5
No current classification

Group 6
Deck Engineer

Group 7
No current classification

Group 8
Deckhand
Fireman

ZONE RATES

BRICKLAYER
In addition to BRICKLAYER rates add the applicable amounts per hour, calculated based on a radius of over fifty (50) miles from the Washoe County Courthouse in Reno, Nevada:
Zone 1-0-35 Miles $0.00
Zone 2-36-75 Miles $1.25
Zone 3-Over 75 Miles $5.37

CARPENTER (Building and Heavy Highway and Dam Construction)
In addition to CARPENTER rates add the applicable amounts per hour, calculated from the Washoe County Courthouse:
Zone 1-0 to 50 miles 0.00 (road miles of either the Carson City Courthouse or the Washoe County Courthouse)
Zone 2-51-150 3.00
Zone 3-151-300 miles 4.00
Zone 4-301 miles and over 5.00

ATTACHMENT A
PREVAILING WAGE RATES FOR CARSON CITY

HOD CARRIER-BRICK MASON TENDER
In addition to Hod Carrier Brick Mason Tender rates add the applicable amounts per hour, calculated based on a radius from the Washoe County Courthouse:
Zone 1-35 to 75 miles 1.25
Zone 2-76 miles and over 7.50

HOD CARRIER-PLASTER TENDER
In addition to Hod Carrier Plaster Tender rates add the applicable amounts per hour, calculated based on a radius from the radius of South Virginia and Mill Streets in Reno, Nevada.
Zone 1-0 to 70 miles 0.00
Zone 2-71 miles and over 8.00

LABORER (Highway and Dam Construction only)
In addition to LABORER rates add the applicable amounts per hour, calculated based on a radius from either the Carson City Courthouse or the Washoe County Courthouse:
Zone 1-0 to 50 miles 0.00
Zone 2-50 to 150 miles 2.00 (Based on a radius from the Washoe County Courthouse)
Zone 3-150 to 300 miles 3.00 (Based on a radius from the Washoe County Courthouse)
Zone 4-300 miles and over 4.00 (Based on a radius from the Washoe County Courthouse)

LABORER (Building Construction)
In addition to LABORER rates add the applicable amounts per hour, calculated based on a radius from either the Carson City Courthouse or the Washoe County Courthouse:
Zone 1-0 to 50 miles 0.00
Zone 2-51 to 150 miles 2.00
Zone 3-151 to 300 miles 3.00 (Based on a radius from the Washoe County Courthouse)
Zone 4-300 miles and over 4.00 (Based on a radius from the Washoe County Courthouse)

OPERATING ENGINEER
In addition to: OPERATING ENGINEER; STEEL FABRICATOR and ERECTOR, PILEDRIVER, SURVEYOR, LUBRICATION AND SERVICE ENGINEER rates add the applicable amounts per hour calculated based on a radius from the Washoe County Courthouse:
Zone 1-0 to 50 miles 0.00 (of either the Carson City Courthouse or the Washoe County Courthouse)
Zone 2-51 to 150 miles 2.00
Zone 3-151 to 300 miles 3.00
Zone 4-300 miles and over 4.00

PLASTERER
In addition to PLASTERER rates add the applicable amounts per hour, calculated based on a radius from South Virginia and Mill Street, Reno, Nevada:
Zone 1-0 to 70 miles 0.00 (Fallon, Fallon Naval Air Station, and the City of Yerington shall be free zones).
Zone 2-71 miles and over $8.00

SHEET METAL WORKER
In addition to SHEET METAL WORKER and AIR BALANCE TECHNICIAN rates add the applicable amounts per hour, calculated based on a radius from the courthouse in Reno, Nevada :
Zone 1-0 to 100 miles 0.00
(including the City of Fallon and the Fallon Naval Air Base)
Zone 2-over 100 miles $8.12

TILE SETTER/TERRAZZO WORKER/MARBLE MASON
In addition to TILE SETTER/TERRAZZO WORKER/MARBLE MASON rates add the applicable amounts per hour, calculated based on a radius of over thirty five (35) miles from the Washoe County Courthouse in Reno, Nevada:
Zone 1-0-35 Miles $0.00
Zone 2-51-75 Miles $1.25
Zone 3-Over 75 Miles $5.00

TRUCK DRIVER

ATTACHMENT A
PREVAILING WAGE RATES FOR CARSON CITY

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 B

PRIS 2, REM, #3610
Carson City
A.P.N. 10-281-46

DIVISION OF STATE LANDS
901 S. STEWART STREET, SUITE 5003
CARSON CITY, NV 89701-5246

RIGHT-OF-ENTRY AND CONSTRUCTION AUTHORIZATION

CARSON CITY PUBLIC WORKS DEPARTMENT - WELL #50 WATER SERVICE CONNECTION TO NORTHERN NEVADA CORRECTIONAL CENTER

This Authorization is issued this 8th day of DECEMBER, 2009 by and between the STATE OF NEVADA, acting through the NEVADA DIVISION OF STATE LANDS and the STATE LAND REGISTRAR, for and on behalf of the NEVADA DEPARTMENT OF CORRECTIONS, hereinafter referred to as GRANTOR, and CARSON CITY, hereinafter referred to as GRANTEE:

WHEREAS, GRANTOR owns Carson City Assessor's parcel number 10-281-46; and

WHEREAS, GRANTEE, has made application to and wishes to obtain from the GRANTOR an Authorization to enter onto state land for the purposes to drill a well, equipped with a submersible pump, construct, install, operate and maintain a 12-inch PVC water line to an equipment vault and connect the well to an overhead power line to provide water service to the State of Nevada prior to obtaining a formal easement; and

WHEREAS, NRS 322.100 gives the State Land Registrar the authority to issue a permit, license, or other authorization for any lawful use of state land administered by the Division of State Lands;

WHEREAS, GRANTOR and GRANTEE entered into a Cooperative Agreement on August 11, 2009 for municipal water service for Northern Nevada Correctional Center;

NOW, THEREFORE, for and in consideration of the mutual covenants contained herein and other good and valuable consideration, GRANTOR does hereby authorize GRANTEE the privilege to enter upon property owned by the State of Nevada for the purposes stated above, hereinafter referred to as "the Project," on the following described property being situate in the SW 1/4 SW 1/4 of Section 4, Township 14 North, Range 20 East, M.D.M. as shown on **EXHIBIT A** attached hereto and by reference made a part hereof.

IN FURTHER CONSIDERATION for issuing this Authorization, GRANTEE, its successors and assigns, and/or its agent(s) and contractor(s) understand and agree to the following specific conditions:

1. **PURPOSE:** The property described herein may be used by GRANTEE solely for the Project. The Project shall be executed in accordance with Carson City Production Well #50 and Waterline Connection, Project No. 4.0817, dated March 3, 2009, incorporated herein and by reference made a part hereof.

2. **JURISDICTION OF STATE:** The Authorization for the Project extends only to the areas described in **EXHIBIT A** and shall not be construed to authorize access across private lands. If GRANTEE needs to utilize other portions of the

property not granted to it through this Authorization, a permit, license, easement, or other authorization to do so is required.

3. CONSIDERATION: The State Land Registrar has waived the fee for this Authorization based on a Cooperative Water Use Agreement executed on August 11, 2009 to provide municipal water service to Northern Nevada Correctional Center and allow the State to put its certificated water rights to beneficial use.

4. TERM: This Authorization will become effective when a fully executed and notarized copy is returned to the GRANTOR along with the insurance documents as required herein. Unless terminated sooner by another provision, this Authorization shall terminate on **NOVEMBER 15, 2010** or upon recordation of the Easement, attached hereto as **EXHIBIT B,** which GRANTEE hereby agrees to execute and notarize upon presentation by GRANTOR.

5. PERMITS: This Authorization is subject to the acquisition of all local, regional, state and federal permits and approvals as required by law. GRANTEE agrees to obtain and adhere to the conditions of the necessary permits.

6. INDEMNIFICATION: GRANTEE, its successors and assigns, and/or agent(s) or contractor(s) as Indemnitors agrees to indemnify, defend and hold harmless the State of Nevada and its agents from and against any and all liability for personal injuries, claims, actions, damages, expenses, or for loss of life or property resulting from, or in any way connected with the conditions or use of the premises covered herein, including any hazard, deficiency, defect, or other matter, known or unknown, or connected with the installation and maintenance of the Project. This indemnification

does not exclude the State of Nevada's right to participate in its defense of a matter subject to this indemnification.

7. <u>LIMITED LIABILITY:</u> GRANTOR will not waive and intends to assert all available immunities and statutory limitations in all cases, including, without limitation, the provisions of Nevada Revised Statutes Chapter 41.

8. <u>INSURANCE; CONTRACTORS AND SUB-CONTRACTORS:</u> This provision is applicable to all Non-Governmental Entities engaged to work on the premises granted by this Authorization and does not apply to any GRANTEE considered a Public Entity. GRANTEE, its successors and assigns, agrees to carry and to require their contractors and sub-contractors to carry their own General Liability Insurance Policy issued by an insurance company authorized to do business in the State of Nevada and which is currently rated by A. M. Best as A-VII or better. The insurance policy is to be kept in full force and effect during the term of this Authorization. Such insurance policy shall be at the minimum, in the amount of $1,000,000 per occurrence for bodily injury and property damage and shall via an endorsement, name the *State of Nevada, its officers, employees and agents as additional insureds* for all liability arising from the use of state land. Each liability insurance policy shall also provide for a waiver of subrogation as to all additional insured's. GRANTEE agrees to provide and to require their contractors and sub-contractors to provide to the State of Nevada the Accord 25 Certificate of Insurance as proof of the insurance <u>and</u> an Additional Insured Endorsement, signed by an authorized insurance company representative, to evidence the endorsement of the State as additional insured. **The Certificate of Insurance and**

Additional Insured Endorsement shall be provided by each contractor and sub-contractor prior to their entry upon state property and be sent to:

Rick Murray, Land Agent
Nevada Division of State Lands
901 S. Stewart Street, Suite 5003
Carson City, Nevada 89701

9. ACCESS: An existing dirt access road traversing property managed by the Nevada Department of Corrections will be utilized for ingress and egress for the well construction and water service connection. Contractors, agents and employees of GRANTEE must notify Department of Corrections personnel daily upon arrive and departure from the Project. Brightly colored vests shall be worn at all times by construction personnel during activities associated with this Right-Of-Entry and Construction Authorization.

10. PLANS AND PHOTOGRAPHS: The Project and related activities must be completed in accordance with the submitted application and plans, if any, on file in the office of the Division of State Lands. The Division of State Lands must be notified if any alterations to the Project which would substantially affect the land are made or proposed prior to commencement of or during any work on the Project and related activities. The Division of State Lands reserves the right to prohibit said alterations. If construction activities are being authorized as part of the Project, GRANTEE, agrees to provide the GRANTOR with a set of before and after construction photographs of the Project area to be taken from established points agreed to by GRANTOR.

11. INSPECTION: GRANTOR retains the right to inspect the Project at any time. GRANTEE agrees to notify GRANTOR at least **TWO (2)** business days prior to

the commencement and termination of any activities on the property to allow interested agencies the opportunity to inspect the Project.

12. EXISTING EASEMENTS: GRANTEE, its successors and assigns, and/or its agent(s) or contractor(s) understands and agrees to require contractors to use caution when constructing and placing the Project and supporting equipment because of the possibility of additional utility laterals not known, and to be responsible for damage caused to any other utilities located upon state land. The legally required offsets from any existing gas, electric, water and/or communication lines shall be maintained at all times.

13. HISTORIC DISCOVERIES: If prehistoric or historic remains or artifacts are discovered during the term of this Authorization, work will be temporarily halted and the State Historic Preservation Office at (775) 684-3448 as well as the Division of State Lands at (775) 684-2720 shall be notified. GRANTEE will heed to the responsibilities required under Section 106 of the National Historic Preservation Act of 1966, as amended.

14. DAMAGE TO STATE LAND: GRANTEE, its successors and assigns, and/or its agent(s) or contractor(s) understands and agrees to pay for and be responsible for all direct or indirect damages to the real property, improvements, and personal property of GRANTOR caused by GRANTEE during the term of the Authorization, and further agrees to return the land to its pre-project condition upon completion of the work.

15. MAINTENANCE: GRANTEE, its successors and assigns, shall be responsible for all maintenance of the Project within the authorized area and understands and agrees that the Project must be maintained in good repair at all times.

16. LEGAL DECRIPTIONS: GRANTEE agrees to provide an acceptable legal description of the location of the Project, prepared by a Professional Land Surveyor, within thirty days (30) after completion of the Project. GRANTEE is responsible for all costs incurred in surveying the Project and preparing the legal description. 18. WARRANTIES

17. WARRANTIES: GRANTOR makes no warranty as to the condition of or the adequacy of the property for the proposed uses of GRANTEE.

18. NOTICES: All notices under this Authorization shall be in writing and delivered in person or sent by certified mail, return receipt requested, to GRANTOR and to GRANTEE at their respective addresses set forth below or to such other address as may hereafter be designated by either party in writing:

GRANTOR'S ADDRESS:	**GRANTEE'S ADDRESS:**
Division of State Lands 901 S. Stewart St, Suite 5003 Carson City, NV 89701-5246	Carson City Nevada Public Works Department 3505 Butti Way Carson City, NV 89701

19. ENVIRONMENTAL CONDITIONS: GRANTEE, its successors and assigns, and/or its agent(s) or contractor(s) understands and agrees to construct and maintain the Project within the Nevada Division of Environmental Protection's (NDEP) Best Management Practices guidelines. A Temporary Authorization for the use of mechanized equipment shall be obtained from NDEP prior to conducting any ground disturbing activities near the Clear Creek drainage located immediately west of

the Project. Site-specific measures and/or conditions for water pollution control, equipment limitations, monitoring requirements or other conditions will be prescribed by NDEP before conducting construction activities near this waterway.

20. FURTHER AUTHORIZATIONS: Further authorization from the Division of State Lands is required prior to commencement of any future work or activities at locations other than that described in **EXHIBIT A**.

21. COMPLIANCE TO CONDITIONS: Failure to concur with or comply with any of the conditions contained herein will cause this Authorization to become invalid and shall require the termination and, if applicable, removal of the Project and appurtenances. GRANTEE agrees to provide a copy of this Authorization to its contractors prior to entering and beginning any work on the property described herein.

22. WAIVER: The failure of GRANTOR to insist upon strict performance of any of the covenants and agreements to this Authorization or to exercise any option herein conferred in anyone or more instance, shall not be construed to be a waiver or relinquishment of any such covenants and agreements.

23. SURVIVAL: This Authorization, and all of the terms hereof, shall inure to the benefit of, and be binding upon, the heirs, assigns and successors of the parties hereto, and the rights and obligations of the GRANTEE are, and shall continue to be, joint and several.

24. ENTIRE AGREEMENT: This Authorization and conditions incorporated herein contain all of the agreements between the parties with respect to the matters contained herein. No prior agreement, understanding or verbal statement made by any party is a part hereof. No provisions of the Authorization may be amended or modified

in any manner whatsoever unless incorporated in writing and executed by both parties. When executed by the GRANTOR and GRANTEE, this Authorization shall be binding upon GRANTOR and GRANTEE, their successors and assigns during the term of this Authorization.

25. SEVERABILITY: If any term or provision of this Authorization, or the application thereof to any person or circumstance shall, to any extent, be determined by judicial order or decision to be invalid or unenforceable, the remainder of this Authorization or the application of such term or provision to persons or circumstances other than those as to which it is held to be invalid or unenforceable shall not be affected thereby, and each term and provision of this Authorization shall be valid and shall be enforced to the fullest extent permitted by law.

26. GOVERNING LAW: This Authorization shall be governed by, construed and enforced in accordance with the laws of the State of Nevada.

27. VENUE: Any lawsuit brought to resolve a dispute arising from this Authorization must be brought either in the location of the Project or in Carson City, Nevada.

All covenants and agreements herein contained shall extend to and be a binding contract upon the successors and assigns as the case may be of the respective parties. Authorization given by the Division of State Lands does not give any property rights either in real estate or material nor does it obviate the necessity of obtaining other local, regional, or federal assent to the work authorized. This Authorization may not be assigned.

IN WITNESS WHEREOF, the parties hereto have executed this Authorization as of the day and year first above written.

GRANTOR:

STATE OF NEVADA
Division of State Lands

By _____ Date 12/8/09
JAMES R. LAWRENCE
Administrator and Ex-Officio
State Land Registrar

STATE OF NEVADA)
ss.
CARSON CITY)

On, December 08, 2009, personally appeared before me, a notary public, JAMES R. LAWRENCE, Administrator and Ex-Officio State Land Registrar, Division of State Lands, who acknowledged that he executed the above instrument.

_____
NOTARY PUBLIC

D. ROTHERMEL
NOTARY PUBLIC
STATE OF NEVADA
CARSON CITY COUNTY
APPT. No. 08-8433-3
MY APPT. EXPIRES OCT. 28, 2012

APPROVED:

STATE OF NEVADA
Department of Corrections

By _____ Date 12/11/09
HOWARD SKOLNIK
Director

GRANTEE:

CARSON CITY NEVADA
Public Works Department

By _____
ROBERT CROWELL
Mayor
Carson City, NV 89701

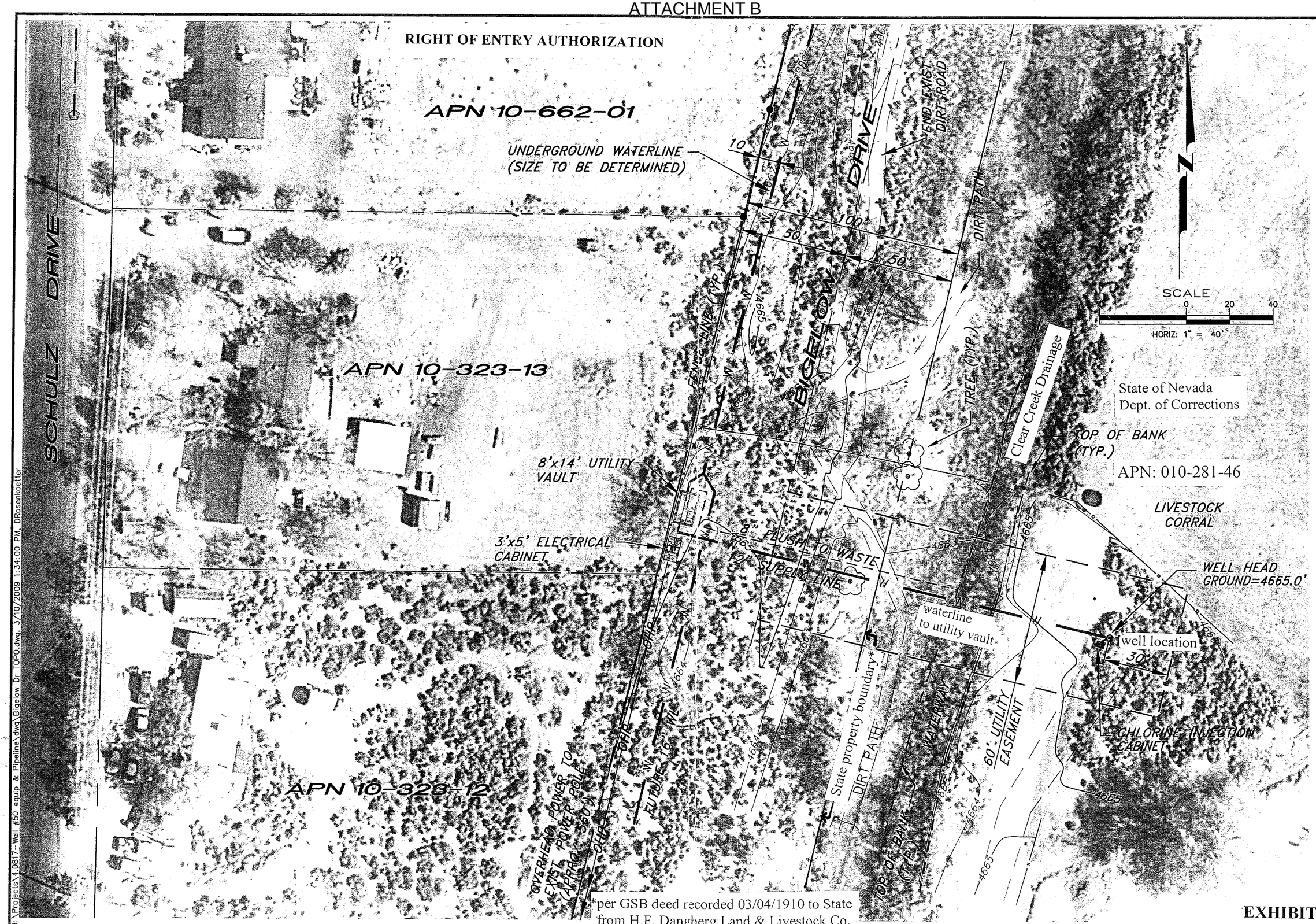
STATE OF NEVADA)
ss.
CARSON CITY)

On, February 3 2010, personally appeared before me, a notary public, Robert Crowell who acknowledged that he executed the above document.

Janet Busse
NOTARY PUBLIC

JANET BUSSE
NOTARY PUBLIC
STATE OF NEVADA
No.05-94721-5 My Appt. Exp. Feb. 4, 2013

ATTACHMENT B



H:\Projects\4.0817-Well #50 equip. & Pipeline\dwg\Bigelow Dr. TOPO.dwg, 3/10/2009 1:34:00 PM, DRosenkoetter

DESIGNED BY:	MB
DRAWN BY:	DR
CHECKED BY:	MB
DWG NO.:	BigelowDr. Topo.DWG
SCALE (HORIZ):	1"=40'
SCALE (VERT):	NA
PLOT DATE:	3-9-09

CARSON CITY
PUBLIC WORKS DEPARTMENT

3505 BUTTI WAY CARSON CITY, NEVADA 89701
PH: 887-2355 FAX: 887-2112

REV.	DATE	DESCRIPTION	BY	APP'D

WATER SERVICE CONNECTION TO NORTHERN NEVADA CORRECTIONAL CENTER (NNCC)

CARSON CITY PRODUCTION WELL #50 & WATERLINE CONSTRUCTION
PROJECT No. 4.0817

SPECIAL USE PERMIT
SITE PLAN
APN 996-001-05

10-281-46

SHEET 1

EXHIBIT "A" MAP