

Mulberry Grove

Contract Documents & Specifications

July 20, 2011



Prepared by:
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Durango, CO 81301

Contract Documents

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INFORMATION FOR BIDDERS

Bids will be received by Mulberry Lane Community, LLC, (herein called the "Owner") until August 9, 2011 5:00 p.m. Bids must be mailed or hand delivered to Mulberry Lane Community, LLC, located at PO Box 264, Moab, UT 84532. Late bids will not be considered and will be returned unopened.

There will be pre-bid walk-through at the site on 8:30 a.m. 7/29/11. Although non-mandatory, attendance is strongly encouraged. Please confirm if you plan to attend at kalen@withgaia.com. Interested parties should meet at the West entrance to Mulberry Grove .

All questions relating to the bid must be submitted via e-mail by 5 p.m. 8/1/11. An addendum with answers, if required, will be available by 5:00 pm on August 3, 2011. If an addendum is issued the contractor **must acknowledge receipt of any and all addenda on the bid form in order to submit a qualifying bid.**

Each Bid must be submitted in a sealed envelope, addressed to Mulberry Lane Community, LLC. The sealed envelope containing a Bid must be plainly marked on the outside "**Mulberry Grove**" and the envelope should bear on the outside the name of the bidder, their address, and the bid opening date.

All Bids must be made on the required Bid form. All blank spaces for Bid prices must be filled in, in ink or typewritten, and the Bid form must be fully completed and executed when submitted. Only one copy of the bid form is required. Any improperly completed bids may not be accepted. No Bid Bond will be required for this project.

The Owner reserves the right to reject any and all Bids, to waive any informalities and minor irregularities in bids, and to accept the Bid deemed in the opinion of the Owner, to be in the best interest of the Owner. Should there be reasons why the Contract cannot be awarded within the specified period, the time may be extended by mutual agreement between the Owner and the Bidder.

Bidders must satisfy themselves as to the accuracy of the estimated quantities in the Bid Schedule by examination of the site and review of the drawings and specifications including Addenda. After Bids have been submitted, the Bidder shall not assert that there was a misunderstanding concerning the quantities of Work or the nature of the Work to be done.

The Bid Documents and any Addenda issued contain the provisions required for the construction of the Project. Information otherwise obtained from an officer, agent or employee of the Owner, or any other person shall not affect the risks or obligations assumed by the Contractor or relieve him from fulfilling any of the conditions of the contract.

The party to whom the Contract is awarded will be required to execute the Agreement within seven (7) calendar days from the date when Notice of Award is delivered to the Bidder. The Notice of Award shall be accompanied by the necessary Agreement and any additional forms. In case the Bidder fails to execute the Agreement, the Owner reserves the right to exercise its option to consider the Bidder in default, in which case, another Bidder will be awarded the project.

Within seven (7) calendar days of receipt of acceptable proof of insurance, W-9, any other required documents, and an Agreement signed by the party to whom the Agreement was awarded, the Owner shall sign the agreement and return to such party an executed duplicate of the Agreement. Should the Owner not execute the Agreement within such period, the Bidder may, by Written Notice, withdraw his signed Agreement. Such notice of withdrawal shall be effective upon receipt of the notice by the Owner.

The Owner shall issue the Notice to Proceed within seven (7) calendar days of the execution of the Agreement. Should there be reasons why the Notice to Proceed cannot be issued within such period, the time may be extended by mutual agreement between the Owner and Contractor. If the Notice to Proceed has not been issued within the seven (7) calendar day period or within the period mutually agreed upon, the Contractor may terminate the Agreement without further liability on the party of either party.

The Owner reserves the right to reject any or all Bids and to waive informalities when such action is deemed to be in the best interest of the Owner.

A conditional or qualified Bid may be cause for rejection. All applicable laws, ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the Projects, shall apply to the Contract throughout.

Each Bidder is responsible for inspecting the site and for reading and being thoroughly familiar with the Contract Documents. The failure or omission of any Bidder to do any of the foregoing shall in no way relieve any Bidder from any obligation in respect to his Bid.

BID FORM

Proposal of _____ (hereinafter called "Bidder"), organized and existing under the laws of the State of _____, doing business as * (Corporation, Limited Liability Company, Partnership, Joint Venture, or Sole Proprietor) to Mulberry Lane Community, LLC (hereinafter called " Owner ").

Bidder acknowledges receipt of any and all addenda, nos. _____ through _____:

Bidder Representative

Date

The Bidder hereby proposes to perform all work for the "Mulberry Grove" project in strict accordance with the Bid Documents, within the time set forth therein, and at the prices stated below.

By submission of this Bid, the Bidder certifies, and in the case of joint Bid, each party thereto certifies as to his own organization, that this Bid has been arrived at independently, without consultation, communication, or agreement as to any matter relating to this Bid with any other Bidder or with any competitor.

Bidder hereby agrees to commence work under this contract on or before a date to be specified in the Notice to Proceed and to fully complete the Project within **Sixty (60)** calendar days thereafter, plus a **five (5)** calendar day allowance for inclement weather if necessary. Bidder further agrees to pay as liquidated damages, and not as penalty, the sum of \$500.00 for each consecutive calendar day thereafter as provided in Section 008.8 of the General Conditions.

The foregoing price shall include all labor, materials, transportation, shoring, removal, dewatering, overhead, profit, insurance, etc. to cover the complete Work in place of the several kinds called for.

Bidder acknowledges that the Owner has the right to delete items in the Bid or change quantities at his sole discretion without affecting the Agreement or prices of any item so long as any change does not exceed a thirty percent (30%) decrease or increase of the line item quantities.

Bidder agrees to perform all work described in the Bid Documents and as itemized in the Bid Schedule for the following price:

Bid Total from Bid Schedule _____

Signature: _____

Name: _____

Title: _____

Company: _____

Address: _____

Telephone: _____

NOTARY:

(SEAL) - if bid is by a Corporation

ATTEST:

Name: _____
(Please Type)

Title: _____

Address: _____

(Please Type)

Telephone: _____

Title: _____

Bid Schedule

ITEM#	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL AMOUNT
101	Construction Surveying	LS	1		
301a	Payment and Performance Bonds	LS	1		
301b	Mobilization	LS	1		
401	Clearing & Grubbing	ACRES	2		
402	Asphalt Cutting and Removal	SY	20		
403	Subgrade Preparation	SY	8,828		
404	Unclassified Excavation (Complete in Place)	CY	5,040		
405	Embankment (Complete in Place)	CY	115		
406	Unsuitable Material Excavation	CY	20		
407	Aggregate Base Course (3/4" Minus)	CY	1,643		
408	Aggregate Subbase Course (3" Minus)	CY	1,444		
501	5 1/2-inch Thick Concrete (Not Reinforced)	CY	22		
502	4-inch Thick Concrete (Not Reinforced)	SY	22		
503	Reinforced Concrete Edge (In Parking Areas)	LF	230		
504	Textured, Colored Concrete (Top Treatment Only)	SY	109		
506	Stamped Concrete (Top Treatment Only)	SY	32		
507	Concrete Carport Foundation (3 Piers per Carport)	EACH	4		
600	Asphalt Paving	CY	718		
601	Swale Grading	LF	198		
602	Fence	LF	23		
800a	1/2 inch Schedule 40 PVC	LF	2540		
800b	3/4 inch Schedule 40 PVC	LF	190		
800c	1 inch Schedule 40 PVC	LF	540		
800d	1 1/4 inch Schedule 40 PVC	LF	140		
801a	Sleeve for 1/2 inch Sch. 40 PVC (does not include PVC)	LF	860		
801b	Sleeve for 3/4 inch Sch. 40 PVC (does not include PVC)	LF	70		
801c	Sleeve for 1 inch Sch. 40 PVC (does not include PVC)	LF	150		
801d	Sleeve for 1 1/4 inch Sch. 40 PVC (does not include PVC)	LF	50		
802a	Irrigation Control Wire (18ga/5strands)	LF	750		
802b	Irrigation Control Wire (18ga/7strands)	LF	380		
803	Hunter PGV-101G (with disc filter and pressure regulator)	EACH	4		
804	Drip Risers	EACH	85		
805	Quick Coupler Valve	EACH	3		
806a	1 inch Irrigation Wire Conduit	LF	250		
806b	2 inch Irrigation Wire Conduit	LF	20		
900	12 Inch Reinforced Concrete Pipe	LF	181		
902	Storm Drain Inlets (A, B-2, E-1)	EACH	3		
903	Storm Drain Inlet (E-2)	EACH	1		
904	Reset Storm Drain Inlets (C-1 through C-4)	EACH	4		
905	Connect to Existing Inlet C-1	EACH	1		
	Total				

NOTICE OF AWARD

_____, 2011

Re: **Mulberry Grove**

Dear: Sir or Madam

You are hereby notified that Mulberry Lane Community, LLC has accepted your bid for the above-referenced project in the amount of \$

Within seven (7) calendar days, you are required to provide the following items to Mulberry Lane Community, LLC at PO Box 264, Moab, UT 84532.

- a. Executed Acceptance of Notice of Award (Page 2 of this Notice of Award);
- b. Executed Agreement/Contract (4 originals – must be notarized);
- c. Certificate of Insurance **NAMING** City of Moab **AS AN ADDITIONAL INSURED** and which contains a Notice of Cancellation clause which is absolute and does **not** contain language such as “endeavor to” notify or “failure to mail such notice shall impose no obligation or liability of any kind upon the company, its agents or representatives.” If standard certificate is used with such language crossed out, representative shall **initial and date said deletions**.
- d. Proof of Workers’ Compensation coverage;
- e. Payment and Performance Bonds, as included as an ADD ON to the Bid;
- f. Completed W-9.

If you fail to return the above-described items within seven (7) calendar days, from the date of this Notice of Award, Mulberry Lane Community, LLC will be entitled to consider all your rights arising out of the acceptance of your bid as abandoned. Mulberry Lane Community, LLC will be entitled to such other rights as may be granted by law.

Sincerely,

Mulberry Lane Community, LLC

ACCEPTANCE OF NOTICE OF AWARD

Mulberry Grove

Receipt of the Notice of Award is hereby acknowledged on this day of _____ 2011.

By _____

Signature _____

Title _____

Company _____

Please execute and return this form with the contract, Certificates of Insurance, bonds, and completed W-9 in one envelope to:

Mulberry Lane Community LLC
Attn. Mr. Kalen Jones, Partner
PO Box 264, Moab, UT 84532

AGREEMENT

THIS AGREEMENT, made this day of _____, 2011 by and between Mulberry Lane Community, LLC hereinafter called, " Owner " and _____, hereinafter called "Contractor".

WITNESSETH:

That for and in consideration of the payments and agreements hereinafter mentioned:

1. The Contractor will commence and complete Mulberry Grove Project. The contractor will furnish all of the materials, supplies, tools, equipment, labor and other services necessary for the construction and completion of the Project described herein.
3. The Contractor will commence the work required by the Contract Documents within seven (7) calendar days after the date of the Notice to Proceed and will complete the work within Sixty (60) days, plus a five (5) calendar day allowance for inclement weather if necessary.
4. The Contractor agrees to perform all the Work described in the Contract Documents and comply with the terms therein for the sum of _____, _____ or as shown in the Bid Schedule.
5. The term "Contract Documents" means and includes the following:
 - (A) The Proposal
 - (B) Information for Bidders
 - (C) Bid
 - (D) Bid Schedule
 - (E) Notice of Award
 - (F) Acceptance of Notice
 - (G) Agreement
 - (H) Notice to Proceed
 - (I) Change Orders
 - (J) Special Provisions
 - (K) General Conditions and Standard Specifications
 - (L) Design Drawings
 - (M) Addenda

6. The Owner certifies that funds have been appropriated and will pay to the Contractor in the manner and at such time as set forth in the Special Provisions such amounts as required by the Contract Documents.
7. This Agreement shall be binding upon all parties hereto and their respective heirs, executors, administrators, successors and assigns.

IN WITNESS WHEREOF, the parties hereto have executed or caused to be executed by their duly authorized officials, four (4) copies of this agreement, each of which shall be deemed an original on the date first above written.

Owner:
Mulberry Lane Community, LLC
By: _____
Name: Mr. Kalen Jones
Title: Partner

(SEAL)

ATTEST:

Name: _____
(please type)
Title: _____

Contractor:
By: _____
Name:
Title:

(SEAL)

ATTEST:

Name: _____
(please type)
Title: _____

NOTICE TO PROCEED

DATE:

Re: Mulberry Grove Project

Dear :

The date of Notice to Proceed for the above project is:

In accordance with the Agreement dated _____, you are hereby notified to commence work within seven (7) calendar days after the Notice to Proceed, hence on or before _____.

You are to complete the work within 60 days, plus a five calendar day allowance for inclement weather if necessary, of Notice to Proceed.

Sincerely,

Mulberry Lane Community, LLC

ACCEPTANCE OF NOTICE TO PROCEED

Receipt of the Notice to Proceed is hereby acknowledged on this ____ day of _____, 2011.

By _____

Title _____

Company _____

Please complete and return this form within ten days to:

Mulberry Lane Community LLC
Attn. Mr. Kalen Jones, Partner
PO Box 264, Moab, UT 84532

CHANGE ORDER

Project/Contract Name: **Mulberry Grove Project**

Direct Pay/Purchase Order #: _____ Acct. # _____

Department: Const. Management

Staff Contact: _____

Contractor Name: _____

Address: _____

Original Contract Date: _____

Change Order Number: _____

THE CONTRACT SHALL BE MODIFIED AS FOLLOWS:

JUSTIFICATION:

COST BREAKDOWN:

The original Contract Sum was\$

Net change by previous Change Orders/Contract Modifications.....\$

Contract Sum prior to this Contract Modification\$

The Contract Sum will be increased decreased unchanged by....\$

The new Contract Sum including this Contract Modification will be\$

The original completion date for the Contract was:

The Contract Time will be increased decreased remain the same

The Date of Completion for the Contract therefore is _____.

By: _____ Date: _____

By: _____ Date: _____

IS FUNDING APPROVED IN THE BUDGET? Yes No (attach budget transfer form if necessary)

By: _____ Date: _____

IN WITNESS WHEREOF, The Parties have executed this Change Order
on _____.

CONTRACTOR SIGNATURE:

**Mulberry Lane Community,
LLC:**

By: _____

By: _____

Print Name: _____

Print Title: _____

LIEN WAIVER RELEASE

TO: _____

FROM: _____

PROJECT: Mulberry Grove

1. The CONTRACTOR acknowledges having received payment, except retainage from the OWNER for all work, labor, skill and material furnished, delivered and performed by the CONTRACTOR for the OWNER for anyone in the construction, design, improvement, , alteration, addition or repair of the above described project.
2. In consideration of such payment and other good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, the CONTRACTOR voluntarily waives all rights, claims and liens, including but not limited to, mechanics liens, Miller Act claims (40 U.S.C.A. 270 a and b), stop notices, equitable liens and labor and material bond rights which the CONTRACTOR may now or may afterward have a claim or assert for all and any work, labor, skill or materials furnished, delivered or performed for the construction, design, improvement, alteration, addition or repair of the above described project, against the OWNER or its officers, agents, employees or assigns, against any fund of or in the possession or control of the OWNER, against the project or against all land and the buildings on and appurtenances to the land improved by the project.
3. The CONTRACTOR affirms that all work, labor and materials, furnished, delivered or performed to or for the construction, design, improvement, alteration, addition or repair of project were furnished, delivered or performed by the CONTRACTOR or its agents, employees, and servants, or by and through the CONTRACTOR by various subcontractors or materialmen or their agents, employees and servants and further affirms the same have been paid in full and have released in full any and all existing or possible future mechanics liens or rights or claims against the OWNER or its officers, agents, employees or assigns arising out of the project.
4. The CONTRACTOR agrees to defend and hold harmless the OWNER, the lender, if any, and Surety on the project against and form any claim hereinafter made by the CONTRACTORS

subcontractors, materialmen, employees, servants, agents or assigns out of the project for all loss, damage and costs, including reasonable attorneys fees, incurred as result of such claims.

5. The parties acknowledge that the description of the project set forth above constitutes an adequate description of the property and improvements to which this Lien Waiver Release pertains. It is further acknowledged that this Lien Waiver Release is for the benefit of and may be relied upon by the OWNER, the lender, if any, and Surety any labor and material bonds for the project.

Signed this _____ day of _____ 20 _____

CONTRACTOR:

By: _____

Title: _____

ATTEST:

Secretary/Witness

STATE OF UTAH

COUNTY OF GRAND

Subscribed and sworn before me this _____ day of

_____, 20____, by _____

Witness my hand and official seal.

My Commission Expires: _____

Notary Public

GENERAL CONDITIONS

001 ABBREVIATIONS AND DEFINITIONS

001.1 SCOPE: Many commonly used abbreviations appear in these specifications and the project drawings. These abbreviations normally require no explanation of definition beyond that contained in standard dictionaries and many technical handbooks.

Abbreviations of technical and construction terms used in these specifications and the project drawings are explained or defined in Section 001.2.

Technical and construction terms used in these specifications and the project drawings are defined in Section 001.3.

001.2 ABBREVIATIONS: Wherever the following abbreviations are used in these specifications, standard details or on the plans, they are to be construed the same as the respective expressions represented.

Abbreviations of technical or construction terms not defined herein shall be construed as defined in the most recent addition of CONSTRUCTION DICTIONARY, published by Greater Phoenix, Arizona Chapter #98 of the National Association of Women in Construction.

AASHTO	American Association of State Highway & Transportation Officials
ACI	American Concrete Institute
ACPA	American Concrete Pipe Association
AGC	Associated General Contractors of America, Inc.
AIA	American Institute of Architects
AIEE	American Institute of Electrical Engineers
AISC	American Institute of Steel Construction
ANSI	American National Standards Institute
APA	American Plywood Association
APHA	American Public Health Association
APWA	American Public Works Association
ASCE	American Society of Civil Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing Materials
AWSC	American Welding Society Code
AWWA	American Water Works Association
IEEE	Institute of Electrical and Electronic Engineers
NBS	National Bureau of Standards
NCPI	National Clay Pipe Institute
NEC	National Electrical Code
NEMA	National Electrical Manufacturer's Association

GENERAL CONDITIONS

NFPA	National Fire Protection Association
NIC	Not in Contract
SAE	Society of Automotive Engineers
USC&GS	United States Coast and Geodetic Survey
USGS	United States Geological Survey

001.3 DEFINITIONS: Technical and construction terms used in these specifications and the Project drawings shall have the meanings indicated, applicable to both the singular and plural thereof. The technical and construction terms that are not defined in this section shall have the meanings set forth in the most recent addition of GLOSSARY, WATER AND WASTEWATER CONTROL ENGINEERING, prepared by AIWA, AWWA and WPCE; or CONSTRUCTION DICTIONARY, published by Greater Phoenix, Arizona Chapter #98 of the National Association of Women in Construction.

ADDENDA Written or graphic instruments issued prior to the execution of the Agreement which modify or interpret the Contract Documents, Drawings and Specifications, by additions, deletions, clarifications or corrections.

AGREEMENT OR CONTRACT

The formal or written agreement or contract executed by the authorized representatives of the Owner and the Contractor for the complete performance of the Project in accordance with the Contract Documents.

AWARD The formal action of the Owner in accepting a proposal.

BID The offer or proposal of the bidder submitted on the prescribed form setting forth the prices for the work to be performed.

BIDDER Any qualified individual, firm partnership, corporation or combination thereof, acting directly or through a duly authorized agent submitting a bid for the work.

BONDS Bid, Performance and Labor or Material Payment Bonds and other instruments of security furnished by the contractor and his surety in accordance with the contract documents.

CHANGE ORDER

A written order to the contractor authorizing an addition, deletion or revision in the work within the general scope of the contract

GENERAL CONDITIONS

documents, or authorizing an adjustment in the contract price or contract time.

CONTRACT DOCUMENTS

All of the integral documents of the contract, including but not limited to, Advertisement for Bids, Information for Bidders, Plans, Drawings, Construction Standards and Standard Details, Special Provisions, Proposal/Bid, Bid Bond, Agreement, Labor and Material Payment Bond, Performance Bond, Notice of Award, Notice to Proceed, Certificates of Insurance, Change Order and Addenda or documents incorporated by reference therein.

CONTRACT PRICE

The total monies payable to the Contractor under the terms and conditions of the Contract Documents.

CONTRACT TIME

The number of calendar days stated in the Contract Documents for the completion of the work.

CONTRACTOR The individual firm, partnership, corporation or combination thereof with whom the Owner has executed the agreement.

CONTRACTING AGENCY (OWNER)

The legal entity that has contracted for the performance of the work or for whom the work is being performed.

DRAWINGS (PLANS)

The part of the contract documents which show the characteristics and scope of the work to be performed and which have been prepared or approved by the engineer.

ENGINEER The person, firm or corporation named as such in the contract documents and licensed to perform such services in the State of Utah.

FIELD ORDER A written order effecting a change in the work not involving an adjustment in the contract price or an extension of the contract time, issued by the Engineer to the contractor during construction.

GENERAL CONDITIONS

NOTICE OF AWARD

The written notice of the acceptance of the bid from the Owner to the successful bidder.

NOTICE TO PROCEED

Written communication issued by the Owner to the contractor authorizing and directing him to proceed with the work and establishing the date of commencement of the work.

OWNER (CONTRACTING AGENCY)

A public or quasi-public body or authority, corporation, association, partnership or individual for whom the work is to be performed.

PROJECT

The undertaking to be performed as provided in the Contract Documents.

RESIDENT PROJECT REPRESENTATIVE

The authorized representative of the Owner who is assigned to the project site or any part thereof.

SHOP DRAWINGS

All drawings, diagrams, illustrations, brochures, schedules and other data which are prepared by the contractor, a subcontractor, manufacturer, supplier, or distributor, which illustrate how specific portions of the work shall be fabricated or installed.

SPECIAL PROVISIONS

The special conditions, requirements, additions and/or revisions to the construction standards, applicable to the work, to cover conditions or requirements peculiar to the project under consideration.

SPECIFICATIONS (CONSTRUCTION STANDARDS)

A part of the contract documents consisting of these General Conditions, special conditions and written descriptions of a technical nature relating to materials, equipment, construction systems, standards and workmanship.

SUBCONTRACTOR

An individual firm or corporation having a direct contact with the contractor or with any other subcontractor for the performance of a part of the work at the site.

GENERAL CONDITIONS

SUBSTANTIAL COMPLETION

The date as certified by the engineer when the construction project or a specified part thereof is sufficiently completed, in accordance with the contract documents, so that the project or specified part can be utilized for the purposes for which it is intended.

SUPPLIER

An individual, firm or corporation having a direct contract with the contractor or with any subcontractor for the manufacture or furnishing of any part of the supplies and/or materials to be used at or incorporated in part of the work at the site.

WORK

All labor necessary to produce the construction required by the contract documents, and all materials and equipment incorporated in the project.

WRITTEN NOTICE

Any written notice from one party of the agreement to any other party of the agreement relative to any part of the contract documents, which notice shall be deemed to have been properly served and delivered when posted by the sending party by Certified or Registered Mail to the receiving party at the receiving party's last given address or when delivered in person to the receiving party or to his or its authorized representative.

002 BIDDING REQUIREMENTS AND CONDITIONS

002.1 ELIGIBILITY AND PREFERENCE

The employment of contractors and subcontractors on this work shall be governed by these General Conditions and Specifications and any applicable provisions included in the Special Provisions.

002.2 CONTENTS OF PROPOSAL

The proposal document will state the location of the contemplated construction; give the description of the various quantities of work to be performed or materials to be furnished, and have a Bid Schedule of pay items for which unit bid prices are invited. The proposal documents shall also state the form and amount of the proposal guarantee, the time in which the work shall be completed and may include additional instructions not included in these specifications.

GENERAL CONDITIONS

The Plans, Construction Standards, Standard Details, Special Provisions, and all supplementary documents are essential parts of the contract documents and 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 or conflict, Plans shall govern over both Standard Details and Construction Standards. Special Provisions will govern over standard specifications, standard details and plans.

Each and every provision of law and clause required by law to be inserted in the Contract Documents shall be deemed to be inserted herein, and the Contract Documents shall be read and enforced as though they were included herein.

002.3 INTERPRETATION OF QUANTITIES IN PROPOSAL

The quantities appearing in the proposal are approximate only and are to be used for the comparison of bids. Payment to the contractor will be made only for the actual quantities of work performed and accepted, or for materials furnished in accordance with the Contract Documents at the unit bid price in the Proposal.

Any or all items in the signed agreement may be increased or decreased not more than 20% at the discretion of the Owner without invalidating the unit price in any way. Changes greater than 20% shall be considered to be an alteration to the work and shall be paid for in accordance with the provisions of Section 009.4.

002.4 EXAMINATION OF PLANS, SPECIAL PROVISIONS AND SITE OF WORK

The Owner shall prepare plans and special provisions in accordance with acceptable engineering standards, giving such direction as will enable the contractor to carry them out.

The Bidder shall examine the site of the proposed work and all documents pertaining to the work. It is mutually agreed that the submission of a proposal shall constitute an acknowledgement that the Bidder has made such examination and is familiar with the character, quality and quantity of the work to be performed and material to be furnished.

Logs of test holes, ground water levels and accompanying soil reports furnished by the Owner are furnished for their general information only. Field conditions so set forth shall not constitute a representation or warranty, expressed or implied, that such conditions are actually existent. Bidders shall make their own investigations and form their own estimates of the site conditions.

GENERAL CONDITIONS

No complaint or claim that there was any misunderstanding as to the quantities, conditions or nature of the work will be entertained after submission of the proposal, except as set forth in Section 004.2.

002.5 PREPARATION OF PROPOSAL

The Bidder shall submit his proposal on the forms provided by the Owner. The Bidder shall specify a unit bid price for each pay item where units and approximate quantities are given.

The Bidder shall specify a lump sum price for each pay item where a lump sum price is requested by the Owner.

The total proposal will be obtained by adding the amount bid on the individual pay items. All information shall be in ink or typewritten. In case of a conflict between unit prices and total prices, unit prices shall govern.

The following shall also become a part of the Bidder's proposal:

(A) Acknowledge receipt of and agreement that the proposal is based on the list addenda received with and/or after the receipt of the proposal documents.

(B) Complete all portions of the proposal documents relating to escalation terms and limits if defined in the Special Provisions.

(C) Bidders' signatures will be in ink; attested or witnessed as required by the Bid Form.

002.6 SUBCONTRACTORS' LIST

A list of Subcontractors shall be attached to the proposal. The Bidder shall submit this list showing each specialty Subcontractor to whom he proposed to subcontract any portion of the work.

002.7 IRREGULAR PROPOSALS

Proposals shall be considered irregular and may be rejected for any one of the following reasons:

(A) If the proposal is on a form other than that furnished by the Owner; or if the form is altered or any part thereof is detached.

GENERAL CONDITIONS

- (B) If there are unauthorized additions, statements, conditional or alternate bids, or irregularities of any kind.
- (C) If the Bidder adds any provisions reserving the right to accept or reject an award, or to enter into a Contract pursuant to an award.
- (D) If the proposal does not contain a unit price for each pay item listed except in the case of authorized alternate pay items.
- (E) If the Bidder fails to submit the List of Subcontractors.
- (F) If more than one proposal for the same work is submitted by an individual, partnership or corporation under the same or different names.
- (G) If there is evidence of collusion among Bidders or assistance from any officer of the Owner or of any department thereof.

002.8 BID BONDS

No Bid Bond is required for this project.

002.9 SUBMISSION OF PROPOSAL

The proposal shall be submitted in a sealed envelope. The outside, lower left hand corner of which shall be marked as follows:

Bid of _____, Contractor
For _____
Project No. _____
Owner _____

Envelopes shall be mailed or delivered to the office of the Owner and must be received before the time and date specified in the Information for Bidders or any Addenda.

Proposals received after the time and date specified may be returned, unopened, to the Bidder.

GENERAL CONDITIONS

002.10 WITHDRAWAL OR REVISION OF PROPOSAL

Any Bidder may withdraw or revise a proposal after it has been deposited with the Owner, provided his request is received by the Owner, in writing or by telegram, before the time specified for opening proposals as stipulated herein.

002.11 PUBLIC OPENING OF PROPOSALS

There will be no Public Bid Opening for this Project.

003 AWARD AND EXECUTION OF CONTRACT

003.1 CONSIDERATION OF PROPOSALS

All proposals shall be privately opened. After opening, the respective totals shall be checked and compared by the Owner. The accuracy of the total proposal shall be checked by verifying the extensions and additions. The Unit Bid Price shall govern in all cases. The right is reserved to award the Contract to the Bidder deemed, in the opinion of the Owner, to be in the best interest of the Owner, or to reject all proposals and readvertise for any reason the Owner determines.

Should all proposals be rejected, any and all subsequent changes, additions, addenda, or new sets of plans and Special Provisions shall be provided to all purchasers of the first issue of the plans and Special Provisions at no additional charge, except that out of town bidders will pay shipping charges.

003.2 RETURN OF BID BONDS

If Bid Bonds are required for the project the Bid Bonds or certified checks submitted by the Bidders shall be retained by the Owner until the Contract has been executed by all parties. Retained Bid Bonds or certified checks shall be returned to Bidders upon execution of the Agreement.

003.3 AWARD OF CONTRACT

The Owner shall award the Contract or all proposals will be rejected within 30 days after bid opening. The Owner's award of Contract shall be considered an acknowledgement that funding appropriations exist.

No proposal shall be withdrawn for a period of 30 days after opening without consent of the Owner.

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The successful Bidder shall execute and deliver the prescribed Agreement to the Owner within 14 days after receipt of notice of award, provided that acceptance of the proposal is delivered to the Bidder within the time limit prescribed and prior to withdrawal of the proposal. Required Bonds shall be delivered with the executed Contract.

003.4 REVOCAATION OF AWARD

The Owner reserves the right to revoke the Award at any time prior to execution of the Contract without liability to the Owner.

003.5 CONTRACTOR'S INSURANCE

(A) The Contractor agrees to procure and maintain, at its own cost, a policy or policies of insurance sufficient to insure against all liability, claims, demands, and other obligations assumed by the Contractor pursuant to Section 007.15 of this Contract. Such insurance shall be in addition to any other insurance requirements imposed by this Contract or by law. The Contractor shall not be relieved of any liability, claims, demands, or other obligations assumed pursuant to Section 007.15 of this Contract by reason of its failure to procure or maintain insurance, or by reason of its failure to procure or maintain insurance in sufficient amounts, durations, or types.

(B) Contractor shall procure and maintain, and shall cause any subcontractor of the Contractor to procure and maintain, the minimum insurance coverages listed below. Such coverages shall be procured and maintained with forms and from insurers licensed by the State of Utah and acceptable to the Owner. All coverages shall be continuously maintained to cover all liability, claims, demands, and other obligations assumed by the Contractor pursuant to Section 007.15 of this Contract. In the case of any claims-made policy, the necessary retroactive dates and extended reporting periods shall be procured to maintain such continuous coverage.

(1) Worker's Compensation insurance to cover obligations imposed by applicable laws for any employee engaged in the performance of work under this Contract, and Employers' Liability insurance with minimum limits of FIVE HUNDRED THOUSAND DOLLARS (\$500,000) each accident, FIVE HUNDRED THOUSAND DOLLARS (\$500,000) disease - policy limit, and FIVE HUNDRED THOUSAND DOLLARS (\$500,000) disease - each employee. Evidence of qualified self-insured status may be substituted for the Worker's Compensation requirements of this paragraph. If the Contractor elects to provide coverage through self-insurance, the Owner may require financial statements to assure that the Contractor has sufficient financial capability, as determined by the Owner in its sole discretion, to underwrite such self-insurance. If the Owner determines that the

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Contractor's financial capabilities are insufficient, contractual insurance coverage shall be required of the Contractor.

(2) General Liability insurance with minimum combined single limits of ONE MILLION DOLLARS (\$1,000,000) each occurrence and ONE MILLION DOLLARS (\$1,000,000) aggregate. The policy shall be applicable to all premises and operations. The policy shall include coverage for bodily injury, broad form property damage (including completed operations), personal injury (including coverage for contractual and employee acts), blanket contractual, independent contracts, products, and completed operations. The policy shall include coverage for explosion, collapse, and underground hazards. The policy shall contain a severability of interests provision.

(3) Comprehensive Automobile Liability insurance with minimum combined single limits for bodily injury and property damage of not less than ONE MILLION DOLLARS (\$1,000,000) each occurrence and ONE MILLION DOLLARS (\$1,000,000) aggregate with respect to each of Contractor's owned, hired, or non-owned vehicles assigned to or used in performance of the services. The policy shall contain a severability of interests provision.

(C) The policy required by this Section shall be endorsed to include the Owner and its officers and employees as additional insureds. Every policy required shall be primary insurance, and any insurance carried by the Owner, its officers, and its employees, or carried by or provided through any insurance pool of the Owner, shall be excess and not contributory insurance to that provided by Contractor. No additional insured endorsement to the policy required by this Section shall contain any exclusion for bodily injury or property damage arising from completed operations. The Contractor shall be solely responsible for any deductible losses under any policy required.

(D) The Certificate of Insurance shall be provided to the Owner and completed by the Contractor's insurance agent as evidence that policies providing the required coverages, conditions, and minimum limits are in full force and effect, and shall be reviewed and approved by the Owner prior to commencement of the contract. The certificate shall identify this contract and shall provide that the coverages afforded under the policies shall not be cancelled, terminated, or materially changed until at least 30 days prior written notice has been given to the Owner. The completed certificate of insurance shall be sent to the Owner.

(E) Failure on the part of the Contractor to procure or maintain policies providing the required coverages, conditions, and minimum limits shall constitute a material breach of contract upon which the Owner may immediately terminate this contract or, at its discretion, the Owner may procure or renew any such policy or any extended reporting

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period thereto and may pay any and all premiums in connection therewith, and all monies so paid by the Owner shall be repaid by the Contractor to the Owner upon demand, or the Owner may offset the cost of the premiums against any monies due to the Contractor from the Owner.

(F) The Owner reserves the right to request and receive a certified copy of any policy and any endorsement thereto.

003.6 EXECUTION AND APPROVAL OF CONTRACT

The Contractor shall execute and deliver the Agreement to the Owner within 14 calendar days following receipt of the Notice of Award from the Owner.

The Owner shall approve and execute the Agreement within seven (7) calendar days following receipt of signed Agreement and Certificates of Insurance.

No Contract shall be considered in effect until the Agreement has been fully executed by all parties concerned.

004 SCOPE OF WORK

004.1 WORK TO BE DONE

The Contractor shall perform all work as may be necessary to complete the Contract in a satisfactory and acceptable manner in full compliance with the plans, specifications and terms of the Contract.

The Contractor shall furnish any and all labor, materials, equipment, transportation, utilities, services and facilities required to perform all work for the construction of the project within the time specified.

004.2 ALTERATION OF WORK

The Owner may order changes within the scope of the work without invalidating the Contract. Such changes may be made without notice to the Surety and the Surety shall not be released therefrom. An increase or decrease in the unit cost or completion time requiring an equitable adjustment and a Change Order shall be authorized by the Engineer.

Payment for work occasioned by these changes shall be made in accordance with provisions of Section 009. Completion time adjustment required by these changes shall be made in accordance with the provisions of Section 008.

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004.2.1 SUBSURFACE CONDITIONS

004.2.1.1 The Contractor shall promptly notify the Owner or the Engineer in writing of any subsurface or latent physical condition at the site that differs materially from that indicated in the Contract Documents. Notification shall precede disturbing such conditions.

004.2.1.2 The Contractor shall promptly notify the Owner in writing of any unusual physical conditions at the site which differ materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents. Notification shall precede disturbing such Conditions.

004.2.1.3 The Owner shall promptly investigate the conditions. An equitable adjustment shall be made and the Contract Documents modified by a Change Order should the investigation reveal that the conditions do differ materially and cause an increase or decrease in the cost or time required for performance of the work.

004.2.1.4 Adjustment in compensation because of a change or changes resulting from one or more of the conditions described shall be made in accordance with the provisions of Section 009. Adjustment in Contract time because of such change or changes shall be made in accordance with the provisions of Section 008.

004.3 EXTRA WORK

The Contractor shall perform unforeseen work, for which there is no unit price included in the Contract, whenever it is deemed necessary or desirable in order to fully complete the work as contemplated. Such work shall be governed by all applicable provisions of the Contract documents and payment shall be made in accordance with the provisions of Section 009.5.

The Contractor may claim that instructions received involve extra work under the Contract. If so, he shall give the Owner written notice thereof within 48 hours after receipt of such instructions. In any event, written notice shall precede execution of the work, except in emergencies endangering life or property. No claim shall be valid unless such written notice is given and approved in writing by the Owner or their representative.

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004.4 CHANGES AT CONTRACTOR'S REQUEST

The Contractor may request changes in the plans or specifications which do not materially effect the work or the interests of the Owner. Requests shall be in writing and submitted to the Owner for approval. Such requests may be granted to facilitate the work. The Owner reserves the right to receive an equitable adjustment in the contract price or contract time for authorizing change.

004.5 MAINTENANCE OF TRAFFIC

The Contractor shall not interfere with traffic on streets adjacent to off-street projects. Traffic upon street projects shall be maintained in accordance with the Special Provisions. Detours to by-pass traffic shall be used only after approval by the Owner.

004.6 CLEAN UP AND DUST CONTROL

Throughout all phases of construction, and until final acceptance of the project, the Contractor shall keep the work area clean and free from rubbish, excess materials and debris.

Failure of the Contractor to comply with the Engineer's cleanup orders may result in an order to suspend work until the condition is corrected. No additional compensation or time will be allowed as a result of such suspension.

The Contractor shall take whatever steps, procedures or means required to prevent abnormal dust conditions due to his construction operations. The dust control measures shall be maintained at all times, to the satisfaction of the Engineer.

004.7 FINAL CLEANING UP

All private or public property and grounds occupied by the Contractor in connection with the work shall be cleaned of all rubbish, excess materials, temporary structures and equipment, and, all parts of the work area shall be left in a condition acceptable to the Owner.

005 CONTROL OF WORK

The Contractor will be held strictly to the intent of the Contract Documents in regard to the quality of materials, workmanship and execution of the work.

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005.1 AUTHORITY AND RESPONSIBILITY OF THE ENGINEER

The Engineer shall be the Owner's representative during the construction period. He shall decide questions which may arise as to quality and acceptability of materials furnished and work performed. He shall interpret the intent of the Contract Documents in a fair and unbiased manner. The Engineer shall make visits to the site and determine if the work is proceeding in accordance with the Contract Documents.

The Engineer shall not be responsible for the construction means, controls, techniques, sequences, procedures or construction safety nor shall he direct the Contractor's operations in any manner.

The Contractor shall be furnished additional instructions and detail drawings, by the Engineer, as necessary to carry out the work required by the Contract Documents.

The additional drawings and instructions thus supplied shall become a part of the Contract Documents. The Contractor shall carry out the work in accordance with the additional detail drawings and instructions.

The Engineer may suspend the work, wholly or in part, for any of the following reasons:

- (A) For such period of time deemed necessary due to unsuitable weather conditions.
- (B) Contractor's failure to perform according to the provisions of the Contract.
- (C) Contractor's failure to provide safe working conditions.
- (D) For reasons deemed to be in the public interest.

005.2 DRAWINGS AND SPECIFICATIONS

Drawings will show details of all structures, utilities, lines, elevations, grades, typical cross sections and location and design of all work.

The intent of the specifications and drawings is that the Contractor shall furnish all labor, materials, tools, equipment and transportation necessary for the proper execution of the work in accordance with the Contract Documents and all incidental work necessary to complete the project in an acceptable manner, ready for use, occupancy or operation by the Owner.

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In case of conflict between the drawings and Specifications, the drawings shall govern. Figure dimensions on drawings shall govern over scale dimensions and detailed drawings shall govern over general drawings.

Discrepancies found between the Drawings and Specifications and site conditions or any inconsistencies or ambiguities in the Drawings or Specifications shall be immediately reported, in writing, to the Engineer. The Engineer shall promptly correct such inconsistencies or ambiguities in writing. Any work performed by the Contractor after his discovery of such discrepancies, inconsistencies or ambiguities shall be done at the Contractor's risk, until or unless authorized by the Engineer.

005.3 SHOP DRAWINGS

The Contractor shall provide shop drawings as may be necessary for the prosecution of the work as required by the Contract Documents. The engineer shall promptly review all shop drawings. The engineer's approval of any shop drawing shall not release the Contractor from responsibility for deviations from the Contract Documents. The approval of any shop drawing which substantially deviates from the requirements of the Contract Documents shall be evidenced by a Change Order.

When submitted for the Engineer's review, Shop Drawings shall bear the Contractor's certification that he has reviewed, checked, and approved the Shop Drawings and that they are in conformance with the requirements of the Contract Documents.

Portions of the work requiring a shop drawing or sample submission shall not begin until the shop drawing or submission has been approved by the Engineer. A copy of each approved shop drawing and each approved sample shall be kept in good order by the Contractor at the site and shall be available to the Engineer.

The number of copies of shop drawings required by the Owner will be six (6) unless otherwise specified in the special provisions. The cost of furnishing all shop drawings shall be considered as included in the amount bid for one or more of the pay items.

005.4 CONFORMITY WITH DRAWINGS AND SPECIFICATIONS

All work performed and all materials furnished shall comply with the lines, elevations, grades, cross sections, dimensions and material requirements, including tolerances, shown on the plans or indicated in the specifications.

Materials or finished products incorporated in the work that do not conform to the plans and specifications may be accepted and remain in place. However, the engineer shall determine if reasonably acceptable work has been produced or that the finished product

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substantially complies with the Contract Documents. Acceptance shall be documented by a Change Order providing for an appropriate adjustment in the Contract price.

005.5 COOPERATION OF CONTRACTOR

The Contractor shall be supplied with two (2) sets of Contract Documents. The Contractor shall keep one set available at the work site at all times.

The Contractor shall have on the work site at all times his agent, a competent superintendent capable of reading and understanding the plans and specifications. The superintendent shall have full authority to stop or delay work as directed by the Engineer for testing or inspection or for any reason as specified in Section 005.1.

Emergencies may arise during the progress of the work which may require special effort or require extra shifts of men to continue the work beyond normal working hours. The Contractor shall be prepared to do all such work promptly in case of such emergencies arising. If such emergencies arise out of or as a result of any improper or negligent act or omission of the Owner, the Contractor shall not be paid for all of his work costs actually incurred in excess of normal working hours and normal equipment use.

005.6 COOPERATION WITH UTILITIES

The Owner will notify all municipal agencies, utility companies, all pipeline owners, or other affected parties, and have all necessary adjustments made of the public or private utility fixtures, pipelines, and other appurtenances within or adjacent to the limits of construction as soon as practical.

Water lines, gas lines, wire lines, service connections, water and gas meter boxes, water and gas valve boxes, light standards, cable ways, signals and all other utility appurtenances within the limits of the proposed construction which are to be relocated or adjusted are to be moved by their owners at their expense, except as otherwise provided for in the Special Provisions or as noted on the plans. Existing services found to be in a location different than shown on the plans which require additional cost on the part of the Contractor, shall require issuance of a Change Order in accordance with the proposal Section 009.5.

It is understood and agreed that the Contractor has considered in his proposal all of the permanent and temporary utility appurtenances in their present or relocated positions as shown on the plans and that no additional compensation will be allowed for any delays, inconvenience or damage sustained by him due to any interference from the said utility appurtenance or the operation of moving them. If delays are encountered because

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utility owners fail in their responsibility to relocate or adjust their facilities, the contract time will be adjusted in accordance with Section 008.

The Contractor has considered the location of all permanent and temporary utilities and has included allowance for any delay, inconvenience or damage sustained by the operation of moving of said utility. Delays encountered due to utility owner's failure to relocate or adjust their facilities shall result in an extension of the Contract time in accordance with Section 008.7.

005.7 SEPARATE CONTRACTS

The Owner reserves the right to let other contracts in connection with this project. The Contractor shall afford other Contractors reasonable opportunity for the introduction and storage of their materials and the execution of their work with his. If the proper execution or results of any part of the Contractor's work depends upon the work of any other Contractor, the Contractor shall inspect and promptly report to the engineer any defects in such work that render it unsuitable for such proper execution and results.

The Owner may perform additional work related to the project itself. The Contractor will afford the Owner reasonable opportunity for the introduction and storage of materials and equipment and the execution of work, and shall properly coordinate his work with theirs.

The Owner will not honor any claim for extra compensation due to delays, extra work or extensions of time caused by any other contractors working within the limits of the same project.

Performance of additional work by other Contractors or the Owner that was not noted in the Contract Documents prior to the execution of the Contract shall be subject to written notice to the Contractor prior to starting any such additional work.

The Contractor shall give all utility companies, all pipeline owners and other parties affected the maximum notice possible when their underground or overhead services interfere with his work. The Contractor shall resolve all problems with the utility owners concerned.

005.8 SURVEYS

The owner shall establish all base lines for locating the principal component parts of the work, together with a suitable number of bench marks adjacent to the work. The contractor shall develop and make all detail surveys needed for construction, such as

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slope stakes, batter boards, stakes for pile locations and other working points, lines, elevations and cut sheets.

The Contractor shall carefully preserve bench marks, reference points and stakes and in case of willful or careless destruction, shall be charged with the replacement expense.

005.9 INSPECTION OF WORK

Inspection of the work by the Engineer or his authorized representative shall not be considered as direct control of the work. The direct control of the work shall be the sole responsibility of the Contractor's supervisor.

All materials and equipment used in the construction of the project shall be subject to adequate inspection and testing in accordance with generally accepted standards, as required and defined in the Contract Documents.

The Contractor shall provide the testing and inspection services required by the Contract Documents and other such tests necessary to assure the quality of the work.

Any law, ordinance, rule, regulation or order of a public authority having jurisdiction may require inspections or tests by someone other than the Contractor. If so, the Contractor will give the Engineer timely notice of readiness for such inspections or tests. The Contractor will furnish the Engineer copies of certificates of inspection, testing or approval resulting from such inspections or tests.

Inspections, tests or approvals by the Engineer shall not relieve the Contractor from his obligations to perform the work in accordance with the requirements of the Contract Documents.

The Engineer and his representatives will at all times have access to the work.

Authorized representatives or agents of a participating local, federal or state agencies shall be permitted to inspect the work. The Contractor will provide access to the work for inspection or testing thereof.

The Engineer may order that portions of the work be uncovered, exposed or made available for observation, inspection or testing. The Contractor shall provide all necessary labor, materials, tools and equipment to comply with the Engineer's order. If such portion of the work is determined to be defective, the Contractor shall bear all costs involved, including the cost of reconstruction. If such portion of the work is determined to be in substantial compliance with the Contract Documents, the

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Contractor shall be compensated in accordance with Section 009.5(B). The Contract time shall be extended in accordance with Section 008.6.

005.10 DUTIES OF CONSTRUCTION OBSERVER

Observers employed by the Owner will be authorized to inspect all work done and materials furnished. Such inspection may extend to all or any part of the work and the preparation, fabrication or manufacture of the materials to be used.

The observer will not be authorized to alter or waive the provisions of the Contract. The observer will not be authorized to issue instructions contrary to the plans and specifications or to act as foreman for the Contractor.

The observer will have authority to suspend acceptance of work or materials until any disagreement between the Contractor and the observer can be referred to and decided upon by the Engineer.

005.11 REMOVAL OF UNACCEPTABLE AND UNAUTHORIZED WORK

The Contractor shall remove from the premises all work rejected by the Engineer for failure to comply with the Contract Documents, whether incorporated in the construction or not. The Contractor shall promptly replace or re-execute the work in accordance with the Contract Documents and without expense to the Owner. The Contractor shall also bear the expense of making good all work of other contractors destroyed or damaged by such removal or replacement.

All removal and replacement work shall be done at the Contractor's expense within the Contract period.

No work shall be done without lines and grades having been given by the Engineer. Work done contrary to the instructions of the Engineer, work done beyond the lines shown on the plans, or any extra work done without authority, will be considered as unauthorized work to be removed and to deduct the costs for any monies due or to become due the Contractor.

005.12 MAINTENANCE OF PUBLIC ROADWAYS DURING CONSTRUCTION

Contractor will notify any parties affected by street closures, and will provide them, as well as the Owner, with a schedule of anticipated closures due to construction.

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005.13 FAILURE TO MAINTAIN PUBLIC ROADWAY OR STRUCTURE

This section is inapplicable to the project.

005.14 PARTIAL USE OR OCCUPANCY

Should an urgent or unforeseen need occur, the Contractor agrees to let the Owner use or occupy a unit or portion of the project, such as a structure, utility service or a section of road or pavement prior to final acceptance.

The Owner will prepare a written agreement with the Contractor and accomplish a partial acceptance inspection. The written agreement will include a revised construction schedule, responsibilities for maintenance of the portion of the project partially accepted and continued construction of the original project to final acceptance, payments, insurance and bond requirements.

005.15 ACCEPTANCE

(A) **PARTIAL ACCEPTANCE:** During the prosecution of the project, the Contractor may substantially complete a unit or portion of the Project. The Contractor may request the Engineer to make final inspection of that portion of the work. If the Engineer finds, upon inspection, that the work has been satisfactorily completed in compliance with the Contract, he shall accept the work as being completed and the Contractor shall be relieved of further responsibility for that work. Such partial acceptance shall in no way void or alter terms of the Contract.

(B) **FINAL ACCEPTANCE:** Upon due notice from the Contractor of presumptive completion of the entire project, the Engineer shall make an inspection. If all construction provided for by the Contract is found completed, that inspection shall constitute the final inspection and the Engineer shall make the final acceptance. The Contractor shall be notified in writing of acceptance as of the date of the final inspection.

If the inspection discloses any work, in whole or in part, as being unsatisfactory, the Engineer shall give the Contractor the necessary instructions for correction of same, and the Contractor shall comply with and execute such instructions within the same contract period. Upon correction of the work, another inspection shall be made which shall constitute the final inspection provided the work has been completed. In such event, the Engineer shall make the final acceptance and notify the Contractor in writing of acceptance as of the date of the final inspection.

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006 CONTROL OF MATERIALS

006.1 SOURCE OF MATERIALS AND QUALITY

All construction materials to be used on the work or incorporated into the work shall be subject to the inspection and approval or rejection of the Engineer.

The materials shall meet all quality requirements of these specifications. The Contractor shall notify the Engineer of his proposed source of materials prior to delivery. The Engineer may approve materials at the source of supply or point of manufacture prior to movement to the job site. Such approval does not waive the Engineer's right to inspect the materials at the job site or to reject materials that do not conform to specifications.

006.2 MATERIALS, SERVICES AND FACILITIES

The Contractor shall provide and pay for all materials, labor, tools, equipment, water, light, power, transportation, supervision, temporary construction and all other services and facilities necessary to execute, complete and deliver the work within the specified time.

Manufactured articles, materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned as recommended by the manufacturer.

Materials, supplies and equipment shall be substantially equal to samples submitted by the Contractor and approved by the Engineer.

Materials, supplies or equipment to be incorporated into the work shall not be purchased by the Contractor or the Subcontractor subject to a chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained by the seller.

006.3 SAMPLES AND TESTS OF MATERIALS

All materials to be incorporated into the work may be subject to sampling, testing and approval. Samples furnished shall be representative of the materials to be used. The Engineer may select samples, or may require that samples be delivered by the Contractor to a certified laboratory.

The procedures and methods used to sample and test materials will be determined by the Engineer. Unless otherwise specified samples and tests will be made in accordance with the standard methods of Quality Standards which were in effect and published at

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the time of advertising for Bids. Copies of tests accomplished by the Owner will be furnished the Contractor at his request.

The Engineer may permit the use of some manufactured materials prior to sampling and testing provided they are delivered with either a Certificate of Compliance or a Physical and Chemical Analysis conforming to Quality Standards requirements, stating that the materials comply with the requirements of the specifications. The certificates shall clearly identify each delivery of materials to the work area. The certificates shall be signed by a person having legal authority to bind the supplier or manufacturer. Copies of the certificate shall be delivered to the Engineer.

006.4 PLANT INSPECTION

The Engineer may authorize inspection of materials at the source, point of storage or point of manufacture. The following conditions shall apply in all cases:

(A) The Contractor shall submit a written request for the plant inspection. The request shall include a list of the materials to be inspected, detailed locations of inspection point and listing of responsible persons at location of inspection.

(B) The Contractor shall also insure that the Engineer shall have access to any part of the plant engaged in the manufacturing, production or assembly of the material to be inspected. Access shall be subject to normal work schedules, safety procedures and security of the plant.

Materials delivered to job site that have been damaged or altered subsequent to the plant inspection may be rejected by the Engineer.

006.5 TRADE NAMES AND SUBSTITUTIONS

Plans and specifications may contain references to equipment, materials or patented processes by manufacturer, trade name, make or catalog number. Such references shall be regarded as establishing a standard of quality, finish, appearance, performance or as indicating a selection based upon compatibility with existing equipment or materials. Such reference shall not be construed as limiting the selection to a specified item or source, unless specifically designated.

The use of an alternate item or source may be permitted, subject to the following:

(A) No consideration will be given a request for an alternate prior to bid opening.

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(B) The Contractor may submit a written request for approval of an alternate item or source after Notification of Award of Contract. The request shall include all information necessary for evaluation of quality and suitability for purpose intended. The Contractor shall submit samples when required.

(C) The Engineer shall evaluate the information, perform tests when necessary and make a final decision as to the acceptability of the proposed alternatives. The Engineer shall give the Contractor written notification of his decision within 10 days after receipt of request.

006.6 PATENTS

The Contractor shall pay all applicable royalties and license fees. He shall defend all lawsuits or claims for infringement of any patent rights and save the Owner harmless from loss on account thereof. The Owner shall be responsible for any loss when a particular manufacturer or manufacturers is specified in the Contract documents.

006.7 STORAGE OF MATERIALS

The Contractor shall provide storage facilities and exercise such measures as will insure the preservation of the quality and fitness of all materials and/or equipment approved for storage. Stored items shall be located so as to facilitate their prompt inspection. Portions of the right-of-way easements not required for public travel may be used for storage purposes when approved by the Engineer. Any additional storage area required must be provided by the Contractor. Private property shall not be used for storage purposes without written permission of the owner or lessee. The Engineer may request copies of such written permission. All storage sites shall be restored to their original condition by the Contractor at his expense.

006.8 HANDLING MATERIALS

Materials and/or equipment shall be handled in such a manner as to preserve their quality and fitness for the work. Manufacturers' written requirements shall be followed if different than accepted local practice.

006.9 UNACCEPTABLE MATERIALS

All materials and/or equipment not conforming to the requirements of the specifications, in place or not, may be rejected. Rejected materials and/or equipment shall be removed immediately from the site of the work otherwise permitted by the Engineer. No rejected materials and/or equipment, the defects of which have been subsequently corrected, shall be used until approved in writing by the Engineer.

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Materials which may have been rejected for failure to comply with accepted national standards on any other project shall not be incorporated into this project without written approval of the Owner.

006.10 OWNER FURNISHED MATERIALS

Materials and/or equipment furnished by the Owner will be delivered to the Contractor as indicated in the Special Provisions. The cost of handling and placing shall be included in the appropriate Contract pay sum. The Contractor shall be held responsible for any shortages, deficiencies and damages which may occur after his acceptance.

007 LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC

007.1 PROTECTION OF WORK, PROPERTY AND PERSONS

The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the work. He shall take precautions necessary to provide for the safety of the employees on the work. He shall protect materials and equipment that are to be incorporated into the work. He shall provide protection to prevent damage to other property at or adjacent to the site. Property to be protected shall include pavements, roadways, structures, utilities, trees, lawns, shrubs and walks designated to be incorporated into the completed project.

The Contractor shall comply with all legally applicable laws, orders, ordinance, rules or regulations enacted by the public body having jurisdiction over the work. He will erect and maintain all necessary safeguards for safety and protection as required by the progress of the work. He shall notify owners of adjacent utilities at such time as progress of the work may directly affect them. The Contractor shall remedy all damage, injury or loss to any property caused directly, in whole or in part, by the Contractor, his Subcontractors, or anyone directly employed by any of them.

The Contractor shall act promptly in emergencies to prevent threatened damage, injury or loss to the work or persons or property at, or immediately adjacent to the site. The Contractor is expected to act promptly and without special instruction or authorization from the Owner or Engineer. The Contractor shall submit prompt written notice to the Engineer defining significant changes to the work or to the Contract Documents that resulted from the emergency. The Engineer shall promptly issue a change order covering the changes and deviations involved.

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007.2 SUPERVISION BY CONTRACTOR

The Contractor will supervise and direct the work. He will be solely responsible for the means, methods, techniques, sequences and procedures of construction.

The Contractor shall give the work the constant attention necessary to facilitate the progress thereof, and shall cooperate with the Engineer, his inspectors and other Contractors in every way possible.

All phases of the Project such as concrete work, pipe work, etc. shall be under the direct supervision of a foreman or the superintendent's designated representative on the site who shall have authority to accept instructions with respect to that particular phase of the project, and take action required to properly carry out the work.

The Engineer may require the Contractor to stop work on a specific part of the project until the required supervision is present.

The Contractor shall file with the Engineer the names, addresses and telephone numbers of representatives who can be contacted at any time in case of emergency. These representatives must be fully authorized and equipped to correct unsafe or excessively inconvenient conditions on short notice.

007.3 PERMITS

Permits and licenses of a temporary nature and necessary for the prosecution of the work shall be secured and paid for by the Contractor unless otherwise stated in Special Provisions. Easements for permanent structures or permanent changes in existing facilities shall be secured and paid for by the Owner.

The Contractor shall give all notices and comply with all laws, ordinances, rules and regulations bearing on the conduct of the work as drawn and specified. If the Contractor observes that the contract documents are at variance therewith, he shall promptly notify the Engineer in writing, and any necessary changes shall be adjusted as provided in Section 009.4.

The Contractor shall notify the appropriate permit agencies of actions undertaken as required by the permit.

007.5 ARCHAEOLOGICAL REQUIREMENTS

When the Contractor's excavating operations encounter remains of prehistoric people's dwelling sites or artifacts of historical or archaeological significance, the operations

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shall be temporarily discontinued. The Engineer will contact archaeological authorities to determine the disposition thereof. When directed, the contractor shall excavate the site in such manner as to preserve the artifacts encountered and shall remove them for delivery to the custody of the proper state authorities. Such excavation will be considered and paid for as extra work.

007.6 RESERVED -- ARCHAEOLOGICAL REPORTS

007.7 SAFETY, HEALTH AND SANITATION PROVISIONS

The Contractor shall provide and maintain neat, sanitary accommodations for his employees' use as may be necessary to comply with the requirements and regulations of the Utah State Department of Health. Full use of the Contractor's accommodations shall be provided to the employees of the Owner or the Engineer who might be assigned to the project.

The Contractor shall provide all safeguards, safety devices and protective equipment and take any other actions reasonably necessary to protect the life and health of employees on the job, the safety of the public and to protect property in connection with the performance of the work covered by the Contract.

Precautions shall be exercised by the Contractor at all times for the protection of persons (including employees) and property. The Contractor shall comply with the provisions of all applicable laws pertaining to such protection, including all Federal and State occupational safety and health acts, standards and regulations promulgated thereunder.

007.8 PUBLIC CONVENIENCE AND SAFETY

The Contractor shall at all times conduct his work so as to assure the least possible obstruction to traffic and adjacent residents. The safety and the protection of persons and property of the general public and residents along the street, highway and areas adjacent to the work shall be provided for by the Contractor.

007.9 BARRICADES AND WARNING SIGNS

The Contractor shall provide, erect and maintain all necessary barricades, sufficient lights, danger signals and other traffic control devices and shall take all necessary precautions for the protection of the work and safety of the public. Roads partially or fully closed to traffic shall be protected by effective barricades. Obstructions shall be illuminated during hours of darkness. Suitable warning signs shall be provided to properly control and direct traffic.

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The Contractor shall erect warning signs in advance of any place where operations may interfere with the use of the road by traffic. Warning signs shall be placed at all intermediate points where the new work crosses or coincides with an existing road.

All barricades, lights, control devices, signs and warning devices shall conform in all respects to the provisions of the Manual on Uniform Traffic Control Devices for Streets and Highways, which is hereby made a part of these Specifications.

007.10 USE OF EXPLOSIVES

The use of explosives will be permitted only when authorized in writing by the Engineer and after the Contractor has obtained the necessary permit from the Owner.

The Owner reserves the right to order the discontinuance of blasting operations at any time.

Explosives shall be transported, stored, handled and used in accordance with the provisions and requirements of all applicable laws, ordinance and regulations. Work shall be done in accordance with the recommendations of the AGC Manual of Accident Prevention in Construction and Institute Makers of Explosives.

The approval by the Engineer for the use of explosives shall not relieve the Contractor from his responsibilities. When explosives are used the Contractor will:

- (A) Exercise the utmost care not to endanger life or damage property.
- (B) Be responsible for any and all damages resulting from their use.
- (C) Furnish and erect special signs to warn the public of his blasting operations. They shall be located and maintained so as to be clearly evident to the public during all critical periods of blasting operations.
- (D) Notify each public utility company having structures adjacent to the work of his intention to use explosives. Such notice shall be given sufficiently in advance to enable the companies to advise the Contractor of any precautions that should be taken to protect their structures from damage.
- (E) Make a survey of adjacent properties, before commencing blasting operations, locating on drawings and by photographs all existing cracks and damages to structures. A copy shall be filed with the Engineer, including a report of any property owners who refused to cooperate and permit entry and inspection.

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007.11 PROTECTION AND RESTORATION OF PROPERTY AND LANDSCAPE

The Contractor shall be responsible for the preservation of all public and private property within the limits of the work. He shall protect and prevent disturbance or damage to all land monuments and property marks until the Engineer has witnessed or otherwise referenced their location, nor shall he move them until directed.

Access to private property shall be maintained to minimize inconvenience to the property owner or lessee. The Contractor shall notify the property occupant 24 hours in advance of any construction across driveways and sidewalks shall be minimized by restoring serviceability as quickly as possible.

007.12 CONTRACTOR'S RESPONSIBILITY FOR WORK

The Contractor shall protect and take all necessary precautions against injury or damage to all finished or partially finished work, including protection against action of the elements or from any other cause until the entire project is completed and accepted by the Engineer. Partial payment for completed portions of the work shall not release the Contractor from such responsibility.

The Contractor shall be responsible for the project in case the work is suspended. The Contractor shall take appropriate precautions to prevent or minimize damage to the project. Erection of temporary structures, signs or other facilities may be required to provide the necessary protection.

007.13 CONTRACTOR'S RESPONSIBILITY FOR UTILITY PROPERTY AND SERVICES

The Contractor shall cooperate with the owners of underground or overhead utilities in order that the work may progress in a reasonable manner and that duplication of work may be minimized. The Contractor shall not commence work at points adjacent to the property, equipment or service facilities of utilities until arrangements for protection, removal or movement thereof have been made. The Contractor shall not undertake work adjacent to fire hydrants until the local fire authority has approved provisions for continued use and service.

The Contractor shall be responsible for all damage or injury to property of any character, during the prosecution of the work, resulting from any action, omission, neglect or misconduct in his manner or method of executing the work, or at any time due to defective work or materials, and said responsibility will not be released until the project shall have been completed and accepted.

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The Contractor shall immediately notify the proper authority if any utility service is interrupted as a result of the Contractor's operations. The Contractor shall assist and cooperate with the utility in the restoration of the service.

Utility service interruptions caused by the Contractor's negligence, carelessness or failure to utilize the utility's capabilities in locating services shall be the sole responsibility of the Contractor. If water service is interrupted, repair work shall be continuous until the service is restored.

In case of utility service interruptions caused by the failure or refusal of the utility to identify and/or locate existing utilities, the Contractor shall immediately provide the Engineer written notification of the utility's non-cooperation and proceed only as instructed by the Engineer.

007.14 RIGHT-OF-WAY

Prior to issuance of Notice to Proceed, the Owner shall obtain all land and rights-of-way necessary for carrying out and for the completion of the work to be performed pursuant to the Contract Documents.

007.15 INDEMNIFICATION

The Contractor agrees to indemnify and hold harmless the Owner, its officers, employees, insurers, and self-insurance pool, from and against all liability, claims, and demands, on account of injury, loss, or damage, including without limitation claims arising from bodily injury, personal injury, sickness, disease, death, property loss or damage, or any other loss of any kind whatsoever, which arise out of or are in any manner connected with this contract, if such injury, loss, or damage is caused in whole or in part by, or is claimed to be caused in whole or in part by, the act, omission, error, professional error, mistake, negligence, or other fault of the Contractor, any subcontractor of the Contractor, or any officer, employee, representative, or agent of the Contractor, or which arise out of any worker's compensation claim of any employee of the Contractor or of any employee of any subcontractor of the Contractor. The Contractor agrees to investigate, handle, respond to, and to provide defense for and defend against, any such liability, claims, or demands at the sole expense of the Contractor. The Contractor also agrees to bear all other costs and expenses related thereto, including court costs and attorney fees, whether or not any such liability, claims, or demands alleged are groundless, false, or fraudulent.

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007.16 NO WAIVER OF LEGAL RIGHTS

The Owner will expeditiously make a final inspection and notify the Contractor of acceptance, upon completion of the work. Such final acceptance shall not preclude or prevent the Owner from correcting any measurement, estimate or certificate made before or after completion of the work. Nor shall the Contracting Agency be precluded or prevented from recovering from the Contractor, his surety, or both, any overpayment made or for a failure by the Contractor to fulfill his obligations under the Contract. A Owner waiver on a single part of the work shall not be deemed to be a waiver on any other part of the work.

The Contractor shall be liable to the Owner for any fraud or latent defects or gross mistakes as may amount to fraud and the Owner's rights under any warranty or guaranty.

008 COMMENCEMENT, PROSECUTION AND PROGRESS

008.1 NOTICE TO PROCEED

Neither the Contractor nor any Subcontractor shall commence work on the project prior to receipt of the written Notice to Proceed issued by the Owner. The Contractor shall commence work as soon as practicable after the starting date specified in the Notice to Proceed. All work under the Contract shall be completed within the number of calendar days stated in the proposal, plus extensions stipulated in Change Orders, beginning with the day following the starting date specified in the Notice to Proceed.

The Contractor shall notify the Engineer 24 hours in advance of the time and place where work will begin. Two working days advance notice is required for surveying and staking.

008.2 SUBLETTING OR ASSIGNMENT OF CONTRACT

The Contractor shall not sublet, sell, transfer, assign or otherwise dispose of all or any part of the Contract or Contracts, or of his right, title or interest therein, without prior written consent of the Owner.

The Contractor may utilize the services of specialty Subcontractors on those parts of the work, which under normal contracting practices, are performed by specialty Subcontractors.

The Contractor shall not award work to Subcontractor(s), in excess of fifty (50) percent of the Contract Price, without prior written approval of the Owner.

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The Contractor shall be fully responsible to the Owner for the acts and omissions of his Subcontractors, and of persons directly employed by them, as he is for the acts and omission of persons directly employed by him.

The Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the work to bind Subcontractors to the Contractor by the terms of the Contract Documents and to give the Contractor the same power as regards terminating any subcontract that the Owner may exercise over the Contractor under any provision of the Contract Documents. All subcontracts shall be in writing.

Nothing contained in this Contract shall create any contractual relation between any Subcontractor and Owner.

008.3 SCHEDULES, REPORTS AND RECORDS

The Contractor shall submit information on the work to be performed to the Owner relating to quantities, progress schedules, payrolls, reports, estimates, records and other data as are required by the Contract Documents.

Prior to the commencement of construction, the Contractor shall submit construction progress schedules showing the order in which he proposes to carry on the work.

The progress schedules shall include starting and completion dates of the various parts of this project.

The Special Provisions shall detail requirements for submission of schedules and reports relating to Special Detail Drawings, Shop Drawings, manufacturing schedules, testing and/or inspection of materials purchased for the project and any other specific schedule, report or record.

008.4 LIMITATION OF OPERATIONS

The Contractor shall not perform any work after regular working hours, on weekends or legal holidays without written permission from the Engineer, except for emergencies. The Contractor and the Engineer shall arrange for continuous or periodic inspection of the work, surveys and tests when such work is necessary.

The Engineer may require the Contractor to increase his operations to insure that the construction schedule is attained, should the rate of construction fall behind schedule. The Contractor may be required to increase personnel, shifts and/or overtime operations as well as quantity of equipment until such time as the work is back on schedule.

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Increased operations required shall be at the Contractor's expense unless such increased operations arise out of or are as a result of any improper or negligent act or omission of the Owner in which latter event, the Contractor shall be paid for all of his or its costs actually incurred in excess of normal working hours and normal equipment usage.

008.5 CHARACTER OF WORKMEN: METHODS AND EQUIPMENT

The Contractor shall at all times employ sufficient labor and equipment, for prosecuting the work to full completion in the manner and time required by the Contract Documents.

All workmen shall be competent and have sufficient skill, knowledge and experience their class of work and operation of equipment, to perform all work properly and satisfactorily.

The Engineer may provide the Contractor a written opinion that a specific person or persons are not performing in a proper and skillful manner. Further, the Engineer may request that such person or persons be removed from the work by the Contractor or Subcontractor. The request may also require that persons so removed shall not again be employed in any portion of the work without written approval of the Engineer. The Contractor shall hold the Owner harmless from damages or claims for compensation that may occur in the enforcement of this paragraph.

Should the Contractor fail to remove such person as required above, or fail to furnish suitable and sufficient personnel for the proper prosecution of the work, the Engineer may suspend the work by written notice until such orders are complied with.

All equipment which is proposed to be used on the work shall be of sufficient size and in such mechanical condition as to meet requirements of the work and to produce a satisfactory quality of work. Equipment used on any portion of the project shall be such that it will not damage property adjacent to the work area.

The Contractor shall be responsible for the construction means, methods, controls, techniques, scheduling, sequences, procedures, construction safety and operations throughout the term of the Contract. Should work so produced not conform to the Specifications, the Contractor shall remove the defective work and replace it with work of the specified quality or take such corrective action as approved by the Engineer. No change in basis of payment or Contract Time shall be authorized for defective work replaced or corrective work required.

When the Contract specifies that construction be performed by the use of certain methods and equipment, should work so provided not conform to the Specifications,

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the Contractor may be required to remove the defective work and replace it with work of the specified quality or take such corrective action as approved by the Engineer.

008.6 DETERMINATION AND EXTENSION OF CONTRACT TIME

The number of calendar days allowed for the completion of the work included in the Contract will be as stated in the proposal. The Contract time shall consist of the number of calendar days specified, including all weekends and legal holidays. All calendar days elapsing between the effective dates of any written notice from the Engineer to suspend work and to resume work following suspension shall be excluded. Completion date of the project shall be determined as the date of final inspection on which all deficiencies have been corrected.

The Contractor may submit a written request for an extension to the completion time. The request must set forth specific reasons or conditions beyond the control of or through no fault of the Contractor. The Engineer shall evaluate the request and may extend the time for completion as the conditions justify. If granted, the extended time for completion shall be in full effect the same as though it were the original time for completion.

008.7 WARRANTY

The Contractor shall warrant all materials and equipment furnished or installed, and work performed for a period of one (1) year from the date of final acceptance. The Contractor warrants that the completed system is free from all defects due to faulty materials or workmanship. The Contractor shall promptly make such corrections as may be necessary by reason of such defects, including the repair of any damage resulting from such defects. The Owner will give notice of observed defects with reasonable promptness. The Performance Bond shall remain in full force and effect through the warranty period.

Should any defects develop within one year from the date of final acceptance due to faults in workmanship or materials, the Contractor shall, within 14 calendar days of receipt of written notice from the Owner, begin making the necessary repairs to the satisfaction of the Engineer. Such work shall include the repair or replacement of other work or materials damaged or affected by making the above repairs or corrective work, all at no additional cost to the Owner.

In case of work, materials or equipment for which written warranties are required by the special provisions, the Contractor shall provide or secure from the appropriate Subcontractor or supplier such warranties addressed to and in favor of the Owner and deliver same to the Engineer prior to final acceptance of the work. Delivery of such

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warranties shall not relieve the Contractor from any obligation assumed under any other provisions of the Contract.

008.8 TIME FOR COMPLETION AND LIQUIDATED DAMAGES

The date of beginning and the time for completion of the work are essential conditions of the Contract Documents and the work embraced shall be commenced on the date specified in the Notice to Proceed.

The Contractor will proceed with the work at such a rate or progress to insure substantial completion in the time frame stated in the Bid. Substantial completion is to include all items necessary to open the roads and parking lots to traffic, completion of landscaping planting, completion of installation and testing of all utilities and irrigation piping, and final grading of all disturbed areas

It is expressly understood and agreed, by and between the Contractor and the Owner, that the contract time for the 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 of the work.

Should the Contractor fail to complete the work within the Contract time, or extension of time granted by the Owner, the Contractor shall pay the Owner the amount of liquidated damages specified in the Bid for each calendar day the Contractor may be in default of the time stipulated in the Contract Documents.

008.8.1 The Contractor shall not be charged with liquidated damages provided the delay in completion of the work is due to the following and the Contractor has promptly given written notice of such delay to the Owner or Engineer.

(A) To any preference, priority or allocation order duly assigned by the Owner.

(B) To unforeseeable causes beyond the control and without the fault or negligence of the Contractor, including but not restricted to, acts of God, or of the public enemy, acts of omission of the Owner, floods, epidemics, quarantine restrictions, strikes, material or fuel shortages due to governmental regulations or allocations, freight embargoes and abnormal or unusually severe weather.

Permitting the Contractor to continue and finish the work or any part of it after the time fixed for its completion, or after the date to which the time fixed for its completion may have been extended, will in no way operate

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as a waiver on the part of the Owner of any of its rights under the Contract.

008.9 SUSPENSION OF WORK, TERMINATION AND DELAY

008.9.1 The Owner may suspend all or any portion of the work for not more than 90 days by written notice to the Contractor. The notice shall include the date on which work shall be resumed, and the contractor, shall resume work on that date. The Contractor shall be allowed an increase in the Contract Price or an extension in time of completion, or both, directly attributable to any suspension.

008.9.2 The Owner may terminate the services of the Contractor, and take possession of the project and all materials, equipment, tools, construction equipment and machinery thereon that may be owned by the Contractor. The termination shall be effective ten days after the Owner has delivered written notice to the Contractor. The termination may be initiated for any of the following reasons and shall not prejudice any other right or remedy available to the Owner:

- (A) The Contractor is adjudged bankrupt or insolvent.
- (B) The Contractor makes a general assignment for the benefit of his creditors.
- (C) A trustee or receiver is appointed for the Contractor or for any of his property.
- (D) The Contractor files a petition to take advantage of any debtor's act or to reorganize under any bankruptcy law.
- (E) The Contractor repeatedly fails to supply sufficient skilled workmen, materials or equipment to maintain the construction schedule.
- (F) The Contractor repeatedly fails to make prompt payments to Subcontractors, or for labor, materials or equipment.
- (G) The Contractor disregards laws, ordinances, rules, regulations or orders of any public body having jurisdiction of the work.
- (H) The Contractor disregards the authority of the Engineer.
- (I) The Contractor violates any provision of the Contract Documents.

After termination notice is served, the Owner may proceed to finish the work by whatever method it deems most expedient.

The Contractor shall not be entitled to receive any payment from time of termination until the work is finished. All direct and indirect costs incurred in completing the project shall be assessed against the Contract

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Price. Any residue shall be paid the Contractor. Any unpaid balance shall be immediately paid to the Owner by the Contractor.

008.9.3 The Owner may elect to suspend or abandon the project and terminate the Contract. The action shall be effective ten days after the Owner has delivered written notice to the Contractor. This action may be initiated for any reason, without cause, and shall not prejudice any other right or remedy available to the Owner. The Contractor shall be paid for all work executed. No claim for loss of profits will be considered.

008.9.4 The Contractor may terminate the Contract for any of the following reasons. The termination shall be effective ten days after the Contractor has delivered written notice to the Owner.

(A) The Owner has suspended the work for more than 90 days for reasons other than weather conditions or winter shutdown.

(B) The work is suspended for more than 90 days under the order of the court or other public authority.

(C) The Engineer fails to act on any request for payment within 30 days after its submittal.

(D) The Owner fails to pay the Contractor within 30 days the sum approved by the Engineer or awarded by arbitrators.

The Contractor shall be entitled to payment for all work executed. The Contract will be terminated by the Contractor ten days after receipt of the Contractor's written notification.

009 MEASUREMENTS AND PAYMENTS

009.1 MEASUREMENT OF QUANTITIES

Measurement for pay items in the Contract shall be defined in the in the Special Provisions.

All work completed under the Contract will be measured by the Engineer according to United States standard measures. The methods of measurement and computation to be used in determination of quantities of materials furnished and of work performed under the Contract will be those methods generally recognized as conforming to good engineering practice.

Longitudinal and transverse measurement for area computations will be made horizontally, and no deductions will be made for individual fixtures having an area of

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one square yard or less. The neat dimensions shown on the plans or ordered in writing by the Engineer, shall be used for area computation.

The term "lump sum," when used as a pay item, will mean complete payment for the work described.

Sundry items which are incidental to or required in the construction of the work but are not included as items in the bid schedule shall be considered an integral part of the Contract, and all labor, materials, etc. required for such items shall be furnished by the Contractor and included in the appropriate unit price bid.

009.2 SCOPE OF PAYMENT

Payment for pay items in the Contract shall be as indicated in the applicable Standards or in the Special Provisions.

Payment for the various items in the Contract shall be made at the unit price Bid in the proposal. Payment shall be compensation in full for furnishing all labor, materials, equipment, and appurtenances necessary to complete the work as shown on the plans and as required in the Specifications. Each item, fixture, piece of equipment, etc., shall be complete with all necessary connections and appurtenances, for the satisfactory use and operation of said item. No additional payment will be made for work related to any item unless specifically called for in the Contract.

Payment may be specified to be made on the basis of weight. The weighing shall be done on certified platform scales sealed by the State Inspector. The Contractor shall furnish the Engineer with duplicate Weighmaster's Certificates showing the actual net weights. The Owner will accept the certificates as evidence of the weight delivered.

The Engineer and Contractor may agree to use a weight/volume factor in computing payment for materials to be measured by the cubic yard. An acceptable method of computing volumes of excavation is to determine a weight/volume factor and convert weights to volumes by means of the factor. The weight/volume factor shall be determined by the Engineer. The number of tests used to determine the material weight/volume factor shall also be determined by the Engineer. The locations where the tests are taken shall be those locations specified in the "Method of Measurement" for the particular Bid item, i.e., Unclassified Excavation - in its original position: Fill Construction - in its final compacted position, or as agreed upon by the Engineer and the Contractor.

009.3 ASSIGNMENTS

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Neither the Contractor nor the Owner shall sell, transfer, assign or otherwise dispose of the Contract or any portion thereof, or of his right, title or interest therein, or his obligations thereunder, without written consent of the other party.

009.4 COMPENSATION FOR ALTERATION OF WORK

When the total quantity of the original Contract or the total quantity of any item increases or decreases more than 30 percent, either party may require an adjustment in payment as follows:

(A) A quantity decrease in an item that is in excess of 30% of the quantity bid may require an adjustment when a reasonable cost analysis supports an increase in the unit cost of the fixed costs chargeable to that item.

(B) A quantity increase in an item that is in excess of 30% of the quantity bid may be considered and will apply only to that quantity in excess of 130% of the Bid schedule quantity. Adjustment shall be made when a reasonable cost analysis supports a change in the pro rata share of the fixed costs chargeable to that item. The Engineer reserves the right to require increases in excess of 130% of the bid schedule quantity to be performed on the basis of extra work.

Adjusted unit prices shall include fixed costs as determined above an allowance of 15% of the fixed costs to cover applicable overhead and profit. No claim shall be made by the Contractor for any loss of anticipated profits because of such alterations. No claim shall be made for any variations between the approximate quantities and the quantities of work as completed.

009.5 EXTRA, ALTERED, OR FORCE ACCOUNT WORK

The value of Extra, Altered or Force Account work performed in accordance with the requirements and provisions of Section 004 shall be determined by the Engineer in one or more of the following ways:

(A) By unit Bid prices or lump sum, either as set forth in the original proposal or as agreed upon by both the Contractor and the Engineer and stipulated in the Change Orders authorizing the work. Should both parties fail to agree on a basis of payment, the Engineer may order the work done on an actual cost basis.

(B) By actual cost for which reimbursement will be based in the following manner:

(1) Labor. For all labor and foremen in direct charge of the specific operations, the contractor shall receive the rate of pay (or scale) agreed upon in writing before

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beginning work for each and every hour that said labor and foremen are actually engaged in such work.

An amount equal to 67% of the above rates will also be paid the Contractor to cover overhead, additional bond, property damage and liability insurance, workmen's compensation insurance premiums, unemployment insurance contributions and social security taxes.

In addition to the wage plus 67% of the wage, the actual amount of fringe benefits will be paid to the Contractor for those work classifications which carry fringe benefits resulting from collective bargaining agreements or as required by U.S. Department of Labor Wage Schedules. (Fringe benefits are those payments made by the Contractor to a third party or trustee to cover such things as, but not limited to health and welfare, pensions, vacations, apprenticeship programs and industry advancement funds). Also, the Contractor shall receive the actual costs paid to or in behalf of workmen by reason of subsistence and travel allowances which are the result of a collective bargaining agreement or other employment contract generally applicable to the classes of labor employed by the work. The 67% factor shall not apply to fringe benefits, subsistence and travel allowances paid to the workmen, to a third party, or to a trustee.

(2) Materials. For materials accepted by the Engineer and used, the Contractor shall receive the actual cost of such materials delivered on the Work, including transportation charges by him (excluding machinery rentals as hereinafter set forth), to which cost 15% will be added.

(3) When extra work on a force account basis is performed on the project by a Subcontractor or specialty firm including utilities and railroads, in accordance with the provisions, an extra work order on a percentage based on the following table will be allowed as additional to the total compensation due as calculated under this Subsection. This additional percentage is to reimburse the prime Contractor for the administrative expenses incurred in connection with the work. Bid items and any other work in the original Contract are not to be considered. Percentages allowed will be applied to each individual billing for extra work not to exceed one billing per month.

To \$1,000	10%
Over \$1,000 to \$10,000	\$100 plus 5% of excess over \$1,000
Over \$10,000.....	\$550 plus 3% of excess over \$10,000

Approval of this additional percentage will be made after certified invoices are furnished by the Contractor.

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(4) Equipment. For use of equipment which has been authorized by the Engineer, the Contractor shall be paid in accordance with rental rates specified in the most current issue of the Utah Department of Transportation Rental Rate Guidebook or as agreed upon in writing before the work is commenced. Such rental rates shall exclude labor but shall include fuel and lubricants, to which will be added the cost of transporting such special equipment to the job site.

(5) Miscellaneous. Additional allowance will not be made for general superintendence, the use of small tools, or other costs for which no specific allowance is herein provided.

(6) Compensation. The Contractor's representative and the Engineer shall compare records and agree upon the payment for work done as ordered on a force account basis.

(7) Statements. Payment will not be made for work performed until the Contractor has furnished the Engineer with an itemized statement of the cost of such Extra, Altered or Force Account Work.

Statements shall be accompanied and supported by certified invoices for all materials used. However, if materials used on the Extra, Altered or Force Account Work are not specifically purchased for such work but are taken from the Contractor's stock, then, in lieu of the invoices, the Contractor shall furnish a written statement certifying that such materials were taken from his stock, that the quantity claimed was actually used, and that the price and transportation claimed represent the actual cost to the Contractor.

009.6 ELIMINATED ITEMS

Should any items contained in the proposal be found unnecessary for the proper completion of the work, the Engineer shall notify the Contractor in writing to eliminate the item. Such action will not invalidate the Contract. The Contractor, by Change Order, will be reimbursed for actual work done and all costs incurred, including mobilization of materials and equipment prior to the elimination of such items.

009.7 CHANGE ORDERS

The Contract Price may be changed only by a Change Order. The value of any work covered by a Change Order or of any claim for increase or decrease in the Contract Price shall be determined by one or more of the following methods in the order of precedence listed below:

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- (A) Unit prices previously approved.
- (B) An agreed lump sum.
- (C) The procedure set forth in Subsection 009.5.

009.8 PAYMENTS TO THE CONTRACTOR

Payments will be made in the manner and at such times as set forth in the Special Provisions of the Contract Documents.

The Contractor will indemnify and save the Owner, its agents and employees harmless from all claims growing out of the lawful demands of Subcontractors, laborers, workmen, mechanics, suppliers and furnishers of machinery, parts, equipment, tools and all supplies incurred in the furtherance of the performance of the work. The Contractor shall, at the Owner's request, furnish satisfactory evidence that all obligations of the nature designated above have been paid, discharged or waived. If the Contractor fails to do so, the Owner may, after having notified the Contractor, either pay undisputed unpaid bills or withhold from the Contractor's unpaid compensation a sum of money deemed reasonably sufficient to pay any all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged, whereupon payment to the Contractor shall be resumed in accordance with the terms of the Contract Documents. In paying undisputed bills of the Contractor, any payment so made by the Owner shall be considered as payment made under the Contract Documents by the Owner to the Contractor and the Owner shall not be liable to the Contractor for any such payments made in good faith.

009.9 ARBITRATION

Unless prohibited by local charter, ordinance or other law, all claims, disputes and other matters in question arising out of, or relating to, the Contract Documents or the breach thereof, and aggregating not more than \$50,000 or 10% of the original contract price, whichever is greater, except for claims which have been waived by the making and acceptance of final payment as provided by Section 009.8, shall be decided by arbitration in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association. This provision to arbitrate shall be specifically enforceable under applicable statutes or laws. The award rendered by the arbitrators shall be final, and judgment may be entered upon it in any court having jurisdiction thereof.

Claims, disputes or other matters in question and aggregating more than \$50,000 or 10% of the original contract price may be decided by arbitration, as defined above, provided

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both parties mutually agree in writing to submit such claims, disputes or other matters to arbitration.

Notice of the demand for arbitration shall be filed in writing with the other party to the Contract Documents and with the American Arbitration Association, and a copy shall be filed with the Engineer. Demand for arbitration shall in no event be made on any claim, dispute or other matter in question which would be barred by an applicable statute of limitations.

The Contractor will carry on the Work and maintain the progress schedule during any arbitration proceedings, unless otherwise mutually agreed in writing.

009.10 ACCEPTANCE OF FINAL PAYMENT AS RELEASE

The acceptance by the Contractor of final payment shall be and shall operate as a release to the Owner of all claims and all liability to the Contractor other than claims in stated amounts as may be specifically excepted by the Contractor for all things done or furnished in connection with this work and for every act and neglect of the Owner and others relating to or arising out of this work. Any payment, however, final or otherwise, shall not release the Contractor or his sureties from any obligations under the Contract Documents or the Performance Bond and Labor and Material Payment Bonds, as hereinabove more fully described.

MULBERRY GROVE SPECIAL PROVISIONS 2011

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General

Anywhere in this document where the Moab City Design Standards and Public Improvement Specifications Section 4.3, the UDOT 2008 Standard Specifications for Road and Bridge Construction, the Contract Drawings, Special Provisions, or the Supplemental Conditions conflict, the more stringent of the documents shall apply.

101 Construction Surveying

Description: Includes all labor, materials, and equipment costs associated with construction staking for construction by the Contractor. Includes preparation of record drawings to be provided to the owner and the City of Moab upon completion of the project. Record drawings shall include accurate locations, both horizontally and vertically of all utility lines (including storm sewer) and utility appurtenances (valves, manholes, inlets, etc.)

Any monuments that are disturbed during construction shall be replaced at the contractor's expense.

This item shall include any additional surveying necessary to certify elevations for all earthwork measurements and verification of plan quantities if the contractor thinks there are discrepancies between the quantity determinations of the owner, topographic data shown on the plans and/or the field conditions.

Pay Item: Measurement and payment shall be on a lump sum basis based on percentage completion of the entire job.

301a Payment and Performance Bonds

Description: Includes all costs for Contractor to obtain Payment and Performance Bonds for the amount of the total Project Bid.

Pay Item: Measurement and payment shall be on a lump sum basis.

301b Mobilization

Description: Includes all labor, materials, and equipment costs to mobilize for the project including such items as moving equipment, trucks, and personnel both to the site and off of the site upon completion of the work. All expenses for which there are no specific pay items such as permits, project coordination, materials and quality control testing coordination, storage of materials, removal and disposal of construction debris and temporary supplies, including power, telephone, and temporary offices necessary for the execution of the work, shall be included in this bid item. All work and testing for the work shall conform to the Bid Documents and Contract Drawings. The staging area and surrounding disturbed areas are to be returned to their original condition. Selection and payment of a firm for materials and quality control testing shall be the responsibility of the owner.

Pay Item: Measurement and payment shall be on a lump sum basis based on percentage completion of the entire job.

401 Clearing & Grubbing

Specifications: See the UDOT 2008 Standard Specifications for Road and Bridge Construction and the Moab City Design Standards and Public Improvement Specifications Section 4 with the following modifications to Section 4.3 “right-of-way” to be replaced with “limits of disturbance”. “Limits of disturbance” shall be defined as the minimum area necessary for the contractor to construct the improvements proposed in the drawings.

Description: Includes all labor, materials, and equipment costs associated with cutting, removal, and disposal of surface vegetation and the removal and stockpile of top soil prior to unclassified excavation. Contractor shall make their best effort to avoid removal of excess vegetation on slopes, as its presence significantly improves the slope’s resistance to erosion. All Clearing and Grubbing shall comply with Moab City Design Standards and Public Improvement Specifications Section 4.3 with the following modifications to Section 4.3: “right-of-way” to be replaced with “limits of disturbance”

Pay Item: Measurement and payment will be based on square yards of disturbed area as measured in the field by the owner’s representative.

402 Asphalt Cutting and Removal

Specifications: See the UDOT 2008 Standard Specifications for Road and Bridge Construction.

Description: Includes all labor, materials, and equipment costs associated with cutting and removal of the existing asphalt to form a straight-line joint where new surfacing adjoins existing asphalt surfacing. Work shall include the cutting, complete removal and legal disposal of the existing asphalt to top of base course material.

Pay Item: Measurement and payment shall be on square yard of asphalt removal basis as measured in the field by the owner’s representative.

403 Subgrade Preparation

Specifications: See the UDOT 2008 Standard Specifications for Road and Bridge Construction and the Moab City Design Standards and Public Improvement Specifications Section 4 (or as modified below).

Description: Includes all labor, materials, and equipment costs associated with scarifying the subgrade in both cut and fill areas to a depth of twelve (12) inches and compacted to the equivalent of 90% of maximum dry density as measured by AASHTO T-180 Modified Proctor Test or 95% maximum dry density by AASHTO T-99 Standard Proctor. No rocks larger than four (4) inches in diameter, organic material, soft clay, spongy material, or other deleterious material will be permitted in this scarified subgrade layer. Rough subgrade shall be shaped and graded to within a tolerance of 0.10 foot of design grade, and drainage shall be maintained at all times. During the rolling operation, moisture content of the subgrade layer shall be

maintained at +/- 2% of optimum moisture content. Rolling shall be continued until the entire roadbed is compacted to the specific density to a minimum depth of twelve (12) inches.

Pay Item: Measurement and payment shall be in square yards of reconditioned area measured in place.

404 Unclassified Excavation (Complete in Place)

Specifications: See the UDOT 2008 Standard Specifications for Road and Bridge Construction and the Moab City Design Standards and Public Improvement Specifications Section 4.

Description: Includes all labor, materials, and equipment costs associated with cutting for parking areas and trails per the drawings. Work shall include setting grades, dust control, and watering or dewatering. Work shall include all labor, materials, and equipment costs for loading and hauling excess material to/from the site.

Pay Item: Measurement and payment shall be in cubic yards as measured in place, and shall include the cost of hauling.

405 Embankment (Complete in Place)

Specifications: See the UDOT 2008 Standard Specifications for Road and Bridge Construction and the Moab City Design Standards and Public Improvement Specifications Section 4.

Description: Includes all labor, materials, and equipment costs associated with filling the roads to subgrade. Work shall include the cost of dust control and watering. Compaction and testing shall comply with the UDOT 2008 Standard Specifications for Road and Bridge Construction and the Moab City Design Standards and Public Improvement Specifications Section 4.

Pay Item: Measurement and payment shall be in cubic yards measured in place.

406 Unsuitable Material Excavation

Specifications: See the UDOT 2008 Standard Specifications for Road and Bridge Construction and the Moab City Design Standards and Public Improvement Specifications Section 4.

Description: Includes all labor, materials, and equipment costs associated with the removal of unsuitable material where unstable material is incapable of supporting the paths, drives, trails or parking areas shown on the drawings and is encountered in the bottom of the embankment. Material caused to be unsuitable due to precipitation and/or runoff is not payable under this item and is the contractor's responsibility. For bidding purposes, the amount given in the Bid Schedule is only an estimate and the actual amount of removal necessary may vary substantially from this number. The amount of material to be removed shall be determined by the owner's representative. Work shall include the cost of removal, hauling, and disposal of the unsuitable material.

Pay Item: Measurement and payment shall be on a cubic yard basis measured in place in the field by the owner's representative.

407 Aggregate Base Course (3/4" Minus)

Specifications: See the UDOT 2008 Standard Specifications for Road and Bridge Construction and the Moab City Design Standards and Public Improvement Specifications Section 4.

Description: Includes all labor, materials, testing, submittals, tools, and equipment costs associated with the installation of ¾ inch minus aggregate base course (ABC), per the drawings. Work shall include the cost of hauling, placing, compacting, and fine grading of the required ABC. Compaction and testing shall be to at least 95% of the maximum dry density as defined by AASHTO T-180 or 100% maximum dry density by AASHTO T-99 Standard Proctor and moisture conditioned to +/- 2% of optimum moisture content prior to compaction. Work shall include proof-rolling the ¾ inch minus material to test each lift after it has been compacted. The water truck must have a loaded GVW of 50,000 pounds with a single axle weight of at least 18,000 pounds. Material which is pumping or deforming must be re-worked, replaced, or modified to form a smooth, stable, non-yielding base for subsequent courses.

Pay Item: Measurement and payment shall be in cubic yards as measured on the drawings.

408 Aggregate Subbase Course (3" Minus)

Specifications: See the UDOT 2008 Standard Specifications for Road and Bridge Construction and the Moab City Design Standards and Public Improvement Specifications Section 4.

Description: Includes all labor, materials, testing, submittals, tools, and equipment costs associated with the installation of 3 inch minus aggregate subbase course, per the drawings. Work shall include the cost of hauling, placing, compacting, and fine grading of the required aggregate subbase course. Compaction and testing shall be to at least 95% of the maximum dry density as defined by AASHTO T-180 or 100% maximum dry density by AASHTO T-99 Standard Proctor and moisture conditioned to +/- 2% of optimum moisture content prior to compaction. Work shall include proof-rolling the ¾ inch minus material to test each lift after it has been compacted. The water truck must have a loaded GVW of 50,000 pounds with a single axle weight of at least 18,000 pounds. Material which is pumping or deforming must be re-worked, replaced, or modified to form a smooth, stable, non-yielding base for subsequent courses.

Pay Item: Measurement and payment shall be in cubic yards as measured on the drawings.

501 5 ½-inch Thick Concrete (Not Reinforced)

Specifications: See the Moab City Design Standards and Public Improvement Specifications Section 5 with following revision to Section 5.2.F as follows: Fly ash content shall be between 30 and 40%.

Description: Includes all labor, materials, submittals, tools, and equipment costs associated with placing, consolidation and normal finishing of a 5-½ inch thick section of non-reinforced concrete path/drive/trail shown in the drawings. Concrete shall be a Class A mix (4000 psi) per the Moab City Design Standards and Public Improvement Specifications. The Contractor's proposed concrete mix must be approved by the owner in writing prior to commencement of

work. Includes concrete for parking areas and bike paths adjacent to parking areas. Thickened edge along some parking edges shall be paid for additionally as Item 503.

Pay Item: Measurement and payment shall be on a square yard of concrete basis as measured in the field by the owner's representative.

502 4-inch Thick Concrete (Not Reinforced)

Specifications: See the Moab City Design Standards and Public Improvement Specifications Section 5 with following revision to Section 5.2.F as follows: Fly ash content shall be between 30 and 40%.

Description: Includes all labor, materials, submittals, tools, and equipment costs associated with placing, consolidation and normal finishing of a 4- inch thick section of non-reinforced concrete bike trail shown in the drawings. Concrete shall be a Class A mix (4000 psi) per the Moab City Design Standards and Public Improvement Specifications. The Contractor's proposed concrete mix must be approved by the owner in writing prior to commencement of work.

Pay Item: Measurement and payment shall be on a square yard of concrete basis as measured in the field by the owner's representative.

503 Reinforced Concrete Edge (At Driveways in Parking Areas)

Specifications: See the Moab City Design Standards and Public Improvement Specifications Section 5 with following revision to Section 5.2.F as follows: Fly ash content shall be between 30 and 40%.

Description: Includes all additional labor, materials, submittals, tools, and equipment costs associated with placing 4 1/2 additional inches of concrete and placing two #5 reinforcing bars in edge parallel with the traveled way per the typical section shown in the drawings.

Pay Item: Measurement and payment shall be on a linear foot thickened edge (including both additional concrete and two rebars) as measured in the field by the owner's representative, with payment being in addition to payment under item 501 for regular concrete thickness.

504 Textured, Colored Concrete (Top Treatment)

Specifications: See Mulberry Grove Supplemental Specifications Section 5A.

Description: Includes all additional labor, materials, submittals, tools, and equipment associated with textured finishing, and application of Shake to the concrete surface in accordance with these specifications, as detailed on the plans or as directed by the Engineer. This item includes the additional cost of concrete finishing only, and does not include the cost of placing the concrete itself.

Pay Item: Measurement and payment shall be on a textured or colored concrete surface square yard basis as measured in the field by the owner's representative, with payment being in addition to payment under item 501 for regular concrete thickness.

506 Stamped Concrete (Top Treatment)

Specifications: See Mulberry Grove Supplemental Specifications Section 5C.

Description: This item shall include all additional labor, materials, submittals, tools, and equipment associated with furnishing and installing concrete stamped surfaces in accordance with these specifications, as detailed on the plans or as directed by the Engineer. With the prior approval of the Owner, Contractor may utilize a stamp he already possesses. This item includes the additional cost of concrete finishing only, and does not include the cost of placing the concrete itself.

Pay Item: Measurement and payment shall be on a stamped concrete surface square yard basis as measured in the field by the owner's representative, with payment being in addition to payment under item 501 for regular concrete thickness.

507 Carport Concrete Foundation

Specifications: See the Moab City Design Standards and Public Improvement Specifications Section 5 and Drawing A1.0.

Description: Includes additional labor, materials, submittals, tools, and equipment costs associated with placing concrete for piers and footers for future carports. Three (3) piers and footers shall be constructed for each of the four (4) future carports as shown on the drawings. Rebar and collar ties are incidental to this item. Compressive strength for footings, walls, and piers shall be 3000 psi.

Pay Item: Measurement and payment shall be on a lump sum basis for each carport based on the design drawings.

600 Asphalt Paving

Specifications: See the Moab City Design Standards and Public Improvement Specifications Section 6 with following revision to Section 6.1 as follows:

- A. Six (6) inch minimum or more aggregate base course (3" minus) over prepared subgrade.
- B. Six (6) inch minimum or more aggregate base course (3/4" minus) over prepared subbase.
- C. Three (3) inch minimum or more compacted thickness plant mix asphalt surfacing.

Road Subgrade Preparation per Item 403 Subgrade Preparation. Base Course per Item 407 Aggregate Base Course (3/4" Minus) and Item 408 Aggregate Subbase Course (3" Minus).

Description: Includes all labor, materials, submittals, tools, and equipment costs associated with placing, consolidation and normal finishing of a 3 inch thick section of asphalt as shown in the drawings. Road Subgrade Preparation shall be paid separately per Item 403 Subgrade

Preparation. Base Courses shall be paid separately per Item 407 Aggregate Base Course (3/4" Minus) and Item 408 Aggregate Subbase Course (3" Minus).

Pay Item: Measurement and payment shall be in cubic yards as measured on the drawings.

601 Swale Grading

Specifications: See UDOT 2008 Standard Specifications for Road and Bridge Construction.

Description: Includes all labor, materials, and equipment costs associated with constructing and grading swales as shown on the drawings.

Pay Item: Measurement and payment shall be on a linear foot of swale basis per the drawings.

602 Fence

Description: Includes all labor, materials, and equipment costs associated with removal and disposal of existing fencing. Actual length of fence to be removed shall be determined in the field by the Owner's representative.

Pay Item: Measurement and payment shall be on a linear foot of fence removed basis as measured in the field by the owner's representative.

800a-d Schedule 40 PVC

Specifications: See the Moab City Design Standards, Public Improvement Specifications and Mulberry Grove Supplemental Conditions Section 8A and the Drawing LA.1.

Description: Includes all labor, materials, and equipment associated in the installation of schedule 40 PVC pipe including excavation, the legal disposal of the excavated material, dewatering, placement of bedding material, placement of the pipeline to grade, backfilling and compacting embankment to top of subgrade. Materials, installation, compaction and testing shall comply with Mulberry Grove Supplemental Conditions Section 8A.

Pay Item: Measurement and payment shall be on lineal foot basis as measured in the field by the owner's representative.

801a-d Sleeve for Schedule 40 PVC (Does not include PVC)

Specifications: See the Moab City Design Standards, Public Improvement Specifications and Mulberry Grove Supplemental Conditions Section 8A and the Drawing LA.1.

Description: Includes all labor, materials, and equipment associated in the installation of sleeving for schedule 40 PVC pipe under paved areas which will have vehicle use including excavation, the legal disposal of the excavated material, dewatering, placement of bedding material, placement of the pipeline to grade, backfilling and compacting embankment to top of subgrade. Materials, installation, compaction and testing shall comply with Mulberry Grove Supplemental Conditions Section 8A. Sleeving material shall be schedule 40 or schedule 80 PVC

two sizes larger than the PVC to be sleeved. For ½ inch schedule 40 PVC, sleeve to be 1-1/4-inch.

Pay Item: Measurement and payment shall be on lineal foot basis as measured in the field by the owner's representative.

802a-b Irrigation Control Wire

Specifications: See Mulberry Grove Supplemental Conditions Section 8A and the Contract Drawing LA.1.

Description: Includes all labor, materials, and equipment associated in the installation of irrigation control wiring. Materials, installation, and testing shall comply with Mulberry Grove Supplemental Conditions Section 8A.

Pay Item: Measurement and payment shall be on an each basis as measured in the field by the owner' representative.

803 Hunter PGV-101G Series Valve

Specifications: See Mulberry Grove Supplemental Conditions Section 8A and the Contract Drawing LA.1.

Description: Includes all labor, materials, and equipment associated in the installation of Hunter PGV-Series Flow Control Valves. Valve box, connectors, 120 mesh disc filter, 40 psi pressure regulator, and associated fittings are inclusive to this item. Materials, installation, and testing shall comply with Mulberry Grove Supplemental Conditions Section 8A.

Pay Item: Measurement and payment shall be on an each basis as measured in the field by the owner' representative.

804 Drip Risers

Specifications: See Mulberry Grove Supplemental Conditions Section 8A and the Contract Drawing LA.1.

Description: Includes all labor, materials, and equipment associated in the installation of Drip Risers. Materials, installation, and testing shall comply with Mulberry Grove Supplemental Conditions Section 8A.

Pay Item: Measurement and payment shall be on an each basis as measured in the field by the owner' representative.

805 Quick Coupler Valve

Specifications: See Mulberry Grove Supplemental Conditions Section 8A and the Contract Drawing LA.1.

Description: Includes all labor, materials, and equipment associated in the installation of Quick Coupler Valves. Materials, installation, and testing shall comply with Mulberry Grove Supplemental Conditions Section 8A.

Pay Item: Measurement and payment shall be on an each basis as measured in the field by the owner' representative.

806a-b Irrigation Wire Conduit

Specifications: See Mulberry Grove Supplemental Conditions Section 8A and the Contract Drawing LA.1.

Description: Includes all labor, materials, and equipment associated in the installation of irrigation wire conduit. Materials, installation, and testing shall comply with Mulberry Grove Supplemental Conditions Section 8A.

Pay Item: Measurement and payment shall be on a linear foot basis as measured in the field by the owner' representative.

900 12 Inch Reinforced Concrete Pipe

Specifications: See the Moab City Design Standards and Public Improvement Specifications Section 9.

Description: Includes all labor, materials, and equipment associated in the installation of reinforced concrete pipe (RCP) including excavation, the legal disposal of the excavated material, dewatering, placement of bedding material, placement of the pipeline to grade, backfilling and compacting embankment to top of subgrade. Materials, installation, compaction and testing shall comply with Moab City Design Standards and Public Improvement Specifications.

Pay Item: Measurement and payment shall be on lineal foot basis as measured in the field by the owner's representative.

902 Storm Drain Inlets (A, B-1, B-2, E-1)

Specifications: See Drawing details.

Description: Includes all labor, materials, and equipment costs associated in the installation of drop inlet structures per the drawings. Work shall include excavation, the legal disposal of the excavated material, dewatering, placement of the inlet structure to grade, and backfilling and compacting embankment to top of subgrade. Materials, installation, compaction and testing shall comply with the Moab City Design Standards and Public Improvement Specifications.

Pay Item: Measurement and payment shall be on an each basis

903 Storm Drain Inlet (E-2)

Specifications: See Drawing details.

Description: Includes all labor, materials, and equipment costs associated in the installation of a drop inlet structure per the drawings. Work shall include excavation, the legal disposal of the excavated material, dewatering, placement of the inlet structure to grade, and backfilling and compacting embankment to top of subgrade. Materials, installation, compaction and testing shall comply with the Moab City Design Standards and Public Improvement Specifications.

Pay Item: Measurement and payment shall be on an each basis as measured in the field by the owner's representative.

904 Reset Storm Drain Inlets (C-1 through C-4)

Specifications: See Drawing details.

Description: Includes all labor, materials, and equipment costs associated in the sawcutting existing storm inlets to match proposed grades per the drawings. Work shall include excavation, the legal disposal of the excavated material, dewatering, placement of the inlet structure to grade, and backfilling and compacting embankment to top of subgrade. Materials, installation, compaction and testing shall comply with the Moab City Design Standards and Public Improvement Specifications.

Pay Item: Measurement and payment shall be on an each basis as measured in the field by the owner's representative.

905 Connect to Existing Inlet C-1

Specifications: See Drawing details.

Description: Includes all labor, materials, and equipment costs associated in connecting proposed 12 inch concrete storm sewer line to inlet C-1. Work shall include excavation, the legal disposal of the excavated material, dewatering, cutting a smooth connection, properly grouting the connection, and backfilling and compacting embankment to top of subgrade. Materials,

installation, compaction and testing shall comply with the Moab City Design Standards and Public Improvement Specifications.

Pay Item: Measurement and payment shall be on an each basis as measured in the field by the owner's representative.

MULBERRY GROVE SUPPLEMENTAL SPECIFICATIONS 2011

All items will be constructed as per the latest version of the Moab City Design Standards and Public Improvement Specifications and the Utah Department of Transportation (UDOT) 2008 Standard Specifications for Road and Bridge Construction, unless otherwise specified.

Contained herein are Supplemental Specifications to the Standards and Specifications listed above. Supplemental Specifications are as follows:

Section 5A	Textured or Colored Concrete (Top Treatment)
Section 5C	Stamped Concrete (Top Treatment)
Section 8A	Irrigation System

SECTION 5A Textured, Colored Concrete (Top Treatment)

Prior to construction, discuss desired concrete colors and finish texture with client. Provide client 3 color samples and 3 finish textures for approval. Final product must match sample color and texture.

5A.1 Color

- A. Apply coloring agent on newly finished concrete surface as soon as job conditions permit, but in no event later than 2 hours after concrete is placed, at rate recommended by manufacturer and approved by City Engineer.
- B. Apply color hardener uniformly to surface by dry-shake method when no excess moisture shows at surface of concrete substrate, but while concrete is still plastic throughout. Do not sprinkle or otherwise add water to surface during application or finishing. Necessary moisture for color hardener shall come from concrete substrate in order to develop proper bond and assure adequate density for color-hardened surface.
- C. First shake shall consume two-thirds of material. Withhold one-third for second shake and final touch-up. After first shake, float surface thoroughly by mechanical or hand methods. Do not trowel surface between first and second shakes.
- D. Apply second shake evenly, then float and trowel surface. Retain small quantity of material from second shake for touching up nonuniform or weak-toned areas. Minimize hard troweling and use consistent finishing practices to ensure uniformity of color.

5A.2 Texture

Surfaces shall be finished uniformly with the following texture finish options:

- A. Broomed: Pull broom across freshly, floated, troweled, concrete to produce fine, medium, coarse texture in straight, wavy lines perpendicular to main line of traffic. Do not dampen brooms.
- B. Swirl: Float concrete. Work float flat on surface using pressure in swirling manner to produce series of uniform arcs and twists. Use aluminum or magnesium float to produce medium texture. Use wood float to provide coarse texture.
- C. Trowel: Precautions should be taken to ensure that surface is uniformly troweled so that it will not be slippery. Do not over-trowel or burnish surface.
- D. Rock Salt: Float, trowel, and broom concrete. Then sprinkle salt on concrete and press into surface leaving only tops of salt grains exposed. After 24 hours, wash salt away with water and brush. Allow surface and impressions to dry before applying curing compound.
- E. Sandblast: Allow concrete to cure to sufficient strength so that it will not be damaged by blasting but not less than seven days. Use light, medium, heavy sandblasting to remove cement mortar from surface and expose aggregate to match originally approved mockup, field sample.

SECTION 5B Pressure Washed Exposed Aggregate (Top Treatment)

Contractor shall notify owner if specified treatments, admixtures, or procedures conflict with proper concrete construction. Submit for approval from owner, alternate conditions to remedy conflicts prior to commencement of construction. Do not proceed until all conflicts have been approved and corrected.

5B.1 SUBMITTALS

- A. Submit product data as required by the Contract Documents.
- B. Contractor shall supply and prepare and maintain on site a 4' wide x 4' long x 4" thick square completed test section of each finish application. Each test application shall be sufficiently complete for inspection by owner for approval prior to commencement of construction. Approved test samples shall be retained on site and protected from damage for duration of project.
- C. Contractor shall submit samples of the following aggregates to owner for approval prior to start of work: Fine Seeded Exposed Aggregate, Medium Seeded Exposed Aggregate, and Coarse Seeded Exposed Aggregate. Minimum sample size one cubic foot.

5B.2 PRODUCTS

5B.2.1 AGGREGATES FOR EXPOSED AGGREGATE FINISHES (General Categories)

- A. Fine Seeded Exposed Aggregate Finish "A": 00 – ¼"
- B. Medium Seeded Exposed Aggregate Finish " B " : ¼"-7/16"
- C. Coarse Seeded Exposed Aggregate Finish "C": ½'- ¾"

5B.2.2 CURING COMPOUND (Omit where retarders are used)

- A. Liquid membrane-forming curing compound shall be suitable for spray application and shall conform to ASTM C309, Type 1, clear.

5B.2.3 Concrete Finish Retarder

- A. Spray applied, film forming, water based top surface retarder, calibrated for specific sized aggregate and finish requirements.
- B. Spray applied film forming protective coating for surfaces adjacent to retarded finish surfaces.

5B.3 EXECUTION

5B.3.1 EXCAVATION AND BACKFILL

- A. Excavation and backfill are included in Earthwork Section.

5B.3.2 EXPOSED AGGREGATE CONCRETE FINISHING

- A. Fine Seeded Exposed Aggregate:
 - 1. Immediately after the surface of the concrete has been screeded and floated to ¼" in 10 (ten) feet of tolerance and surface water has been removed,

hand-spread the aggregate mixture uniformly over the surface to provide uniform maximum coverage.

2. The aggregate mix shall be embedded into the surface by light tamping or rolling. The surface shall then be lightly floated until the embedded mixture is coated lightly with mortar and the overall surface has been brought to a true plane within ¼" in 10 (ten) feet tolerance in any direction. DO NOT OVER TROWEL THE CONCRETE SURFACE PRIOR TO SURFACE RETARDER APPLICATION.
3. Finish shall match approved site sample.

B. Medium Seeded Exposed Aggregate:

1. Immediately after the surface of the concrete has been screeded and floated to ¼" in 10 (ten) feet of tolerance and surface water has been removed, hand-spread the aggregate mixture uniformly over the surface to provide uniform maximum coverage.
2. The spread of aggregate mix shall be embedded into the surface by light tamping or floating until the embedded mixture is coated with mortar and the overall surface has been brought to a true plane within ¼" in 10 (ten) feet tolerance in any direction.
3. Finish shall match approved site sample.

C. Coarse Seeded Exposed Aggregate:

1. Immediately after the surface of the concrete has been screeded and floated to ¼" in 10 (ten) feet of tolerance and surface water has been removed, hand-seed the aggregate mixture uniformly in the concrete surface to provide uniform maximum coverage.
2. The aggregate mix shall be lightly hand-tamped to a point where a minimum of the aggregate is embedded below the concrete surface. The final aggregate surface plane shall be brought to a true plane within ¼" in 10 (ten) feet tolerance in any direction.
3. Finish shall match approved site sample.

5B.3.3 CONCRETE RETARDER APPLICATION

A. Preparation and Application

1. Protect all curbs, borders, adjacent stones, pavers, etc. that are not to receive retarded finish prior to application of retarders.
2. Pour concrete, seed aggregates where called for, float and lightly trowel finish where required.[Do Not Delay The Application of The Surface Retarder

Beyond the Loss of the Initial Bleed Water Especially in Warmer Temperatures for Best Results.]

3. Apply Top Cast Retarders with a low-pressure sprayer at a rate of 250-350 sq.ft./ gal. Per manufacturers' requirements. Material is colored to allow for verification of even and complete coverage.
4. Once dry (1-2 hours), Top Cast provides protection against intermittent rain or hot, windy conditions and requires no additional covering.

B. Retarder Selection Guidelines

Number Code	Etch/Aggregate Size to Expose*	Coverage	Color
3	Acid Etch Finish	250/350 S.F. / Gal.	Lt. Blue Violet
5	Lt. Sandblast Finish	"	Lt. Blue
15	Up to ¼"	"	Yellow
25	1/8" to ¼"	"	Beige
50	1/8" to 3/8"	"	Canary Green
75	1/8" to 3/8"	"	Blue
100	3/8" to ½"	"	Gray
125	3/8" to 5/8"	"	Pink
150	3/8" to 5/8"	"	Green
200	5/8" to 1"	"	Salmon
250	1" to 1-1/2"	"	Orange

Values listed are for standard 6-sack mix. Always test to verify the appropriate grade for specific mix designs

C. Finishing

1. Wash with water rinse/light broom or pressure wash with power equipment within 6 – 24 hours after the retarder is applied. Retarder removal intervals depend on strength of mix, exposed aggregate size and desired washing techniques. Earlier washing for light etch finishes may be necessary. Verify in test panels.
2. Do not over-finish and/or delay application beyond the initial bleeding on the light finishes.

5B.3.4 CONCRETE PLACEMENT

- A. Curing and Protection: Immediately following placement, concrete shall be protected from premature drying, hot and cold temperatures, rain, flowing water and mechanical injury. The owner shall approve materials and methods for curing. Final curing shall continue for not less than seven days. Approved methods include; ponding, continuously wet mats, and liquid membrane curing compounds.
- B. Upon completion of the curing period, but not before 7 days has elapsed since pouring the concrete, remove all concrete spills, overflows, and debris.

SECTION 5C Stamped Concrete (Top Treatment)

This item shall consist of all work associated with furnishing and installing concrete stamped surfaces in accordance with these specifications, as detailed on the plans or as directed by the Owner. This shall include all labor, materials, testing, submittals, tools, and equipment necessary to install the stamped concrete surface to the lines and grades shown on the plans including any incidentals thereto.

5C.1 MATERIALS

Because this item only deals with surface treatment, no materials are defined. Pattern shall be approved by owner prior to order of any stamps.

5C.2 SUBMITTALS

The following submittals shall be submitted to the owner for review and approval prior to installation:

All pertinent manufacturers' information for stamped concrete systems shall be submitted to the Owner for approval. This includes: engineering calculations, colors, patterns and locations of similar installations with names and phone numbers.

5C.3 CONSTRUCTION METHODS

Work associated with the installation of the stamped concrete surfaces shall be performed by a trained and certified contractor for the product used. All work shall meet the manufacturer's specifications and recommendations for an installation of this type.

SECTION 8A Irrigation System

8A.1 GENERAL

8A.1.1 RELATED DOCUMENTS

- A. Drawings and Special Provision Sections of the contract documents, apply to this Section.

8A.1.2 SUMMARY

- A. Section Includes:
 - 1. Sprinklers (rotators, rotors, sprays, nozzles, check valves, bubblers and root zone watering system).
 - 2. Automatic Control Valves
 - 3. Quick Couplers
 - 4. Accessories
 - 5. Pipes, Tubes, and Fittings
 - 6. Pipe Joining Materials
 - 7. Miscellaneous Piping Specialties

8A.1.3 DEFINITIONS

- A. Circuit Piping: Downstream from control valves to sprinklers, specialties, and drain valves. Piping is under pressure during flow.
- B. Drain Piping: Downstream from circuit-piping drain valves. Piping is not under pressure.
- C. Low Voltage: As defined in NFPA 70 for circuits and equipment operating at less than 50 V or for remote-control, signaling power-limited circuits.
- D. Main Piping: Downstream from point of connection to water distribution piping to, and including, control valves. Piping is under water-distribution-system pressure.

8A.1.4 PERFORMANCE REQUIREMENTS

- A. Irrigation zone control shall be automatic operation with controller and automatic control valves.
- B. Location of Sprinklers, Valves, and Specialties: Design location is approximate. Make minor adjustments necessary to avoid plantings and obstructions such as signs and light standards. Maintain 100 percent irrigation coverage of areas indicated.
- C. American Society of Safety Engineers
 - 1. ASSE 1013 – Performance Requirements for Reduced Pressure Principle Backflow Preventers and Reduced Pressure Fire Protection Principle Backflow Preventers.

2. ASSE 1015 – Performance Requirements for Double Check Backflow Prevention Assemblies and Double Check Fire Protection Backflow Prevention Assemblies.

8A.1.5 SUBMITTALS

- A. Product Data: For each type of product indicated. Include rated capacities, operating characteristics and furnished specialties and accessories.
- B. Coordination Drawings: Irrigation systems, drawn to scale, on which components are shown and coordinated with each other, using input from Installers of the items involved. Also include adjustments necessary to avoid plantings and obstructions such as signs and light standards.
- C. Qualification Data: For qualified Installer.
- D. Zoning Chart: Show each irrigation zone and its control valve.
- E. Wiring Diagrams: For power, signal, and control wiring.
- F. Field quality-control reports.
- G. Operation and Maintenance Data: For sprinklers to include in operation and maintenance manuals.
- H. Warranties for each component warranted by manufacturer.

8A.1.6 QUALITY ASSURANCE

- A. Installer Qualifications: The sprinklers, valves, and other components shall be installed in accordance with the manufacturer's published instructions. The sprinklers shall carry a warranty as advertised by Hunter Industries Incorporated for the specific series shown on the drawings. The sprinklers shall be rotator, and bubblers as manufactured by Hunter Industries Incorporated, San Marcos, California. The automatic control valve(s) shall be the PGV, or ICV series as manufactured by Hunter Industries Incorporated See Drawings.

8A.1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver sprinklers and valves with factory-supplied identification. Provide shipping, storage, and handling to prevent damage and to prevent entrance of dirt, debris, and moisture.
- B. Store plastic piping protected from direct sunlight.
- C. Store products as recommended by Hunter Industries Incorporated.

8A.1.8 WARRANTIES

- A. Warranties: Manufacturer's standard form in which manufacturer agrees to repair or replace components that fail in materials or workmanship within manufacturer's specified warranty period for each component.
- B. Guarantee/Warranty of the Irrigation System
 1. The CONTRACTOR shall guarantee the complete irrigation system to be free from leaks or breakage due to defective material or workmanship for a period of one year from the date of acceptance of the complete work by

the OWNER. Damage due to sabotage and/or vandalism are specifically excepted from this guarantee.

2. The CONTRACTOR shall repair any settling of backfilling trenches occurring during a one year period after final acceptance without expense to the OWNER including complete restoration of all damaged planting, paving, or other improvements of any kind.
3. The CONTRACTOR shall provide winterization of the irrigation system during the one year guarantee period.
4. When defective material or workmanship is discovered which will require repair or replacement, all such repair work or replacement work shall be done by the CONTRACTOR at its own expense within 72 hours after written notification is given to the CONTRACTOR by the OWNER of such required repairs. However, if the CONTRACTOR fails to comply with the requirement of the above guarantee within the 96 hours after notification is given, the owner shall proceed to have the repairs make by others at the contractor's expense.
5. Death of plants due to defective workmanship shall be replaced at the contractor's expense.

8A.2 PRODUCTS

8A.2.1 SPRINKLERS

- A. General Requirements: Designed for uniform coverage over entire spray area indicated at available water pressure.
 1. Manufacturer: Subject to compliance with requirements, provide products by the following:
 - a. Hunter Industries Incorporated.
- B. Plastic, Rotator Sprinklers:
 1. MP Rotator
 - a. The sprinkler shall be of the viscous fluid brake rotary type and be a multi-stream, multi-trajectory rotating stream sprinkler.
 - b. In full or part circle mode the sprinkler shall be capable of covering a 10 foot radius at 30 psi pressure with an equivalent full circle discharge rate of 0.65 gpm. Side Strip sprinklers shall be capable of irrigating a rectangular area of 32 feet x 6 feet at 50 psi. Left strip and right strip sprinklers shall be capable of irrigating a rectangular area of 16 feet x 6 feet at 50 psi.
 - c. The sprinkler shall produce and maintain a matched precipitation rate no greater than 0.6" per hour throughout the arc adjustment range and radius adjustment range, (up to 25% of radius reduction), when spaced at 50% of wetted diameter.

- d. The part circle sprinkler shall have an infinitely adjustable arc from 45° to 105°, 90° to 210° or between 210° to 270° depending on the model selected. The full circle sprinkler shall irrigate a full 360°.
 - e. Full or part circle sprinklers shall be capable of up to 25% radius reduction using a stainless steel radius adjustment screw. The radius reduction screw shall have a slip clutch mechanism to prevent internal damage if turned past the minimum or maximum radius settings. The radius reduction screw shall reduce the pressure and flow upstream of the adjustable orifice thereby maintaining stream integrity.
 - f. Part circle sprinklers shall have arc adjustment capabilities using a stainless steel ring. The adjustment ring shall be effective only while the sprinkler is popped up and shall be ineffective while the sprinkler is popped down. When turned past the minimum or maximum arc limits the adjustment mechanism shall have a ratcheting action to prevent internal damage.
- B. Plastic, Spray Sprinklers:
- 1. Pro-Spray:
 - a. The sprinkler shall be available with a 2-, 3-, 4-, 6-, or 12-inch (5-, 7-, 10-, 15-, or 30-cm) pop-up stroke, depending on the body specified, to bring the nozzle into a clean environment.
 - b. The body of the sprinkler shall be constructed of corrosion and UV-resistant, heavy-duty A.B.S. The riser of the sprinkler shall be constructed of abrasion and UV-resistant A.B.S. and shall be adjustable for pattern alignment. The riser shall be compatible with female threaded nozzles and shall have a stainless steel spring for positive retraction when irrigation is complete.
 - c. The sprinkler shall have a pressure-activated, multi-function, UV stable wiper seal that will clean debris from the pop-up stem while it retracts. The seal shall be molded around a rigid plastic ring to prevent seal deformation. This seal shall prevent the sprinkler from sticking in the up position and be capable of sealing the sprinkler riser stem to the sprinkler cap under normal operating pressures. The seal shall be removable from the cap for easy service and shall be replaceable.
 - d. The sprinkler shall have a factory-installed, removable flush cap with a pull-up tab that shall prevent debris from entering the sprinkler during installation and allow the system to be flushed before installing the nozzle. The flush cap shall have a directional flushing action that allows the water to escape only in one direction. The

flush cap shall open as the stem extends and completely close when the stem is in the retracted position.

2. Pro-Spray PRS 30:

- a. The sprinkler shall be available with a 4-, 6-, or 12-inch (10-, 15-, or 30-cm) pop-up stroke, depending on the body specified, to bring the nozzle into a clean environment. The sprinkler shall have a standard pressure-regulating device as an integral part of the pop-up riser. This regulator will prevent fogging or misting of the nozzle spray pattern by maintaining a constant nozzle outlet pressure of 30 PSI with inlet pressures of up to 100 PSI, regardless of the nozzle installed.
- b. The body of the sprinkler shall be constructed of corrosion and UV-resistant, heavy-duty A.B.S. The riser of the sprinkler shall be constructed of abrasion and UV-resistant A.B.S. and shall be adjustable for pattern alignment. The riser shall be compatible with female threaded nozzles and shall have a stainless steel spring for positive retraction when irrigation is complete.
- c. The sprinkler shall have a pressure-activated, multi-function, UV stable wiper seal that will clean debris from the pop-up stem while it retracts. The seal shall be molded around a rigid plastic ring to prevent seal deformation. This seal shall prevent the sprinkler from sticking in the up position and be capable of sealing the sprinkler riser stem to the sprinkler cap under normal operating pressures. The seal shall be removable from the cap for easy service and shall be replaceable.

C. Plastic, Nozzles, Check Valves and Bubblers:

1. Spray and Bubbler Nozzles:

Pressure Compensating Bubblers:

- a. The pressure compensating bubbler shall have a full circle discharge rate of 0.5 GPM (m^3/hr ; l/m) at 40 PSI (bars, kPa). The bubbler shall be constructed of corrosion and UV-resistant plastic, with an integral elastomeric flow bushing for maintaining a constant flow rate over the operating pressure range of 20 to 90 PSI (1.4 to 6.2 bars; 137 to 620 kPa).
- b. The bubbler shall be compatible with a plastic filter screen to protect the nozzle from debris in the water. The PCB version shall have a ½-inch Female National Pipe Thread (FNPT) inlet for connection to a ½-inch male threaded riser. The PCN version shall have standard female threads that are compatible with the threaded riser on Hunter spray heads as well as some other manufacturer's spray heads.

8A.2.2 AUTOMATIC CONTROL VALVES

A. Plastic and brass, Automatic Control Valves:

1. Manufacturer: Subject to compliance with requirements, provide products by the following:
 - 1) Hunter Industries Incorporated.
 - 2) Rain Bird Sprinkler Mfg. Corp
2. Description: Molded-plastic body, normally closed, diaphragm type with manual-flow adjustment, and operated by 24-V ac solenoid for residential and Commercial/institutional applications. The valve shall be available in a globe configuration with 1-,1-1/2- or 2-inch Female National Pipe Thread (FNPT) inlet and outlet. The valve shall be equipped with a flow control mechanism that will regulate flow from full on to completely off.
3. The body and bonnet shall be molded of non-corrodible glass-reinforced nylon or A.B.S., rated to 150 PSI (10.3 bars, 1034 kPa). The bonnet bolts shall be serviceable with a slotted screwdriver, Phillips screwdriver, or a hex wrench, and shall be held captive in the bonnet when the bonnet is removed from the valve body. The valve shall be equipped with an internal filter as well as a self-cleaning metering rod, so only clean water can enter the solenoid chamber.
4. The valve shall be available with an optional adjustable pressure-regulating device with a calibrated dial for setting of the outlet pressure. (The regulator shall be capable of adjusting the outlet pressure from between 20 and 100 PSI (0.1.4 to 7.0bars;138to689 kPa) when inlet pressure is 15 PSI (1.0 bars; 103 kPa) or greater than regulated outlet pressure.) The regulated downstream pressure shall remain constant regardless of variations in upstream pressure. The regulation shall be maintained when valve is manually operated with use of internal bleed valve.
5. The standard solenoid shall be a 24 VAC unit with a 370mA inrush current and 190mA holding current at 60 cycles and a 475 mA inrush current and 230 mA holding current at 50 cycles. When specified, the unit shall be equipped with a DC latching solenoid for use with 12-volt battery-operated controllers. The solenoid shall be an encapsulated, one-piece unit with captive plunger. It shall be equipped with manual internal bleed capability to release the upper chamber water to the downstream piping, allowing the valve to open. The valve shall have a manual bleed screw that provides an additional method for manual operation of the valve.

8A.2.3 QUICK COUPLERS

A. Brass, Quick Couplers:

1. Manufacturers: Subject to compliance with requirements, provide products by the following:
 - a. Hunter Industries Incorporated.

- b. Rain Bird Sprinkler Mfg. Corp
- B. Description: Factory-fabricated, bronze or brass, two-piece assembly. Include coupler water-seal valve; removable upper body with spring-loaded or weighted, rubber-covered cap; hose swivel with ASME B1.20.7, 3/4-11.5NH threads for garden hose on outlet; and operating key. The cover shall be a self-closing, purple locking cover, with reclaimed water identification and markings.

8A.2.4 ACCESSORIES

- A. Swing Joint:
 - 1. The flexible sprinkler connection shall be an articulated swing joint assembly that connects to a lateral pipe and permits accurate positioning of the sprinkler head to variable grade levels.
 - 2. The swing joint shall allow stable positioning of the sprinkler to grade during installation and allow flexibility in three dimensions to reposition the sprinkler head.
 - 3. The swing joint shall be manufactured of durable, UV stable, corrosion resistant materials and be pressure rated to 150 psi.
 - 4. The connections shall be any combination of a tapered 1/2" or 3/4" Male National Pipe Threads, as specified.

8A.2.5 PIPES, TUBES, AND FITTINGS

- A. Comply with requirements in the piping schedule for applications of pipe, tube, and fitting materials, and for joining methods for specific services, service locations, and pipe sizes.
- B. PE Pipe with Controlled ID: ASTM F 771, PE 3408 compound; SIDR 11.5 and SIDR 15.
 - 1. Insert Fittings for PE Pipe: ASTM D 2609, nylon or propylene plastic with barbed ends. Include bands or other fasteners.
- C. PE Pipe with Controlled OD: ASTM F 771, PE 3408 compound, SDR 11.
 - 1. PE Butt, Heat-Fusion Fittings: ASTM D 3261.
 - 2. PE Socket-Type Fittings: ASTM D 2683.
- D. PE Pressure Pipe: AWWA C906, with DR of 7.3, 9, or 9.3 and PE compound number to give pressure rating required.
 - 1. PE Butt, Heat-Fusion Fittings: ASTM D 3261.
 - 2. PE Socket-Type Fittings: ASTM D 2683.
- E. PVC Pipe: ASTM D 1785, PVC 1120 compound, Schedules 40 and 80.
 - 1. PVC Socket Fittings: ASTM D 2466, Schedules 40 and 80.
 - 2. PVC Threaded Fittings: ASTM D 2464, Schedule 80.
 - 3. PVC Socket Unions: Construction similar to MSS SP-107, except both headpiece and tailpiece shall be PVC with socket ends.

8A.2.6 PIPING JOINING MATERIALS

- A. Solvent Cements for Joining PVC Piping: ASTM D 2564. Include primer according to ASTM F 656.
- B. Plastic, Pipe-Flange Gasket, Bolts, and Nuts: Type and material recommended by piping system manufacturer unless otherwise indicated.

8.A.2.7 MISCELLANEOUS PIPING SPECIALTIES

- A. Water Hammer Arresters: ASSE 1010 or PDI WH 201, with bellows or piston-type pressurized cushioning chamber and in sizes complying with PDI WH 201, Sizes A to F.
- B. Pressure Gauges: ASME B40.1. Include 4-1/2-inch- (115-mm-) diameter dial, dial range of two times system operating pressure, and bottom outlet.
- C. Sleeves: Sleeves for pipes passing beneath paving shall conform to ASTM D2241, Schedule 40. Minimum diameter of 1-1/4 inch or 2 sizes larger than pipe scheduled to pass through them.
- D. PVC Solvent Cement: Cement shall conform to ASTM D2564.
- E. Swing Joint Connections: Connections between heads and laterals shall be thick wall, flexible, polyethylene pipe with fittings that have male barbs on one end and either male or female screw ends opposite. Glue fittings and female barb adapters are not allowed.
- F. Provide watertight connectors for valve wiring connections.
- G. Valve boxes shall be provided for each valve installation shown on the plans. No irrigation valve box shall be placed in pavement areas unless otherwise shown on the Drawings.
 - 1. When used with single valve, provide Economy Turf Box with green colored snap fit cover labeled "Valve Box".
 - 2. When used with 2 or more valves, provide Jumbo Box with 20 inch x 14 inch cover opening with cover labeled "Control Valve".
- H. Manual or Automatic drain valves shall be as called out on plan or equal.
- I. Control Wire: Number 18-size minimum copper wire, U. L. approved for underground direct burial.
 - 1. Colored wire shall have same color-coding as shown on controller.
 - 2. Provide single wire from controller to each valve.
 - 3. Provide common neutral from controller to each valve.
 - 4. Provide at least one additional wire to the most distal valve box of each wire run.
- J. Backflow Preventers: Comply with requirements and codes of local governing authority regarding backflow prevention.
 - 1. Provide the necessary materials, insulation/draining capabilities, and insulated fiberglass enclosure, dark green in color.

2. Backflow preventers shall be type suitable for use in high hazard cross connection to potable water system as manufactured by one of the following manufacturer's: Watts Regulator Company, Febco, or Wilkins.
 - a) Reduced pressure backflow preventers shall be ASSE # 1013 and labeled accordingly.
 - b) Double check valve assembly backflow preventers shall be ASSE # 1015 and labeled accordingly.
 - c) In absence of local codes or requirements, provide double check assembly backflow preventer installed in strict accordance with manufacturer's written instructions.
- K. Meter box shall conform to requirements of local utility company.
- L. Irrigation Wire Conduit: Conduits for wires shall conform to ASTM D2241, Schedule 40. All wiring under pavement or asphalt to be in a conduit.

8A.2.8 ENCASUREMENT FOR PIPING

- A. Standard: ASTM A 674 or AWWA C105.
- B. Form: Sheet or tube.
- C. Material: LLDPE film of 0.008-inch (0.20-mm) minimum thickness or high-density, cross-laminated PE film of 0.004-inch (0.10-mm) minimum thickness.
- D. Color: Black or Natural.

8A.3 EXECUTION

8A.3.1 PREPARATION

- A. Pressure/Flow Test: If altering piping and/or sprinkler sizes, models, and/or arrangement provide written calculations to the Owner including the following site information:
 1. Static or residual pressure at the POC.
 2. Calculation of operating pressure for proximal and distal sprinkler head on each zone.
 3. Calculation of GPM per zone.
- B. Prior to installation, receive approval from General Contractor to proceed with construction.
- C. Contractor shall field verify all aboveground and underground utilities prior to start of work.
- D. Set stakes to identify locations of proposed irrigation system. Obtain Architect's approval before excavation.

8A.3.2 EARTHWORK

- A. Install warning tape directly above pressure piping, 12 inches (300 mm) below finished grades, except 6 inches (150 mm) below subgrade under pavement and slabs.

- B. Drain Pockets: Excavate to sizes indicated. Backfill with cleaned gravel or crushed stone, graded from 3/4 to 3 inches (19 to 75 mm), to 12 inches (300 mm) below grade. Cover gravel or crushed stone with sheet of asphalt-saturated felt and backfill remainder with excavated material.
- C. Provide minimum cover over top of underground piping according to the following:
 1. Irrigation Main Piping: Minimum depth of 36 inches (900 mm) below finished grade, or not less than 18 inches (450 mm) below average local frost depth, whichever is deeper.
 2. Circuit Piping: 12 inches (300 mm).
 3. Drain Piping: 12 inches (300 mm).
 4. Sleeves and Wire Conduits: 24 inches (600 mm).

8A.3.4 PIPING INSTALLATION

- A. Location and Arrangement: Drawings indicate location and arrangement of piping systems. Install piping as indicated unless deviations are approved on Coordination Drawings.
- B. Install piping at minimum uniform slope of 0.5 percent down toward drain valves.
- C. Install piping free of sags and bends.
- D. Install groups of pipes parallel to each other, spaced to permit valve servicing.
- E. Install fittings for changes in direction and branch connections.
- F. Install unions adjacent to valves and to final connections to other components with NPS 2 (DN 50) or smaller pipe connection.
- G. Install flanges adjacent to valves and to final connections to other components with NPS 2-1/2 (DN 65) or larger pipe connection.
- H. Install underground thermoplastic piping according to ASTM D 2774 and ASTM F 690.
- I. Install expansion loops in control-valve boxes for plastic piping.
- J. Lay piping on solid subbase, uniformly sloped without humps or depressions.
- K. Install PVC piping in dry weather when temperature is above 40 deg F (5 deg C). Allow joints to cure at least 24 hours at temperatures above 40 deg F (5 deg C) before testing.
- L. All pipeline open ends upon which the WORK has been stopped shall be closed at the end of each day's construction work with a suitable temporary plug to prevent entrance of any foreign materials into the assembled pipeline.
- M. Install water regulators with shutoff valve and strainer on inlet and pressure gage on outlet. Install shutoff valve on outlet. Install aboveground or in control-valve boxes.

- N. Water Hammer Arresters: Install between connection to building main and circuit valves aboveground or in control-valve boxes.
- O. Install piping in sleeves under parking lots, roadways, and sidewalks.
- P. Install sleeves made of Schedule 40 or Schedule 80 PVC pipe and socket fittings, and solvent-cemented joints. See drawings.
- Q. Install transition fittings for plastic-to-metal pipe connections according to the following:
- R. Underground Piping:
 - 1. NPS 1-1/2 (DN 40) and Smaller: Plastic-to-metal transition fittings.
 - 2. NPS 2 (DN 50) and Larger: AWWA transition couplings.
- S. Aboveground Piping:
 - 1. NPS 2 (DN 50) and Smaller: Plastic-to-metal transition fittings or unions.
 - 2. NPS 2 (DN 50) and Larger: Use dielectric flange kits with one plastic flange.
- T. Install dielectric fittings for dissimilar-metal pipe connections according to the following:
 - 1. Underground Piping:
 - 1) NPS 2 (DN 50) and Smaller: Dielectric coupling or dielectric nipple.
 - 2) NPS 2-1/2 (DN 65) and Larger: Prohibited except in control-valve box.
 - 2. Aboveground Piping:
 - 1) NPS 2 (DN 50) and Smaller: Dielectric union.
 - 2) NPS 2-1/2 to NPS 4 (DN 65 to DN 100): Dielectric flange.
 - 3) NPS 5 (DN 125) and Larger: Dielectric flange kit.
 - 3. Piping in Control-Valve Boxes:
 - 1) NPS 2 (DN 50) and Smaller: Dielectric union.
 - 2) NPS 2-1/2 to NPS 4 (DN 65 to DN 100): Dielectric flange.
 - 3) NPS 5 (DN 125) and Larger: Dielectric flange kit.

8A.3.5 JOINT CONSTRUCTION

- A. Ream ends of pipes and tubes and remove burrs.
- B. Remove dirt, and debris from inside and outside of pipe and fittings before assembly.
- C. Threaded Joints: Thread pipe with tapered pipe threads according to ASME B1.20.1. Cut threads full and clean using sharp dies. Ream threaded pipe ends to remove burrs and restore full ID. Join pipe fittings and valves as follows:
 - 1. Apply appropriate tape or thread compound to external pipe threads unless dry seal threading is specified.

2. Damaged Threads: Do not use pipe or pipe fittings with threads that are corroded or damaged. Do not use pipe sections that have cracked or open welds.
- D. Flanged Joints: Select rubber gasket material, size, type, and thickness for service application. Install gasket concentrically positioned. Use suitable lubricants on bolt threads.
 - E. PE Piping Fastener Joints: Join with insert fittings and bands or fasteners according to piping manufacturer's written instructions.
 - F. PE Piping Heat-Fusion Joints: Clean and dry joining surfaces by wiping with clean cloth or paper towels. Join according to ASTM D 2657.
 1. Plain-End PE Pipe and Fittings: Use butt fusion.
 2. Plain-End PE Pipe and Socket Fittings: Use socket fusion.
 - G. PVC Piping Solvent-Cemented Joints: Clean and dry joining surfaces. Join pipe and fittings according to the following:
 1. Comply with ASTM F 402 for safe-handling practice of cleaners, primers, and solvent cements.
 2. PVC Pressure Piping: Join schedule number, ASTM D 1785, PVC pipe and PVC socket fittings according to ASTM D 2672. Join other-than-schedule-number PVC pipe and socket fittings according to ASTM D 2855.
 3. PVC Nonpressure Piping: Join according to ASTM D 2855.

8A.3.6 AUTOMATIC CONTROL VALVE INSTALLATION

- A. Install automatic control valves per Hunter Industries, Incorporated written recommendations.
- B. All underground valves shall be encased in a valve box as shown. Multiple remote control valves may be installed in each box, provided any one can be replaced without removing the others.
- C. Install control cable in same trench as irrigation piping and at least 2 inches (51 mm) below or beside piping. Provide conductors of size not smaller than recommended by controller manufacturer. Install cable in separate sleeve under paved areas.
- D. Wire shall be continuous without splices except at control valve boxes.
- E. An expansion curl should be provided within 3 ft of each wire connection and at least every 100 ft of wire length on runs more than 100 ft. in length.

8A.3.7 VALVE INSTALLATION

- A. Underground Curb Valves: Install in curb-valve casings with tops flush with grade.
- B. Underground Iron Gate Valves, Resilient Seat: Comply with AWWA C600 and AWWA M44. Install in valve casing with top flush with grade.
 1. Install valves and PVC pipe with restrained, gasketed joints.

- C. Aboveground Valves: Install as components of connected piping system.
- D. Pressure-Reducing Valves: Install in boxes for automatic control valves or aboveground between shutoff valves. Install full-size valved bypass.
- E. Throttling Valves: Install in underground piping in boxes for automatic control valves.
- F. Drain Valves: Install in underground piping in boxes for automatic control valves.

8A.3.8 SPRINKLER INSTALLATION

- A. Install sprinklers after hydrostatic test is completed.
- B. Install sprinklers at manufacturer's recommended heights.
- C. Install sprinklers per manufacturer's recommended instructions.
- D. Locate part-circle sprinklers to maintain a minimum distance of 4 inches (100 mm) from walls and 2 inches (50 mm) from other boundaries unless otherwise indicated.

8A.3.9 CONNECTIONS

- A. Comply with requirements for piping specified in Division 22 Section "Facility Water Distribution Piping" for water supply from exterior water service piping, water meters, protective enclosures, and backflow preventers. Drawings indicate general arrangement of piping, fittings, and specialties.
- B. Install piping adjacent to equipment, valves, and devices to allow service and maintenance.
- C. Connect wiring between controllers and automatic control valves.

8A.3.10

IDENTIFICATION

- A. Identify system components. Provide permanent, waterproof identification tags which uniquely identify each valve connecting a lateral , pipe run where exposed but not connected to a valve
- B. Warning Tapes: Arrange for installation of continuous, underground, detectable warning tapes over underground piping during backfilling of trenches. See Division 31 Section "Earth Moving" for warning tapes.

8A.3.11 FIELD QUALITY CONTROL

- A. Tests and Inspections:
 1. Leak Test: After installation, charge system and test for leaks. Repair leaks and retest until no leaks exist.
 - 1) The Contractor shall give at least 72 hour notice to the Landscape Architect (L.A.) for scheduling the following inspections, to be performed in the presence of the L.A.:
 - 2) After assembly and installation, all air shall be removed from the pipes with water, pipe risers shall be capped or plugged, and the pipe lines subjected to full static water pressure of 100 psi for not less than 30 minutes. Water lines and valves which show evidence of

leakage or fail to be watertight shall be repaired or replaced. After all repairs or replacements have been made, the above-required test shall be performed again.

- 3) When the irrigation system is completed, the CONTRACTOR, in the presence of the L.A., shall perform a test coverage of water afforded the planting areas
 2. Operational Test: After electrical circuitry has been energized, operate controllers and automatic control valves to confirm proper system operation.
 3. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
 4. When the irrigation system is completed, the CONTRACTOR, in the presence of the L.A., shall perform a test coverage of water afforded the planting areas
- B. Any irrigation product will be considered defective if it does not pass tests and inspections.
- C. Prepare test and inspection reports.

8A.3.12 STARTUP SERVICE

- A. Engage a service representative to perform startup service.
1. Complete installation and startup checks according to manufacturer's written instructions.
 2. Verify that controllers are installed and connected according to the Contract Documents.
 3. Verify that electrical wiring installation complies with manufacturer's submittal.

8A.3.13 ADJUSTING

- A. Adjust settings of controllers.
- B. Adjust automatic control valves to provide flow rate at rated operating pressure required for each sprinkler circuit.
- C. Adjust sprinklers and devices, except those intended to be mounted aboveground, so they will be flush with, or not more than 1/2 inch (13 mm) above, finish grade.

8A.3.14 CLEANING

- A. Flush dirt and debris from piping before installing sprinklers and other devices.

8A.3.14 DEMONSTRATION

- A. Engage a service representative to train Owner's maintenance personnel to adjust, operate, and maintain sprinklers.