PROJECT MANUAL

for

Gateway for Secondary Entries

Laramie County Community College
Cheyenne, Wyoming

Bid Set
December 16, 2016

LARAMIE COUNTY
COMMUNITY COLLEGE
Cheyenne, Wyoming
Date: December 16, 2016

Project: Laramie County Community College
Gateway for Secondary Entries
Laramie County Community College
Cheyenne, Wyoming

Owner: Laramie County Community College
Tim Macnamara
Director, Physical Plant
Laramie County Community College
1400 E. College Dr.
Cheyenne, WY 82007
PH: (307) 778-1256
F: (307) 778-1358

Architect of Record: By Architectural Means, P.C.
Principal: Sallie Means, AIA
(smeans@byarchmeans.com)
311 West 18th Street, Suite 300
Cheyenne, WY 82001
P.O. Box 766
Cheyenne, WY 82003
PH: (307) 637-7300
F: (307) 637-7302

Civil Engineer
Benchmark Engineers
1920 Thomes Ave, Ste 200
Cheyenne, WY 82001
PH: (307) 634-9064
F: (307) 778-8010
Contact: Kelly Hafner, P.E.

Landscape Architect
Lime Green Design
900 Louisiana Ave, Ste 209
Denver, CO 80210
PH: (303) 733-7558
F: (303) 733-0959
Contact: Anne Desjardins

Bid Date: October 13, 2016
Bid Time: 3:00 pm
Bid Location: LCCC Business Office
# Laramie County Community College

**Gateway for Secondary Entries**

**Bid Set**

## TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Title Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stamp Page</td>
</tr>
</tbody>
</table>

### BIDDING AND CONTRACT REQUIREMENTS

**INVITATION FOR BID**

<table>
<thead>
<tr>
<th>Section</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>SECTION ONE: DEFINITIONS AND TERMINOLOGY</td>
<td>28</td>
</tr>
<tr>
<td>SECTION TWO: INSTRUCTIONS TO BIDDERS AND BID REQUIREMENTS</td>
<td></td>
</tr>
<tr>
<td>SECTION THREE: BID SUBMITTAL AND PRICING DOCUMENT</td>
<td></td>
</tr>
</tbody>
</table>

### TECHNICAL SPECIFICATIONS

**DIVISION 01 -- GENERAL REQUIREMENTS**

<table>
<thead>
<tr>
<th>Division</th>
<th>Section</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>01 10 00</td>
<td>SUMMARY</td>
<td>2</td>
</tr>
<tr>
<td>01 22 00</td>
<td>UNIT PRICES</td>
<td>2</td>
</tr>
<tr>
<td>01 23 00</td>
<td>ALTERNATIVES</td>
<td>1</td>
</tr>
<tr>
<td>01 30 00</td>
<td>ADMINISTRATIVE REQUIREMENTS</td>
<td>4</td>
</tr>
<tr>
<td>01 40 00</td>
<td>QUALITY REQUIREMENTS</td>
<td>4</td>
</tr>
<tr>
<td>01 50 00</td>
<td>TEMPORARY FACILITIES AND CONTROLS</td>
<td>2</td>
</tr>
<tr>
<td>01 60 00</td>
<td>PRODUCT REQUIREMENTS</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>SUBSTITUTION REQUEST FORM</td>
<td></td>
</tr>
<tr>
<td>01 70 00</td>
<td>EXECUTION AND CLOSEOUT REQUIREMENTS</td>
<td>5</td>
</tr>
</tbody>
</table>

**DIVISION 03 -- CONCRETE**

<table>
<thead>
<tr>
<th>Division</th>
<th>Section</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>03 30 00</td>
<td>CAST-IN-PLACE CONCRETE</td>
<td>4</td>
</tr>
<tr>
<td>03 45 00</td>
<td>PRECAST ARCHITECTURAL CONCRETE</td>
<td>4</td>
</tr>
</tbody>
</table>

**DIVISION 04 -- MASONRY**

<table>
<thead>
<tr>
<th>Division</th>
<th>Section</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>04 43 01</td>
<td>STONE MASONRY VENEER</td>
<td>3</td>
</tr>
</tbody>
</table>

**DIVISION 10 -- SPECIALTIES**

<table>
<thead>
<tr>
<th>Division</th>
<th>Section</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 14 00</td>
<td>SIGNAGE</td>
<td>2</td>
</tr>
<tr>
<td>DIVISION 32 -- LANDSCAPE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------------------------------------------------------</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>32 01 90 - TREE AND SHRUB PRESERVATION</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>32 84 00 - IRRIGATION SYSTEM</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>32 91 00 - FINE GRADING AND SOIL PREPARATION</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>32 92 00 - TURF AND GRASSES</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>32 93 00 - PLANTING</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>32 93 50 - LANDSCAPE MAINTENANCE</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>32 94 00 - PLANTING ACCESSORIES</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>
INVITATION FOR BID – CONSTRUCTION SERVICES

PROJECT: Gateways for Secondary Entries

BID No.: IFB-17111

DUE DATE & TIME: January 26, 2017 @ 3:00 p.m. (prevailing local time)

BID: Sealed Bids, subject to the terms, conditions and specifications herein stipulated and/or attached hereto, will be received at the Laramie County Community College Administration & Finance building Room AM-104 located in the Administration Building on 1400 East College Drive, Cheyenne, WY 82007 until January 26, 2017 at 3:00 p.m. (prevailing local time), and then publicly opened, read aloud and duly recorded.

PRE-BID MEETING: A MANDATORY Pre-Bid meeting and job walk will be held on January 10, 2017 @ 9:30 a.m. (prevailing local time) in the Physical Plant conference room. Attendance at the Mandatory Pre-Bid meeting is required to bid on this project.

Jamie Spezzano
Director, Contracting & Procurement
Laramie County Community College
1400 East College Drive
Cheyenne, WY 82007
Phone: (307) 778-1280
Fax: (307) 778-4300
E-mail: jspezzano@lccc.wy.edu

Document Issue Date: December 19, 2016
# TABLE OF CONTENT

## SECTION ONE:
DEFINITIONS AND TERMINOLOGY

## SECTION TWO:
INSTRUCTIONS TO BIDDERS AND BID REQUIREMENTS

1. General Conditions
2. Preparation of Bid
3. Pre-Bid Meeting, Site Inspection and Bid Documents
4. Submission / Withdrawals / Late Bids / Modifications
5. Certificate of Non-Discrimination
6. Questions Concerning Bid
7. Contract Conditions
8. Insurance Requirements
9. Applicable Wyoming State Statutes
10. Laws and Regulations
11. Licenses, Permits and Taxes
12. Qualifications of Contractor
13. Safety and Health
15. Responsibilities of Bidder
16. Trade Name and Substitution Provisions
17. Bid Evaluation Criteria / Award of Bid
18. Ownership of Documents / College Property
19. Material Availability
20. Public Information
21. Protests
22. Responsibilities of LCCC
23. Payment Schedule
24. Tax Exemption

## SECTION THREE:
BID SUBMITTAL & PRICING DOCUMENT

1. Bid requirements and format
2. Project scope and details
3. Bid Price Schedule
4. State Statutes and Regulations
5. Required Submittals (Submit with Bid)
6. Bid Document Checklist
7. Appendix – Bid Attachments
8. Post-Bid Submittals
9. Addenda Acknowledgement Document
10. Signature Page
SECTION ONE

DEFINITIONS AND TERMINOLOGY

Wherever used in this bid these or other related procurement documents, the following terms have meanings indicated which are applicable to both the singular and plural thereof.

Architect: Owner’s contract consultant and contracted project representative.

Addenda: Written or graphic instruments issued prior to the opening of bids which clarify, correct, or change the bid documents or the related procurement documents.

Bid and/or Bid Documents: Bid Document, applicable addenda, other affiliated or referenced data specific to said bid.

Bid Process or Period: Begins with issue/publication of bid document to public sector, and concludes at the award of the bid.

Bidder: Vendor, firm, or contractor submitting a Bid

Contractor: Vendor, firm, or company awarded a contract or PO for this Bid

Contract Document: A legally enforceable (binding) agreement between two competent parties; evidenced by an offer and acceptance of offer. Document shall include by reference, all Bid Documents, contractor’s bid, negotiated documents, issued addendums, special or supplemental conditions, specifications, and any mutually agreed upon modifications, and/or additions.

Firm: Same as vendor or contractor.

Issuing Office: The issuing office for this IFB is By Architectural Means, PC, PO Box 766, Cheyenne, WY 82003.

LCCC: Laramie County Community College (College) or Owner, one in the same.

Purchase Order: A contractual agreement with a vendor for goods or services that specifies payment terms, delivery dates, item identification, quantities, freight terms, and other obligations and conditions.

Specifications: Those portions of this proposal consisting of written or graphic technical descriptions of materials, equipment, construction systems, standards, workmanship, goods, services, and administrative details applicable thereto.

Vendor: Same as company/contractor/firm.

END OF SECTION ONE
SECTION TWO

INSTRUCTIONS TO BIDDERS AND BID REQUIREMENTS

1. GENERAL CONDITIONS

1.1 Notice is hereby given that LCCC will receive sealed bids up to 3:00 p.m. (prevailing local time), January 26, 2017, at that time to be publicly opened and recorded in the Administration Building, Administration & Finance (AM-104) conference table, for the Gateways for Secondary Entries in accordance with the requirements, terms, specifications, conditions, and provisions hereinafter contained.

1.2 Successful firm shall provide LCCC with the services and/or materials as defined by LCCC Policies and this certain Bid Package.

1.3 Bids must be received by the time and date specified. Bids received after the specified time and date will not be accepted and will be returned unopened to the respective firm.

1.4 Bids shall be sent to the LCCC Purchasing Office or hand-delivered prior to the Bid Opening in a sealed envelope (or package) marked “Sealed Bid”, and referencing the Bid #.

1.5 All bids shall be submitted on the LCCC “BID SUBMITTAL & PRICING DOCUMENT” and must be signed by an authorized official of the firm submitting the Bid.

1.6 Telephone, telegraph, email, or fax bids will not be accepted.

1.7 Any bid which modifies, deletes, or changes any of the conditions or provisions, specifications, or bid requirements will be rejected. Do not deface or alter any portion of the original Bid package.

1.8 By submitting this bid, each firm certifies under penalty of perjury that they have not acted in collusion with any other firm or potential firms. Neither the said bidder nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived or agreed, directly or indirectly with any other bidder, firm or person to submit a collusive or sham bid in connection with the contract of which the attached bid has been submitted or to refrain from bidding in connection with such contract, or has in any manner, directly or indirectly, sought by agreement, collusion, communication or conference with any other bidder, firm or person to fix the price or prices in the attach bid or of any other bidder; to fix any overhead, profit, or cost element of the bid price or the bid price of any other bidder; or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage against the owner or any person interested in the proposed contract.
2. **PREPARATION OF BID**

2.1 Firms are expected to examine all Drawings, Specifications, instructions and/or requirements of this Bid package. Failure to do so will be at the bidder’s risk. The Bid and all referenced documents must be used in preparation of each bid. LCCC assumes no responsibility for errors, misinterpretations and/or verbal communication resulting from the use of incomplete Bid Documents.

2.2 Each firm shall furnish the information required by the Bid. The BID SUBMITTAL & PRICING DOCUMENT (see SECTION THREE) shall be completed, signed, and returned by the respective firm’s authorized agent. All required bid documents must be returned with the bidder’s sealed bid.

2.3 Time, if stated as a number of days, will be in calendar days.

2.4 Any clarification of instructions, terms and conditions, IFB document, or proposal preparation shall be made **only** by the Director of Contracting & Procurement. Verbal clarifications will not be binding upon LCCC or their Architect. Written clarifications will be by addenda and forwarded to all interested parties.

2.5 Written addenda will be issued by LCCC for any matters regarding submittal of Bid, or issues, questions, comments, and/or clarifications that will affect, alter, modify, or change the original Bid intent or language.

2.6 To ensure uniformity and consistency, strict rules will apply to the communication process and methods during the bid process, all inquiries shall be via written instrument, mailed, faxed or hand-delivered to the Director of Contracting & Procurement. All matters, issues, questions, answers, comments and/or clarifications which meet the criteria identified above in Paragraph 2.5 will be distributed in written format to all potential bidders.

2.7 Each erasure, marking, or other changes that appear on your Bid must be initialed individually by the person signing the Bid.

2.8 Any violation of Bid requirements shall be just cause for rejection of that particular bid without further consideration.

2.9 In the case of error in the extension of prices in the Bid, the unit price will govern. In case of discrepancy in the price between the written and numerical amounts, the written amount will govern.

2.10 All Bid prices shall be quoted F.O.B Destination (Cheyenne WY) with transportation payment terms prepaid and allowed.
3. **PRE-BID MEETING, SITE INSPECTION AND BID DOCUMENTS**

3.1 Prior to submitting bids, vendors are welcome to visit the campus to inform themselves thoroughly as to the conditions involved in providing the materials required by this Bid. Arrangements for such tours should be coordinated thru the Contracts Office.

3.2 A **MANDATORY** pre-bid meeting and job-walk will commence on **January 10, 2017 at 9:30 a.m. (prevailing local time)**. The meeting will be held in the Physical Plant conference room on the Cheyenne WY campus. All potential bidders shall be present and signed in prior to the start of the mandatory Pre-Bid meeting. Once everyone has signed, the sign-in sheet will be taken and the meeting will “officially” start. Anyone not signed in at the “official” start of the meeting will be considered late and will not be allowed to bid on the project.

3.3 LCCC and Architect’s personnel will be present at the pre-Bid meeting to receive questions with respect to interpretation or clarification of this Bid. Any other request(s) by vendors for interpretation or clarification shall be in writing and shall be addressed to the office of the Director of Contracting and Procurement. The receipt of any request and/or corresponding reply will not alter the bid and bid due date. All requests for interpretations of Bid Documents and other questions received at the pre-Bid will be taken with the formal response through an Addendum and be issued to all plan holders.

3.4 Complete sets of the Bid Documents, plans and specs will be available at no charge via pdf format and may be obtained at [www.publicpurchase.com](http://www.publicpurchase.com) referring to IFB-17111.

3.5 Complete sets of the Bid Documents must be used in preparing bids, neither LCCC nor Architect assumes any responsibility for errors or misinterpretations from the use of incomplete sets of Bid Documents.

3.6 LCCC and Architect in making copies of Bid Documents available on the above terms do so only for the purpose of obtaining bids for the work and/or services specified herein, and do not confer a license or grant for any other use.

4. **SUBMISSION / WITHDRAWALS / LATE BIDS / MODIFICATIONS**

4.1 Prospective vendors are instructed to send or deliver their sealed Bids complete with required “**BID SUBMITTAL & PRICING DOCUMENT**”, attachments, and addenda, enclosed in one sealed and secure box, envelope, or other package, in a manner that assures receipt by **January 26, 2017 at 3:00 p.m. (prevailing local time)**. Package must be sealed, secured and marked in a prominent manner. A public opening and recording of each received bid will be conducted at this date and time. The Bid opening is a public meeting, open to anyone interested in attending.

4.2 Bids may be withdrawn or amended at any time prior to Bid due date. All such requests must be done via written instrument.
4.3 A Bid that is in the possession of the LCCC Contracts Office may be altered by a telegram, fax, or letter bearing the signature of the official authorizing the Bid, provided that it is received prior to the bid due date and time. Telephone or verbal alterations of a Bid will not be accepted.

4.4 Formal, advertised Bids indicate a date and time by which Bids must be received, Bids received after that time will be returned, unopened to the vendor.

4.5 Each firm submitting a bid agrees that their Bid shall remain valid for a minimum of thirty (45) calendar days from the date of closing of this Bid.

5. CERTIFICATE OF NON-DISCRIMINATION

5.1 The bidder hereby certifies that all persons employed by their firm, their affiliates, subsidiaries, or holding companies are treated equally by their firm without regard to or because of race, religion, ancestry, national origin or sex as required by federal and state anti-discrimination laws. The bidder further certifies and agrees that it will deal with subcontractors, bidders or vendors without regard to or because of race, religion, ancestry, national origin or sex. Violation of this certification may constitute a material breach of contract upon which the owner may determine to cancel, terminate, or suspend the contract.

5.2 Laramie County Community College is committed to providing a safe and nondiscriminatory educational and employment environment. The college does not discriminate on the basis of race, color, national origin, sex, disability, religion, age, veteran status, political affiliation, sexual orientation or other status protected by law. Sexual harassment, including sexual violence, is a form of sex discrimination prohibited by Title IX of the Education Amendments of 1972. The college does not discriminate on the basis of sex in its educational, extracurricular, athletic or other programs or in the context of employment.

The College has a designated person to monitor compliance and to answer any questions regarding the college’s non-discrimination policies: Please contact: Title IX and ADA Coordinator, Room 117, Student Services Building, 1400 E College Drive, Cheyenne, WY 82007, 307-778-1217, TitleIX_ADA.Coordinator@lccc.wy.edu

6. QUESTIONS CONCERNING BID

6.1 All inquiries, matters, issues, questions, answers, comments, and/or clarifications concerning this Bid shall be directed to the following individual, and shall be done so via written instrument, e-mail (preferred), mailed, faxed or hand-delivered to:
6.1.1 For matters pertaining to this Bid Document, contact;
   ▶ Director, Contracting & Procurement
   ▶ 1400 East College Drive
   ▶ Cheyenne, WY 82007
   ▶ Phone: (307) 778-1280
   ▶ Fax: (307) 778-4300
   ▶ E-mail: jspezzano@lccc.wy.edu

6.1.2 All matters, issues, questions, answers, comments, and/or clarifications concerning this Bid shall be submitted no later than January 17, 2017 at 5:00 p.m. MST and may be emailed (preferred), mailed, faxed, or hand-delivered.

6.2 All matters, issues, questions, answers, comments, and/or clarifications that alter, modify, or change the original Bid intent or language will be addressed formally via a written Bid Addenda. Information gathered by bidders through verbal conversations, phone conversations and fax transmittals will NOT be considered formal information and should NOT be used for Bid preparation.

6.3 All issued Addenda must be acknowledged by each respective firm submitting a Bid on the document located in IFB SECTION THREE, titled Addenda Acknowledgement Document.

7. **CONTRACT CONDITIONS**

7.1 The scope of work and/or services shall commence upon signing of a Contract.

7.2 The vendor who is awarded a Contract is prohibited from subcontracting, assigning, transferring, or otherwise disposing of the agreement or its’ rights, title or interest therein to any other party without the prior written consent of the Vice President of Administration and Finance Services or the Director of Contracting and Procurement, or their designated representative. All approved assignments or other transfers referred to herein must abide by the provisions of the Contract.

7.3 LCCC will execute the contract incorporating all of the specifications, requirements, terms, conditions, and provisions included in the Bid and any additional documents or data provided by LCCC or the successful firm and are deemed relevant for inclusion by LCCC.

7.4 The successful firm will be expected to properly and promptly execute this Contract. Failure to do so could result in cancellation of this Bid award to the recommended vendor. Should this happen, the Bid process may be started anew, if deemed necessary by LCCC.
8. INSURANCE REQUIREMENTS

8.1 Throughout the term of the Contract, the successful firm shall carry and pay the premium for Certificate of Liability Insurance per Exhibit “B”, with such policies of insurance limits satisfactory to LCCC as will protect LCCC; its Board of Trustees, officers, employees, Architect’s, and agents; individually and collectively from Worker’s Compensation claims and from any other claims for damages to property or for bodily injury, including death, which may arise from or in connection with the operations under this Contract, whether such operations be by the successful firm or by any subcontractor firm or anyone directly or indirectly employed by either of them. Such insurance shall cover all contractual obligations which the successful firm has assumed.

8.2 The limits of the insurance coverage(s) listed above shall be in compliance with IFB Document Exhibit “B”

8.3 Prior to the commencement of the Contract, the successful firm shall deliver certificates of insurance evidencing such policy or policies to the LCCC Director of Contracting & Procurement. These certificates of insurance are to contain the endorsements set forth below.

8.4 “Hold Harmless” Clause: [with statement on certificate that these endorsements are included in the policy(ies)]. The successful firm assumes the liability for all losses, damages (including loss of use), expenses, demands and claims in connection with or arising out of any injury or alleged injury to persons (including death) or damages or alleged damage to property, sustained or alleged to have been sustained in connection with or to have arisen out of the performance of the work by the successful firm, the subcontractor firms, and their agents, servants and employees, including losses, expenses, or damages sustained by LCCC. The successful firm hereby undertakes and agrees to indemnify and hold harmless LCCC; its Board of Trustees, officers, employees, Architect’s and agents; individually and collectively, from any and all such losses, expenses, damages (including loss of use), demands and claims, and shall defend any suit or action brought against them, or any of them, based on any such alleged injury (including death) or damage (including loss of use), shall pay all damages, judgments, costs, and expenses, including attorney’s fees in connection with said demands and claims resulting therefrom. However, successful firm does not assume liability for nor indemnify LCCC against any such losses resulting from the sole negligence of LCCC or its employees or agents.

8.5 “Cancellation” Clause: The policies of insurance covered by this certificate will not be allowed to expire, be canceled, terminated or materially altered prior to their maturity date unless there shall be given no less than forty-five (45) days prior written notice by certified or registered mail to LCCC’s Director of Contracting & Procurement.
8.6 “Additional Insured” Clause: LCCC shall be listed as an additional named insured on all policies, but only with respect to operations of successful firm under the Contract.

8.7 The procuring of the insurance required under the Contract shall not relieve the successful firm of any obligation or liability assumed under this Contract, including specifically the Indemnification Agreement that follows below in Paragraph 8.8. The successful firm may carry at own expense such additional insurance as it may deem necessary. The successful firm shall assist and cooperate in every manner possible in connection with the adjustment of all claims arising out of successful firm’s operations within the scope provided for under the Contract, and shall cooperate with the insurance carrier in all litigated claims and demands, arising from said operations, which the insurance carrier or carriers are called upon to adjust or resist.

8.8 Indemnification Agreement: To the extent permitted by law, successful firm shall indemnify and hold harmless LCCC; and its Board of Trustees, officers, employees, Architect’s and agents; individually and collectively, from any and all losses, damages (including loss of use), expenses, demands and claims in connection with or arising out of any injury or alleged injury to persons (including death) or damage or alleged damage to property, sustained or alleged to have been sustained in connection with or to have arisen out of the performance of the work by the successful firm, the subcontractor firms, and their agents, servants, and employees, including losses, expenses, or damages sustained by LCCC. The successful firm shall defend any suit or action brought against them, or any of them, based on any such alleged injury (including death) or damage (including loss of use), and shall pay all damages, judgments, costs, and expenses, including attorneys’ fees in connection with said demands and claims resulting therefrom.

8.9 In the event that the successful firm shall fail to maintain and keep in force Comprehensive General Bodily Injury and Property Damage Liability Insurance, Workers’ Compensation Coverage, and other insurance coverage’s, as hereinabove provided, LCCC shall have the right to cancel and terminate the Contract forthwith and without notice.

9. APPLICABLE WYOMING STATE STATUTES

9.1 LCCC shall apply the following State of Wyoming Statutes to this Bid.

9.1.1 §16-6-101 through 121 titled “Public Property – Public Works and Contracts”.
9.1.2 §16-6-201 through 206 titled “Preference for State Laborers”.
9.1.3 §16-6-701 through 708 titled “Construction Contracts with Public Entities”.
9.1.4 §16-1-1001 titled “Capital Construction Projects Temporary Restrictions”.
9.1.5 §27-4-401 413 titled “Prevailing Wages”.

Invitation to Bid Document
Bid No. IFB-17111
Page 10 of 28
9.2 Expenditures or contracts involving federal funds are subject to federal rules and regulations, therefore under these conditions, State of Wyoming preference laws do not apply.

9.3 Final payment will be made subsequent to a forty-one (41) day advertising period, as required by Wyoming Statute §16-6-117. The final payment is also conditioned upon receipt of a sworn affidavit as required by this Statute. Said affidavit shall be completed by Contractor stating that all claims for materials and labor under the contract have been paid in full. Should there be a disputed claim, the affidavit shall so state the exact amount to be withheld from the final payment.

9.4 Acknowledgement and compliance with applicable State Statutes is the sole responsibility of the “Prime” or “General” Contractor and all subcontractors. LCCC reserves the right to request written verification of same.

10. LAWS AND REGULATIONS

Successful firm shall comply with all laws, ordinances, and regulations of any applicable federal, state, county, or city government applicable to the performance of the services described herein. LCCC agrees to provide all cooperation reasonably necessary for such compliance. In addition, successful firm shall also comply with all LCCC policies and regulations as may currently and/or in the future pertain to service under the subsequent Contract. These laws, ordinances, regulations, and policies shall apply to the Contract throughout, and they will be deemed to be included in the Contract the same as though written out in full.

11. LICENSES, PERMITS AND TAXES

Contractor shall secure and pay for all federal, state, and local licenses and permits required for the performance of the work and/or services provided for herein. LCCC will cooperate with successful firm in obtaining all licenses and permits and will execute such documents as shall be reasonably necessary or appropriate for such purposes. Successful firm shall pay for any and all taxes and assessments attributable to the performance of the contract work and/or services provided herein including but not limited to sales taxes, excise taxes, payroll taxes, and federal, state, and local income taxes.

12. QUALIFICATIONS OF CONTRACTOR

12.1 The contractor quoting on this project may be required submit three (3) letters of reference from persons for whom they have done the type of work described by these specifications within the last three (3) years. In the event that the contractor has performed this type of work for Laramie County Community College within the last three (3) years, no letters of reference are required. In the event that such letters are not available, contractors shall supply the owner’s representative with the names, phone numbers, and addresses of persons or firms for whom they have done this type of work during the last three (3) years.
12.2 Contractor and each of its sub-contractors hereunder, if any, shall at its sole expense, obtain insurance as detailed in Exhibit “B” from reliable insurance companies acceptable to LCCC, with limits specified in U.S. currency or equivalent. Such insurance shall be in force at the time the contract has commenced and shall remain in force for the duration of this contract, unless a later date is specified by LCCC.

12.3 Contractor shall secure and pay for all federal, state or local licenses and/or permits required for this specific scope of work provided for herein.

12.4 The Contractor shall function as an independent contractor for the purposes of this Agreement and shall not be considered an employee of LCCC. It is intended that the fees paid hereunder shall constitute earnings from self-employment income. The Contractor shall assume sole responsibility for and indemnify LCCC against liability for any debts, liabilities, taxes, duties, fees or fiscal charges that may be incurred by the Contractor in fulfilling the terms of this Agreement. LCCC will not withhold any amounts therefrom as U.S. Federal income tax withholdings from wages or as employee contributions under the U.S. Federal Insurance Contributions Act or make employer contributions thereunder with respect thereto. Contractor shall be solely responsible for the reporting, estimation and payment of all income taxes, fees, and other contributions on or attributable to self-employment income attributable to the fees payable hereunder.

13. **SAFETY AND HEALTH**

13.1 The successful firm shall comply with the Occupational Safety and Health Act (OSHA) of 1970 and the American Disability Act (ADA) of 1992 or the applicable standards promulgated under said Acts.

13.2 The successful firm shall take reasonable and proper care and shall use and maintain LCCC property, facilities and equipment under its care, custody, and control in a manner which shall not cause any violations, abuse, or misuse of said property, facilities, and/or equipment.

13.3 The contractor shall be responsible for implementing safety measures for the protection of their employees and members of the public during all phases of the contract work. The contractor shall be responsible for the supply and placement of traffic safety cones, barricades, warning signs, etc. Work shall be performed in compliance with OSHA regulations and other relevant and applicable codes and regulations.

13.4 If successful firm’s bid requires a capital investment for the performance of this Contract, such capital investment program shall be free of conditions which violate OSHA and ADA or other applicable standards. Should repairs, alterations, modifications, or replacements be required to comply with the cited Acts, such action shall be the
responsibility of the successful firm. Should a determination be required as to whether a specific condition violates said Acts, such determination shall be made by a competent safety architect or safety consultant.

13.5 Should successful firm furnish equipment for the performance of this Bid, such equipment shall be free of conditions which violate OSHA and ADA, or their applicable standards. Should repairs, alterations, modifications, or replacements be required to comply with the cited Acts, such action shall be the responsibility of successful firm.

13.6 The successful firm shall comply with and conform to all applicable fire, and public safety, laws, regulations, ordinances, code requirements, as well as LCCC’s safety regulations.

14. **HAZARDOUS MATERIALS**

14.1 The contractor agrees to indemnify and hold Laramie County Community College harmless for any release of any kind of toxic wastes or hazardous material, or any violation of any law or regulation of the EPA or DEQ that is caused by the contractor or any of the contractor’s subcontractors.

14.2 Contractor shall provide LCCC with a current copy of all applicable Material Safety Data Sheets (MSDS) for each chemical, material, or product used during the performance of this scope of work.

14.3 Contractor is responsible for ensuring that all personnel who handle chemicals, materials, or products (*and their respective wastes*) are knowledgeable and properly trained, and that these chemicals, materials, or products are properly used, applied, handled, stored, transported and disposed of in accordance with federal, state, and local rules, regulations, and/or requirements.

14.4 Contractor shall provide knowledge of proper spill prevention and spill response methods for all chemicals or hazardous materials in use.

14.5 Contractor shall NOT dispose of any hazardous waste on campus. Contractor is responsible for off-site hazardous waste disposal, and any associated costs, fees, or permits associated with such disposal.

15. **RESPONSIBILITIES OF BIDDER**

15.1 The firm awarded the Bid shall comply with all applicable City of Cheyenne WY, Laramie County WY, State of Wyoming, and federal laws, regulation, codes, and standards.

15.2 Each bidder is solely responsible for all costs borne and associated with the preparation and delivery of this Bid, and shall not be reimbursed by LCCC. Said costs may include (*but not limited to*) labor, travel, materials, licenses, administrative expenses, and personal charges.
15.3 It is the responsibility of each firm before submitting a Bid to:
   a) Examine, study, and be familiar with complete Bid and referenced documents.
   b) Visit the LCCC site and become familiar with local and site conditions, if necessary.
   c) Promptly give LCCC written notice of all conflicts, errors, ambiguities, or discrepancies that the bidder discovers in the Bid or its’ related documents.

15.4 Each Bid shall be accompanied by a bid bond, certified check, or cashier’s check in an amount of 5% of the Bid. The bid security shall be drawn upon a surety company with a rating of “A” or better according to the Best Publication and licensed in the state of Wyoming. The security shall be made payable without condition to LCCC as a guarantee that if the bid is accepted, the bidder will enter into a contract with LCCC for the work prescribed by said bid. The bid security of all bidders will be retained until the contract is awarded or other disposition has been made. If the successful bidder fails to execute a contract and/or agreement and to furnish performance and payment bonds and other required documentation within ten (10) days of notice of award, LCCC shall be entitled to collect the amount of the bidder’s proposal guarantee and costs of any legal fees incurred for collection of the bid bond or any damages incurred by LCCC as liquidated damages as to award the prescribed bid work by the successful bidder to another bidder or to re-advertise the bid or otherwise dispose of the said bid as LCCC may see fit.

15.5 The successful bidder shall be required as per Wyoming Statute §16-6-112 to provide a contractor’s performance and payment bond or other guarantee in an amount equal to 100% of the contract sum. If the contract sum is one hundred thousand dollars ($100,000.00) or less, other forms of bond or guarantee may be approved by LCCC prior to acceptance of such bond or guarantee. The bonding company must have a rating of “A” or better according to Best Publication.

15.6 Each applicant is solely responsible for any cost incurred prior to issuance of a legally executed contract. No property interest, of any kind or nature, shall accrue until a contract is awarded and signed by all parties.

15.7 The undersigned Bidder proposes and agrees, if this Bid is accepted, to perform all work and/or services as specified or indicated in the Bid Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bid Documents. Bidder acknowledges that they have included the cost of all insurance requirements, permits, bonds and taxes as required, and will execute and return same in the time allotted within the general conditions of the Bid Documents and subsequently issued Contract.
15.8 Bidder has visited the site and become familiar with and is satisfied as to the general, local and site conditions that may affect cost, progress, and performance of the work and/or services. Bidder has correlated the information known to bidder, information and observations from visits to the work site, reports and drawings identified in the Bid Documents.

15.9 Bidder is familiar with and is satisfied as to all federal, state and local laws and regulations that may affect cost, progress and performance of the work and/or services.

15.10 Bidder does not consider that any further examinations, investigations, explorations, tests, studies, specifications, or date are necessary for the determination of this bid for performance of the work and/or services at the price(s) bid and within the times and in accordance with the other items and conditions of the Bid Documents.

15.11 Bidder has given LCCC and Designer written notice of all conflicts, errors, ambiguities or discrepancies that the bidder has discovered in the Bid Documents, and the written resolution thereof by LCCC and Designer is acceptable to bidder. The Bid Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the work and/or services for which this Bid is submitted.

15.12 Any assumption, exception or exclusion related to any part of the Bid Documents must be noted prior to Bid Due/Opening Date, and may result in bidder being disqualified or reduced in standing. Assumptions, exceptions or exclusions taken after issuance of a “Notice of Award” document may also result in disqualification.

15.13 **OSHA Training Certification**: For public construction contracts estimated to cost more than $30,000, contractors must certify in the bid or the contract that all employees to be employed at the worksite will have completed a course in construction safety and health that is at least ten hours (10-hour card) in duration and has been approved by the United States Occupational Safety and Health Administration.

16. **TRADE NAME AND SUBSTITUTION PROVISIONS**

16.1 Trade names designated in the specifications are used as an acceptable standard quality. Products of other manufacturers will not be considered unless specifically stated. Substitutes or equals are not acceptable where non-substitution is specified in the Bid Document.

16.2 It is the intent of the Bid Documents that the work be completed in all respects in accordance with the subsequent Contract Documents. **This work is to be bid exactly as specified.** Where details and/or specifications are incomplete or unclear, the Bidder should request clarification in writing prior to the Bid due date.
17. **BID EVALUATION CRITERIA / AWARD OF BID**

17.1 In evaluating Bids, LCCC personnel will consider whether or not the Bid complies with the prescribed Bid requirements and specifications per the Bid Document.

17.2 Acceptable and responsive Bids will be evaluated per the criteria detailed in the Bid Documents. Any assumptions, exceptions or exclusions related to any part of the Bid Documents may result in a bidder being disqualified or reduced in standing.

17.3 LCCC reserves the right to reject any or all Bids, including without limitation, if they are, in its' sole discretion judged unacceptable, non-responsive, non-conforming, conditional, to waive any technical or formal defect therein, to accept or reject any part of a Bid, to reject or disapprove of any vendor as may be in the best interests of LCCC.

17.4 Cost may not be the sole basis for selection, since it is in LCCC’s best interest to obtain materials and/or services which best meet our needs, specifications, and requirements. In addition to price, the following will be considered in the evaluation of this Bid:

17.4.1 The ability, capacity, and skill of the bidder to perform the service or provide the material required, including the sufficiency of financial resources available.

17.4.2 The character, integrity, reputation, judgment, and experience of the bidder.

17.4.3 The quality and quantity of performance of previous contracts.

17.5 Upon review of the Bids, LCCC reserves the right to request the following additional information:

17.5.1 A break-down of bid costs to a reasonable level of detail.

17.5.2 An accounting review of bidders costs and submitted Bid.

17.5.3 Written Bidder verification of Bid Pricing and Specifications.

17.5.4 Other additional information that may be applicable to the evaluation and award of this Bid.

17.6 The Bid will be awarded to the lowest, most responsive and most responsible bidder complying with the prescribed Bid requirements and specifications, provided the price is reasonable and it is in the best interests of, and most advantageous to LCCC to accept it. The Director of Contracting & Procurement reserves the right to reject any and all bids and to waive any informality in bids received whenever such rejection or waiver is in the best interest of LCCC. Said individual also reserves the right to reject the Bid of a bidder who has previously
failed to perform properly or complete on time or on budget services of a similar nature, or a Bid of a bidder whose investigation shows is not in a position to perform the specified service.

17.7 LCCC reserves the right to negotiate with the successful Bidder any required changes and/or modifications to this Bid prior to signature of a Contract, if deemed in the best interest of LCCC to obtain the objectives and intent of this Bid, including \textit{but not limited to} budget compliance, scope of work modification, additions and/or deletions.

18. **OWNERSHIP OF DOCUMENTS / COLLEGE PROPERTY**

All drawings, specifications, pictures, data, information, documents, Bid related documents, and subsequent contract and/or PO documents are considered the sole property of LCCC and/or the Architect, and shall not be transmitted in any fashion or form without the express written consent of the LCCC legal counsel, Vice President of Administration and Finance Services, or their designated representative and the Architect's Principal-in-Charge.

19. **MATERIAL AVAILABILITY**

19.1 It is the responsibility of each bidder to verify the availability of material(s), delivery schedules, fabrication and manufacturing schedules and other pertinent data prior to submission of their Bid; and the responsibility of the successful bidder to provide same after award of the Bid. It is the responsibility of the bidder to notify LCCC immediately if material(s) specified are discontinued, replaced, or not available for an extended period to time. LCCC reserves the right to charge back additional costs, including but not limited to, freight, special handling, and purchase price difference due to delays, etc., to the successful bidder when items are not supplied as bid.

19.2 Failure of a bidder to furnish, within the time specified per the Bid for equipment, supplies, materials, services, and/or other items on which a Bid award is made, shall be cause for removal of bidder from the active list of bidders.

20. **PUBLIC INFORMATION**

All information, except that classified as confidential and/or proprietary, will become public information at the time that the Bid is awarded in accordance with applicable sections of the federal “Freedom of Information Act (FOIA) and Wyoming State Statute §16-4-201. Confidential and/or proprietary information must be marked \textit{“CONFIDENTIAL”} and/or \textit{“PROPRIETARY”} in bold letters in the upper right hand corner of each sheet (page) containing the confidential information. Price and information concerning the Bid specifications \textit{cannot} be considered confidential. All information identified as confidential and/or proprietary will remain confidential unless LCCC is required by legal order to make it available to the public or to particular parties.
21. **PROTESTS**

Any firm or vendor who is allegedly aggrieved in connection with the solicitation of a Bid, or award of a contract may protest. The protest must be submitted in writing to the Director of Contracting & Procurement within five (5) days after notification to all firms of intent to award. If the protest is not resolved by mutual agreement, the Director of Contracting & Procurement will promptly issue a decision in writing to the protestant. If the protestant wished to appeal the decision rendered, such appeal must be made in writing to the LCCC Vice President of Administration and Finance Services. The decision of this VP will be final. Unless this procedure is followed, a protest need not be considered by LCCC.

22. **RESPONSIBILITIES OF LCCC**

22.1 Execute Notice of Award, Notice to Proceed, Contract and/or Agreement following approval and award to the successful bidder.

22.2 Provide to all bidders any applicable documentation, drawings, specifications, records, or other data required to complete this bid.

22.3 Provide as required, uniform and consistent written documentation to all potential bidders deemed to be support assistance and as necessary to complete a Bid submittal.

22.4 LCCC may conduct such investigations as deemed necessary to establish the responsibility, qualifications, and financial ability of a bidder, their suppliers, affiliates, consultants, and/or sub-contractors to perform the services in accordance with this Bid.

23. **PAYMENT SCHEDULE**

23.1 LCCC shall make progress payments against the Bid Compensation sum which shall be submitted on an “Application and Certification for Payment (AIA Document G702 or equivalent). Each Application for Payment shall be one (1) calendar month ending on the last day of the respective month.

23.2 Each payment shall include detailed invoices as required by LCCC policies and procedures or other applicable regulations.

23.3 Final payment will be made subsequent to a forty-one (41) day advertising period, as required by Wyoming Statute §16-6-116 and 117. The final payment is also conditioned upon receipt of a sworn affidavit as required by this Statute. Said affidavit shall be completed by Contractor stating that all claims for materials and labor under the contract have been paid in full. Should there be a disputed claim, the affidavit shall so state the exact amount to be withheld from the final payment.
24. **TAX EXEMPTION**

LCCC is exempt from Wyoming sales or use tax for direct purchases of materials and supplies. A copy of the Wyoming Sales Tax Exemption Form will be issued upon request. LCCC’s federal identification number is 83-6009473.

END OF SECTION TWO
SECTION THREE

BID SUBMITTAL & PRICING DOCUMENT

DO NOT MODIFY BID DOCUMENT – Any modification or alteration to this Document from its original format will result in rejection of the respective Bid. BID FORM TO BE COMPLETED IN ITS ENTIRETY, SIGNED IN INK, AND SUBMITTED IN ITS ENTIRETY.

Bid No.: IFB-17111

Bid Description: Gateways for Secondary Entries

Bid Due/Opening Date: January 26, 2017, @ 3:00 p.m. (prevailing local time)

This Bid shall be submitted to:
Laramie County Community College
Administration Building, Administration & Finance Conference Room AM-104
1400 East College Drive, Cheyenne, WY 82007

1. BID REQUIREMENTS AND FORMAT

1.1 An original Bid shall be completed on this document titled “BID SUBMITTAL & PRICING DOCUMENT” and submitted per the specifications and requirements of Bid No. IFB-17111. Failure to complete or submit any required portion of this BID SUBMITTAL & PRICING DOCUMENT; and/or to deface or alter any portion of the Bid Documents shall be cause for rejection of said Bid as being unacceptable, non-responsive, non-conforming or conditional.

1.2 The undersigned agrees that their Bid will not be withdrawn for a period of forty-five (45) days from the date of Bid opening.

1.3 The undersigned Bidder proposes and agrees, if this Bid is accepted, to perform all work and/or services as specified or indicated in the Bid Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bid Documents. Bidder acknowledges that they have included the cost of all insurance requirements, permits, bonds and taxes as required, and will execute and return same in the time allotted within the general conditions of the Bid Documents and subsequently issued Contract.

1.4 Bidder has visited the site and become familiar with and is satisfied as to the general, local and site conditions that may affect cost, progress, and performance of the work and/or services. Bidder has correlated
the information known to bidder, information and observations from visits to the work site, reports and drawings identified in the Bid Documents.

1.5 Bidder is familiar with and is satisfied as to all federal, state and local laws and regulations that may affect cost, progress and performance of the work and/or services.

1.6 Bidder does not consider that any further examinations, investigations, explorations, tests, studies, specifications, or date are necessary for the determination of this bid for performance of the work and/or services at the price(s) bid and within the times and in accordance with the other items and conditions of the Bid Documents.

1.7 Bidder has given LCCC and Architect written notice of all conflicts, errors, ambiguities or discrepancies that the bidder has discovered in the Bid Documents, and the written resolution thereof by LCCC and Architect is acceptable to bidder. The Bid Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the work and/or services for which this Bid is submitted.

1.8 Any assumption, exception or exclusion related to any part of the Bid Documents must be noted prior to Bid Due/Opening Date, and may result in bidder being disqualified or reduced in standing. Assumptions, exceptions or exclusions taken after issuance of a “Notice of Award” document may also result in disqualification.

1.9 Bidder acknowledges receipt of complete Bid Document package, including all incorporated and attached Bid Documents.

1.10 Acknowledgement and compliance with applicable State Statutes is the sole responsibility of the “Prime” or “General” Contractor and all subcontractors. LCCC reserves the right to request written verification of same.

2. PROJECT SCOPE AND DETAILS

2.1 The Work includes and consists of furnishing all labor, operations, materials, accessories, incidental services indicated, specified, mentioned, scheduled or implied per the Bid Documents for work on the specific aforementioned project. The specific Work includes: construction of sandstone monuments with pre-cast concrete caps, pin mounted metal LCCC logos at both of the secondary entrances to the LCCC campus. Landscaping improvements to include low water shrubs, perennial flowers and trees (bid alternate) and all associated irrigation system extension and expansion. The LCCC logo will be illuminated at night with electrical up-lights mounted inconspicuously above the finished grade behind the plantings. The project will be developed in two (2) parts:
1. Stone monuments with logo and lighting, civil minor improvements and drainage improvements, landscaping improvements to include irrigation system extension and expanded irrigation system.

2. Work under owner’s separate contract: accent lighting for monuments, power for irrigation and light pole fixture replacement.

Alternate No. 1 - Added Ponderosa trees with irrigation (Bid Alternate ADD):

1. Add Ponderosa Pine trees as designated on bid alternate trees on the Landscape Planting Plans L-201 and L-202 with the added irrigation as show on the Irrigation Plans.

All materials, services and/or work not specifically mentioned which are necessary in order to provide a complete project shall be included in the bid and shall conform to all Local, State, and Federal requirements in accordance with the requirements, terms, specifications, conditions, and provisions hereinafter contained.

2.2 Project Representatives

**LCCC**
Tim Macnamara
Director, Physical Plant
(307) 778-1256
tmacnama@lccc.wy.edu

**Architect’s Project Manager**
Sallie Means
By Architectural Means, PC
307-637-7300
smeans@byarchmeans.com

2.3 Project Schedule

<table>
<thead>
<tr>
<th>Event</th>
<th>Date/Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-bid Meeting</td>
<td>January 10, 2017 9:30 a.m.</td>
</tr>
<tr>
<td>Questions Due</td>
<td>January 17, 2017</td>
</tr>
<tr>
<td>Issue Addendum</td>
<td>January 20, 2017</td>
</tr>
<tr>
<td>Bids Due</td>
<td>January 26, 2017 3:00 p.m.</td>
</tr>
<tr>
<td>Notice of Award</td>
<td>February 6, 2017</td>
</tr>
<tr>
<td>NTP</td>
<td>February 27, 2017</td>
</tr>
<tr>
<td>Construction Start</td>
<td>April 1, 2017</td>
</tr>
<tr>
<td>Substantial Completion</td>
<td>July 10, 2017</td>
</tr>
</tbody>
</table>

2.4 Liquidated Damages: For failure to complete the Work on time, it is mutually agreed by and between the parties hereto that time is of the essence and that in the case of the Contractor’s failure to complete the contract within the time specified and agreed upon (substantial completion date), the Owner will be damaged thereby; and because it is difficult to definitely ascertain and prove the amount of said damages, it is hereby agreed that the amount of such damages shall be the liquidated sum of two hundred fifty dollars ($250.00) per calendar day for every day's delay in finishing the Work in excess of the number of working days prescribed until such time as the Work is completed and accepted via written instrument by the Owner; and the Contractor hereby agrees that said sum shall be deducted from monies due the contractor under the contract or if no money is due the Contractor, the Contractor hereby agrees to pay to the Owner as
liquidated damages, and not by way of penalty, such total sum as shall be due for such delay.

If the Contractor has not completed all Punch List items within sixty (60) days from when the list was generated, the Owner may address the Punch List items with other forces and back-charge the Contractor for those forces in addition to days of non-compliance.

3. BID PRICE SCHEDULE

3.1 The undersigned, in compliance with the Bid Document package requirements and instructions, having read and examined same, and having visited the site of the proposed work, and being familiar with the conditions surrounding the Bid Project, including availability of materials, utilities and labor, proposes to perform the proposed scope of work for the proposed price which includes (but is not limited to) the furnishing of labor, materials, shop drawings (if required), transportation, tools, equipment, insurance, bonds, applicable taxes, temporary provisions, escalation, overhead and profits necessary for the completion of the work in accordance with and described, indicated or reasonably inferred per this certain Bid Document package.

3.2 Each submitted Bid shall have a Base Bid below. Bid values shall be written in words and in figures, discrepancies between words and figures will be resolved in favor of written words.

3.3 Total Project Base Bid, inclusive of entire project scope

   Base Bid  $______________________________

   Other Costs (submit list on separate sheet)  $______________________________

   Grand Total Written in Words (Base Bid, P&P Bond, and other Costs)

   $______________________________

   Grand Total Written in Figures
3.4 Bid Alternate #1 – added Ponderosa trees with irrigation (Bid Alternate ADD):

a) Add Ponderosa Pine trees as designated on bid alternate trees on the Landscape Planting Plans L-201 and L-202 with the added irrigation as show on the Irrigation Plans.

**Unit Price Schedule**

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Unit Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Provide and Install one six-foot Ponderosa Pine tree per specifications complete with irrigation system (including 30 ft. extension of 1” irrigation line and two spray heads at locations designated by the Owner in a supplemental drawing issued by the Architect. Total quantity to be authorized and locations designated by the Owner post bid.</td>
<td>$____________/tree</td>
</tr>
<tr>
<td>02</td>
<td>Provide and Install one eight-foot Ponderosa Pine tree per specifications complete with irrigation system (including 30 ft. extension of 1” irrigation line and two spray heads at locations designated by the Owner in a supplemental drawing issued by the Architect. Total quantity to be authorized and locations designated by the Owner post bid.</td>
<td>$____________/tree</td>
</tr>
<tr>
<td>03</td>
<td>Provide and Install one ten-foot Ponderosa Pine tree per specifications complete with irrigation system (including 30 ft. extension of 1” irrigation line and two spray heads at locations designated by the Owner in a supplemental drawing issued by the Architect. Total quantity to be authorized and locations designated by the Owner post bid.</td>
<td>$____________/tree</td>
</tr>
</tbody>
</table>

4. **STATE STATUTES AND REGULATIONS**

**WYOMING RESIDENT CONTRACTOR**

4.1 Are you submitting this Bid as a Wyoming Resident Contractor?

☑ No
☐ Yes, my Contractor Residency Certification Number is ___________, and my bid complies with Wyoming Statutes §16-6-101 through 107 and §16-6-1001. This Bid will be awarded
based on the Contractor’s statement of meeting the requirements of these Wyoming Statutes. Subsequent information verifying the statute retirements have been met may be required up to and including possible audits to confirm that the contractor has not subcontracted more than a total of 30% of the work covered by his contract to non-resident subcontractors and non-resident sub-tier contractors and that other applicable statute requirements have been met. (Certificate of Residency must be current and on file with the State of Wyoming Department of Employment, Labor Standards Division (307.777.7261).

4.2 **Debarment/Suspension**: A Vendor certifies, by submission of their respective Bid, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, sentenced to a denial of State or Federal benefits by State or Federal court, or voluntarily excluded from participation in this transaction by any State or Federal department or agency. Submission is also agreement that LCCC will be notified of any change in this status. Additionally:

a) Have not within a three-year period preceding this transaction been convicted of or had a civil judgment rendered against them for commission of fraud or criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or Local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property; and,

b) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State, or Local) with commission of any of the offenses enumerated in Paragraph “a” above; and have not within a three-year period preceding this transaction had one or more public transactions (Federal, State, or Local) terminated for cause or default.

Verification and Certification of Debarment Status
☐ Presently debarred, suspended, or excluded per the above criteria.
☐ Not presently debarred, suspended or excluded per the above criteria.

5. **REQUIRED SUBMITTALS** *(SUBMIT WITH BID)*

The following documents shall be included with your Bid submittal:

5.1 LCCC “BID SUBMITTAL & PRICING DOCUMENT.
5.2 Bid bond or Bid security.
5.3 Acknowledgement of any issued Addendums.
5.4 A list of substitutions, clarifications, qualifications, assumptions, or exceptions *(if applicable).*
5.5 Residency Certification
5.6 OSHA construction Training Certification: Ten (10) hour card for project manager or equivalent.
5.7 CSI Division Work Assignment Schedule
6. **BID DOCUMENT CHECKLIST**

- LCCC “BID SUBMITTAL & PRICING DOCUMENT” completed, signed in ink and submitted.
- Bid Bond completed and submitted.
- Acknowledged any issued addendum(s) and submitted.
- A listing of substitutions, qualifications, exclusions, exceptions and/or clarifications, submitted on a company letterhead.
- Residency Certification submitted.
- OSHA ten (10) hour card certification.

7. **APPENDIX – BID ATTACHMENTS**

The following documents are attached hereto and incorporated by reference and shall become a part and condition of this certain Bid.

7.1 Exhibit B: LCCC Insurance Requirements, 2 pages inclusive.
7.2 Exhibit C: Architect’s Project Manual and Specifications.
7.3 Exhibit D: Architect’s Project Drawing Package.
7.4 Exhibit E: 2016 Building Construction Prevailing Wages
7.5 Exhibit F: CSI Division Work Assignment Schedule

8. **POST-BID SUBMITTALS**

The undersigned also agrees to furnish the following post-bid submittals to LCCC within ten (10) days after Notice of Award:

8.1 Performance and Payment Bond
8.2 Certificate of Liability Insurance
8.3 Construction Schedule
8.4 Schedule of Values
9. ADDENDA ACKNOWLEDGEMENT

9.1 All IFB Addenda must be acknowledged in writing and submitted with Bid. Confirmation and receipt of all issued Addenda is the responsibility of each prospective firm to verify. Verification can be obtained by contacting the LCCC Purchasing Office at (307) 778-1280 or via e-mail at: jspezzano@lccc.wy.edu

Bid No.: IFB-17111

Project Description: Gateways for Secondary Entries

I, the undersigned, hereby acknowledge receipt of the following addenda for LCCC Bid No. IFB-17111:

Addendum No._____; Addendum No._____; Addendum No._____; Addendum No._____

Name of Bidder – Company Name

___________________________________________
Signature

Printed Name

___________________________________________
Title

Date
10. **SIGNATURE PAGE**

10.1 Signature page must be completed in its entirety and submitted with Bid Document package.

10.2 Signature page must be signed by firm’s authorized agent, failure to do so will result in rejection of said bid as being unacceptable and non-responsive.

The undersigned, as an authorized agent for the Firm named below, acknowledges that he/she has examined, read, and understands this Request for Bid with its incorporated or related documents, and hereby offers to furnish all labor, materials, equipment, services, and information necessary to comply with the requirements, terms, specifications, conditions, and provisions set forth herein.

____________________________
Authorized Signature

____________________________
Printed Name

____________________________
Title

____________________________
Name of Firm

____________________________
Mailing Address

____________________________
City, State, Zip

____________________________
Phone #

____________________________
Fax #

E-mail address

Dated this _______ day of ____________________, 2017

__ **Bidder must return this entire “BID SUBMITTAL & PRICING DOCUMENT” along with each document described in Bid Document Checklist.**__

END OF SECTION THREE
SECTION 01 10 00
SUMMARY

PART 1 GENERAL

1.01 PROJECT
A. Project Name: LCCC Gateway Secondary Entries.
B. Owner's Name: Laramie County Community College.
C. Architect's Name: Architect.
D. The Project consists of the construction of native sandstone monuments with pre-cast concrete caps, pin mounted metal LCCC logos at both of the secondary entrances to the LCCC campus on College Drive. The LCCC logo will be illuminated at night with electrical up-lights mounted inconspicuously above the finished grade behind plantings. The project includes civil drainage improvements and limited concrete site improvements as indicated on the drawings. Landscaping improvements includes trees, shrubs, plantings with irrigation and seeding.

The project will be developed in two parts:
Bid Package: Native stone monuments with logo and lighting, civil minor site improvements, campus irrigation system extension across campus loop road and drainage improvements. Also included will be landscaping with irrigation. Low water landscaping shrubs and perennial flowers will complete the gateway improvements.

Work Scope provided by Owner: Work Under Owner’s Separate Contract: accent lighting for monuments, power for irrigation controller and light pole fixture replacement.

1.02 CONTRACT DESCRIPTION
A. Contract Type: A single prime contract based on Lump Sum Price as described in the Contract.

1.03 DESCRIPTION OF WORK
A. Scope of site improvements is shown on drawings to include civil, landscape, irrigation and architectural drawings.

1.04 OWNER OCCUPANCY
A. Owner intends to continue to occupy adjacent existing buildings during the entire construction period.
B. Owner and the LCCC students intend to continue to occupy the site during the entire construction period.
C. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.
D. Schedule the Work to accommodate Owner occupancy.

1.05 CONTRACTOR USE OF SITE
A. Construction Operations: Limited to areas noted on Drawings.
B. Arrange use of site to allow:
   1. Owner occupancy.
   2. Use of site by the public.
C. Provide access to and from site as required by law and by Owner:
   1. Do not obstruct roadways, sidewalks, or other public ways without permit.
   2. Owner reserves the right to request the Contractor to modify time of construction activity to not interfere with campus activities.
1.06 WORK SEQUENCE
   A. Coordinate construction schedule and operations with Architect and the Owner.
   B. Contractor is required to coordinate with Owner’s separate electrical contractor installing site lighting improvements on campus. Separate contractor will be responsible for installation of ground mounted light just south of the stone monuments for the purpose of lighting the campus logo, power for irrigation controller and light pole replacements.

1.07 SPECIFICATION SECTIONS APPLICABLE TO ALL CONTRACTS
   A. Unless otherwise noted, all provisions of the sections listed below apply to all contracts. Specific items of work listed under individual contract descriptions constitute exceptions.
   B. Section 01 20 00 - Price and Payment Procedures.
   C. Section 01 22 00 - Unit Prices
   D. Section 01 23 00 - Alternates.
   E. Section 01 30 00 - Administrative Requirements.
   F. Section 01 32 16 - Construction Progress Schedule.
   G. Section 01 40 00 - Quality Requirements.
   H. Section 01 50 00 - Temporary Facilities and Controls.
   I. Section 01 60 00 - Product Requirements.
   J. Section 01 70 00 - Execution and Closeout Requirements.
   K. Section 01 78 00 - Closeout Submittals.

END OF SECTION
PART 1 GENERAL

1.01 SECTION INCLUDES
   A. List of unit prices, for use in preparing Bids.
   B. The unit prices will be held by the Bidder for 90 days. It is the intent of the Owner to authorize a specific quantity of unit price work with the bid award or by Change Order within 90 days of the execution of the contract.

1.02 COSTS INCLUDED
   A. Unit Prices included on the Bid Form shall include full compensation for all required labor, products, tools, equipment, plant, transportation, services and incidentals; erection, application or installation of an item of the Work; overhead and profit.

1.03 UNIT QUANTITIES SPECIFIED
   A. Quantities indicated in the Bid Form are for bidding and contract purposes only. Quantities and measurements of actual Work will determine the payment amount.

1.04 PAYMENT
   A. Payment for Work governed by unit prices will be made on the basis of the actual measurements and quantities of Work that is incorporated in or made necessary by the Work and accepted by the Architect, multiplied by the unit price.

1.05 DEFECT ASSESSMENT
   A. Replace Work, or portions of the Work, not conforming to specified requirements.
   B. The authority of Architect to assess the defect and identify payment adjustment is final.

1.06 SCHEDULE OF UNIT PRICES
   A. As identified on the “Bid Schedule” and as follows:

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit Price #01</td>
<td>Provide and Install one six foot Ponderosa Pine tree per specifications complete with irrigation system (including 30 ft. extension of 1” irrigation line and two spray heads at locations designated by the Owner in a supplemental drawing issued by the Architect. Total quantity to be authorized and locations designated by the Owner post bid.</td>
</tr>
<tr>
<td>Unit Price #02</td>
<td>Provide and Install one eight foot Ponderosa Pine tree per specifications complete with irrigation system (including 30 ft. extension of 1” irrigation line and two spray heads at locations designated by the Owner in a supplemental drawing issued by the Architect. Total quantity to be authorized and locations designated by the Owner post bid.</td>
</tr>
<tr>
<td>Unit Price #03</td>
<td>Provide and Install one ten foot Ponderosa Pine tree per specifications complete with irrigation system (including 30 ft. extension of 1” irrigation line and two spray heads at locations designated by the Owner in a supplemental drawing issued by the Architect. Total quantity to be authorized and locations designated by the Owner post bid.</td>
</tr>
</tbody>
</table>
PART 2 PRODUCTS - NOT USED
PART 3 EXECUTION - NOT USED

END OF SECTION
SECTION 01 23 00
ALTERNATES

PART 1 GENERAL

1.01 SECTION INCLUDES
   A. Description of alternates.
   B. Procedures for pricing alternates.
   C. Documentation of changes to Contract Sum and Contract Time.

1.02 RELATED SECTIONS
   A. Section 32 93 00 - Planting

1.03 ACCEPTANCE OF ALTERNATES
   A. Alternates quoted on Bid Forms will be reviewed and accepted or rejected at Owner's option. Accepted alternates will be identified in the Owner-Contractor Agreement.
   B. Coordinate related work and modify surrounding work to integrate the Work of each alternate.

1.04 SCHEDULE OF ALTERNATES
   A. Alternate No. 1 - Added Trees w/Irrigation (ADD):
      1. Base Bid:
         a. Landscaping Planting with trees as shown on drawings.
         b. Irrigation system as shown on drawings.
      2. Alternate Bid:
         a. Add Ponderosa Pine trees as designated as bid alternate trees on the Landscape Planting Plan with the added irrigation as shown on the Irrigation Plan.

PART 2 PRODUCTS - NOT USED
PART 3 EXECUTION - NOT USED

END OF SECTION
PART 1 GENERAL

1.01 SECTION INCLUDES
   A. Preconstruction meeting.
   B. Site mobilization meeting.
   C. Progress meetings.
   D. Construction progress schedule.
   E. Submittals for review, information, and project closeout.
   F. Number of copies of submittals.
   G. Submittal procedures.

1.02 RELATED REQUIREMENTS
   A. Section 01 32 16 - Construction Progress Schedule: Form, content, and administration of schedules.
   B. Section 01 70 00 - Execution and Closeout Requirements: Additional coordination requirements.
   C. Section 01 78 00 - Closeout Submittals: Project record documents.

1.03 PROJECT COORDINATION
   A. Project Coordinator: LCCC Owner’s Representative.
   B. Cooperate with the Project Coordinator in allocation of mobilization areas of site; for field offices and sheds, for construction and public access, traffic, and parking facilities.
   C. During construction, coordinate use of site and facilities through the Project Coordinator.
   D. Comply with Project Coordinator's procedures for intra-project communications; submittals, reports and records, schedules, coordination drawings, and recommendations; and resolution of ambiguities and conflicts.
   E. Comply with instructions of the Project Coordinator for use of temporary utilities and construction facilities.
   F. Coordinate field engineering and layout work.
   G. Make the following types of submittals to Architect:
      1. Requests for interpretation.
      2. Requests for substitution.
      3. Shop drawings, product data, and samples.
      4. Test and inspection reports.
      5. Manufacturer's instructions and field reports.
      6. Applications for payment and change order requests.
      7. Progress schedules.
      8. Coordination drawings.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PRECONSTRUCTION MEETING
   A. Architect will schedule a meeting after Notice of Award.
   B. Attendance Required:
      1. Owner.
      3. Contractor.
C. Agenda:
   1. Execution of Owner-Contractor Agreement.
   2. Submission of executed bonds and insurance certificates.
   4. Submission of list of Subcontractors, list of Products, schedule of values, and progress schedule.
   5. Designation of personnel representing the parties to Contract, Owner and Architect.
   6. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
   7. Scheduling.

D. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

3.02 PROGRESS MEETINGS
   A. Schedule and administer meetings throughout progress of the Work at weekly intervals.
   B. Make arrangements for meetings, prepare agenda with copies for participants, preside at meetings.
   C. Attendance Required: Job superintendent, major Subcontractors and suppliers, Owner, Architect, as appropriate to agenda topics for each meeting.

D. Agenda:
   1. Review minutes of previous meetings.
   2. Review of Work progress.
   3. Field observations, problems, and decisions.
   4. Identification of problems that impede, or will impede, planned progress.
   5. Review of submittals schedule and status of submittals.
   6. Review of off-site fabrication and delivery schedules.
   7. Maintenance of progress schedule.
   8. Corrective measures to regain projected schedules.
   9. Planned progress during succeeding work period.
   10. Maintenance of quality and work standards.
   11. Effect of proposed changes on progress schedule and coordination.
   12. Other business relating to Work.

E. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

3.03 CONSTRUCTION PROGRESS SCHEDULE
   A. Within 10 days after date of the Agreement, submit preliminary schedule defining planned operations for the first 60 days of Work, with a general outline for remainder of Work.
   B. If preliminary schedule requires revision after review, submit revised schedule within 10 days.
   C. Within 20 days after review of preliminary schedule, submit draft of proposed complete schedule for review.
      1. Include written certification that major contractors have reviewed and accepted proposed schedule.

D. Within 10 days after joint review, submit complete schedule.

E. Submit updated schedule with each Application for Payment.

3.04 SUBMITTALS FOR REVIEW
   A. When the following are specified in individual sections, submit them for review:
      1. Product data.
      2. Shop drawings.
      3. Samples for selection.
      4. Samples for verification.
B. Submit to Architect for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.

C. Samples will be reviewed only for aesthetic, color, or finish selection.

D. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Section 01 78 00 - CLOSEOUT SUBMITTALS.

3.05 SUBMITTALS FOR INFORMATION

A. When the following are specified in individual sections, submit them for information:
   1. Design data.
   2. Certificates.
   3. Test reports.
   4. Inspection reports.
   5. Manufacturer's instructions.
   6. Manufacturer's field reports.
   7. Other types indicated.

B. Submit for Architect's knowledge as contract administrator or for Owner. No action will be taken.

3.06 SUBMITTALS FOR PROJECT CLOSEOUT

A. When the following are specified in individual sections, submit them at project closeout:
   1. Project record documents to include as-built drawings.
   2. Operation and maintenance data.
   3. Warranties.
   5. Other types as indicated.

B. Submit for Owner's benefit during and after project completion.

3.07 NUMBER OF COPIES OF SUBMITTALS

A. Documents for Review:
   1. Small Size Sheets, Not Larger Than 8-1/2 x 11 inches: Submit one copy; the Contractor shall make his own copies from original returned by the Architect after making his own file copy.
   2. Larger Sheets, Not Larger Than 36 x 48 inches: Submit one reproducible transparency and one opaque reproduction.

B. Documents for Information: Submit two copies.

C. Documents for Project Closeout: Make one reproduction of submittal originally reviewed. Submit one extra of submittals for information.

D. Samples: Submit the number specified in individual specification sections; one of which will be retained by Architect.
   1. After review, produce duplicates.
   2. Retained samples will not be returned to Contractor unless specifically so stated.

3.08 SUBMITTAL PROCEDURES

A. Transmit each submittal with approved form.

B. Sequentially number the transmittal form. Revise submittals with original number and a sequential alphabetic suffix.

C. Identify Project, Contractor, Subcontractor or supplier; pertinent drawing and detail number, and specification section number, as appropriate on each copy.

D. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of Products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with the requirements of the Work and Contract Documents.

E. Deliver submittals to Architect at business address.
F. Schedule submittals to expedite the Project, and coordinate submission of related items.

G. For each submittal for review, allow 14 days excluding delivery time to and from the Contractor.

H. Identify variations from Contract Documents and Product or system limitations that may be detrimental to successful performance of the completed Work.

I. Provide space for Contractor and Architect review stamps.

J. When revised for resubmission, identify all changes made since previous submission.

K. Distribute reviewed submittals as appropriate. Instruct parties to promptly report any inability to comply with requirements.

L. Submittals not requested will not be recognized or processed.

END OF SECTION
SECTION 01 40 00
QUALITY REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES
A. References and standards.
B. Quality assurance submittals.
C. Mock-ups.
D. Control of installation.
E. Tolerances.
F. Testing and inspection services.
G. Manufacturers’ field services.

1.02 RELATED REQUIREMENTS
A. Section 01 30 00 - Administrative Requirements: Submittal procedures.
B. Section 01 60 00 - Product Requirements: Requirements for material and product quality.

1.03 REFERENCE STANDARDS

1.04 SUBMITTALS
A. Testing Agency Qualifications:
   1. Prior to start of Work, submit agency name, address, and telephone number, and names of full time registered Wyoming engineer and responsible officer.
   2. Submit copy of report of laboratory facilities inspection made by NIST Construction Materials Reference Laboratory during most recent inspection, with memorandum of remedies of any deficiencies reported by the inspection.
   3. Qualification Statement: Provide documentation showing testing laboratory is accredited under IAS AC89.
B. Design Data: Submit to the Owner (LCCC) and Architect for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.
C. Test Reports: After each test/inspection, promptly submit four copies of report to the Owner for distribution to Architect (one copy) and to Contractor (one copy).
   1. Include:
      a. Date issued.
      b. Project title and number.
      c. Name of inspector.
      d. Date and time of sampling or inspection.
      e. Identification of product and specifications section.
      f. Location in the Project.
      g. Type of test/inspection.
      h. Date of test/inspection.
i. Results of test/inspection.
j. Conformance with Contract Documents.
k. When requested by Architect, provide interpretation of results.

D. Certificates: When specified in individual specification sections, submit certification by the manufacturer and Contractor or installation/application subcontractor to Architect, in quantities specified for Product Data.
  1. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
  2. Certificates may be recent or previous test results on material or product, but must be acceptable to Architect.

1.05 REFERENCES AND STANDARDS

A. For products and workmanship specified by reference to a document or documents not included in the Project Manual, also referred to as reference standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.

B. Conform to reference standard of date of issue current on date of Contract Documents, except where a specific date is established by applicable code.

C. Obtain copies of standards where required by product specification sections.

D. Maintain copy at project site during submittals, planning, and progress of the specific work, until Substantial Completion.

E. Should specified reference standards conflict with Contract Documents, request clarification from Architect before proceeding.

F. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of Architect shall be altered from the Contract Documents by mention or inference otherwise in any reference document.

1.06 TESTING AND INSPECTION AGENCIES

A. Owner will employ services of an independent testing agency to perform certain specified testing; payment for cost of services will be derived from allowance specified in Section 01 21 00; see Section 01 21 00 and applicable sections for description of services included in allowance.

B. Contractor shall employ and pay for services of an independent testing agency to perform other specified testing.

C. Employment of agency in no way relieves Contractor of obligation to perform Work in accordance with requirements of Contract Documents.

D. Contractor Employed Agency:

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 CONTROL OF INSTALLATION

A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.

B. Comply with manufacturers' instructions, including each step in sequence.

C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.

D. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
E. Have Work performed by persons qualified to produce required and specified quality.
F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

3.02 MOCK-UPS
A. Tests will be performed under provisions identified in this section and identified in the respective product specification sections.
B. Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes.
C. Accepted mock-ups shall be a comparison standard for the remaining Work.
D. Where mock-up has been accepted by Architect and is specified in product specification sections to be removed, remove mock-up and clear area when directed to do so.

3.03 TOLERANCES
A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.
B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Architect before proceeding.
C. Adjust products to appropriate dimensions; position before securing products in place.

3.04 TESTING AND INSPECTION
A. Testing Agency Duties:
   2. Perform specified sampling and testing of products in accordance with specified standards.
   3. Ascertain compliance of materials and mixes with requirements of Contract Documents.
   4. Promptly notify Architect and Contractor of observed irregularities or non-conformance of Work or products.
   5. Perform additional tests and inspections required by Architect.
   6. Submit reports of all tests/inspections specified.
B. Limits on Testing/Inspection Agency Authority:
   1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
   2. Agency may not approve or accept any portion of the Work.
   3. Agency may not assume any duties of Contractor.
   4. Agency has no authority to stop the Work.
C. Contractor Responsibilities:
   1. Deliver to agency at designated location, adequate samples of materials proposed to be used that require testing, along with proposed mix designs.
   2. Cooperate with laboratory personnel, and provide access to the Work and to manufacturers' facilities.
   3. Provide incidental labor and facilities:
      a. To provide access to Work to be tested/inspected.
      b. To obtain and handle samples at the site or at source of Products to be tested/inspected.
      c. To facilitate tests/inspections.
      d. To provide storage and curing of test samples.
   4. Notify Architect and laboratory 48 hours prior to expected time for operations requiring testing/inspection services.
5. Employ services of an independent qualified testing laboratory and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.

6. Arrange with Owner's agency and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.

D. Re-testing required because of non-conformance to specified requirements shall be performed by the same agency on instructions by Architect.

E. Re-testing required because of non-conformance to specified requirements shall be paid for by Contractor.

3.05 DEFECT ASSESSMENT

A. Replace Work or portions of the Work not conforming to specified requirements.

B. If, in the opinion of Architect, it is not practical to remove and replace the Work, Architect will direct an appropriate remedy or adjust payment.

END OF SECTION
SECTION 01 50 00
TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.01 SECTION INCLUDES
   A. Temporary sanitary facilities.
   B. Temporary Controls: Barriers, enclosures, and fencing.
   C. Security requirements.
   D. Vehicular access and parking.
   E. Waste removal facilities and services.

1.02 TEMPORARY SANITARY FACILITIES
   A. Provide and maintain required facilities and enclosures. Provide at time of project mobilization.
   B. Maintain daily in clean and sanitary condition.

1.03 BARRIERS
   A. Provide barriers to prevent unauthorized entry to construction areas, to prevent access to areas that could be hazardous to workers or the public, to allow for owner’s use of site and to protect existing facilities and adjacent properties from damage from construction operations and demolition.
   B. Provide barricades required by governing authorities for public rights-of-way and for public access to existing buildings.
   C. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

1.04 FENCING
   A. Construction: Commercial grade chain link fence.
   B. Provide 6 foot high fence around required areas for the construction as deemed necessary by the contractor; equip with vehicular gates with locks.
   C. Provide temporary 4 foot high fence around existing trees as designated on the landscape drawings to protect the existing trees during construction.

1.05 SECURITY
   A. Provide security and facilities to protect Work from unauthorized entry, vandalism, or theft.

1.06 VEHICULAR ACCESS AND PARKING
   A. Comply with regulations relating to use of streets and sidewalks, access to emergency facilities, and access for emergency vehicles.
   B. Coordinate access and haul routes with governing authorities and Owner.
   C. Provide and maintain access to fire hydrants, free of obstructions.
   D. Provide means of removing mud from vehicle wheels before entering streets.
   E. Designated existing on-site roads may be used for construction traffic.
   F. Provide temporary parking areas to accommodate construction personnel.
   G. Do not allow vehicle parking on existing pavement.

1.07 WASTE REMOVAL
   A. Provide waste removal facilities and services as required to maintain the site in clean and orderly condition.
   B. Provide containers with lids. Remove trash from site periodically.
   C. If materials to be recycled or re-used on the project must be stored on-site, provide suitable non-combustible containers; locate containers holding flammable material outside the structure unless otherwise approved by the authorities having jurisdiction.
1.08 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS
   A. Remove temporary utilities, equipment, facilities, materials, prior to Substantial Completion inspection.
   B. Remove underground installations to a minimum depth of 2 feet. Grade site as indicated.
   C. Clean and repair damage caused by installation or use of temporary work.
   D. Restore existing facilities used during construction to original condition.

PART 2 PRODUCTS - NOT USED
PART 3 EXECUTION - NOT USED

END OF SECTION
SECTION 01 60 00
PRODUCT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES
A. General product requirements.
B. Re-use of existing products.
C. Transportation, handling, storage and protection.
D. Product option requirements.
E. Substitution limitations and procedures.

1.02 RELATED REQUIREMENTS
A. Section 01 10 00 - Summary: Lists of products to be reused.
B. Section 01 40 00 - Quality Requirements: Product quality monitoring.

1.03 REFERENCE STANDARDS
A. NFPA 70 - National Electrical Code; National Fire Protection Association; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

1.04 SUBMITTALS
A. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers’ standard data to provide information specific to this Project.
B. Shop Drawing Submittals: Prepared specifically for this Project; indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
C. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
   1. For selection from standard finishes, submit samples of the full range of the manufacturer's standard colors, textures, and patterns.

PART 2 PRODUCTS

2.01 EXISTING PRODUCTS
A. Do not use materials and equipment removed from existing premises unless specifically required or permitted by the Contract Documents.
B. Products to be Salvaged and Reused: none
C. Unforeseen historic items encountered remain the property of the Owner; notify Owner promptly upon discovery; protect, remove, handle, and store as directed by Owner.

2.02 NEW PRODUCTS
A. Provide new products unless specifically required or permitted by the Contract Documents.
B. Do not use products having any of the following characteristics:
   1. Made outside the United States, its territories, Canada, or Mexico.
C. Where all other criteria are met, Contractor shall give preference to products that:
   1. Are extracted, harvested, and/or manufactured closer to the location of the project.
   2. Have longer documented life span under normal use.
   3. Result in less construction waste.

2.03 PRODUCT OPTIONS
A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.
B. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed.

C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

PART 3 EXECUTION

3.01 SUBSTITUTION PROCEDURES

A. Instructions to Bidders specify time restrictions for submitting requests for substitutions during the bidding period. Comply with requirements specified in this section.

B. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.

C. A request for substitution constitutes a representation that the submitter:
   1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
   2. Will provide the same warranty for the substitution as for the specified product.
   3. Will coordinate installation and make changes to other Work that may be required for the Work to be complete with no additional cost to Owner.
   4. Waives claims for additional costs or time extension that may subsequently become apparent.
   5. Will reimburse Owner and Architect for review or redesign services associated with re-approval by authorities.

D. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.

E. Substitution Submittal Procedure:
   1. Submit three copies of request for substitution for consideration. Limit each request to one proposed substitution.
   2. Submit shop drawings, product data, and certified test results attesting to the proposed product equivalence. Burden of proof is on proposer.
   3. The Architect will notify Contractor in writing of decision to accept or reject request.

3.02 TRANSPORTATION AND HANDLING

A. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.

B. Transport and handle products in accordance with manufacturer’s instructions.

C. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.

D. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.

E. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.

F. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

3.03 STORAGE AND PROTECTION

A. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication.

B. Store and protect products in accordance with manufacturers’ instructions.

C. Store with seals and labels intact and legible.

D. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to product.
E. For exterior storage of fabricated products, place on sloped supports above ground.

F. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.

G. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.

H. Prevent contact with material that may cause corrosion, discoloration, or staining.

I. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.

J. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

END OF SECTION
SUBSTITUTION REQUEST FORM

TO:       By Architectural Means, PC
          Attn:  Sallie Means
          311 West 18th St., Suite 300
          Cheyenne, WY  82001

PROJECT NAME:  Laramie County Community College
               Gateway for Secondary Entries

SUPPLIER/SUBCONTRACTOR:  _____________________________________________________

We hereby submit for consideration, the following product instead of specified item for above project:

SECTION       PARAGRAPH       SPECIFIED MATERIAL

 Proposed Substitution:  _____________________________________________________

Substitution Requests will only be accepted within 10 days prior to the Bid Opening Date. No Substitution Requests will be reviewed after that deadline.

Attach complete dimensional information and technical data, including laboratory rests, if applicable.

Include complete information on changes to Drawings and/or Specifications which proposed substitution will require for its proper installation.

Submit with request all necessary samples and substantiating data to prove equal quality and performance to that which is specified. Clearly mark manufacturer’s literature to indicate equality in performance. Differences in quality of materials and construction shall be indicated.

Fill in blanks below:

A. Does the substitution affect dimensions shown on Drawings:
   Yes _______  No _________  If yes, clearly indicate changes.  _______________

B. Will the undersigned pay for changes to the building design, including engineering and detailing costs caused by the requested substitution:  __________

C. What effect does the substitution have on other trades:  ________________
D. What effect does substitution have on applicable code requirements? ________
__________________________________________________________________________

E. Differences between proposed substitution and specified item: ______________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

F. Manufacturer’s guarantee of the proposed and specified items are:

________ Same ____________ Different (explain) ________________
__________________________________________________________________________

CERTIFICATION OF EQUAL PERFORMANCE AND ASSUMPTION OF LIABILITY FOR EQUAL PERFORMANCE

Submitted by:

Signature
Title

Firm

Address

Telephone
Date

Signature must be by person having authority to legally bind his firm to the above terms. Failure to provide legally binding signature will result in retraction of approval.

END OF SECTION
SECTION 01 70 00
EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES
A. Examination, preparation, and general installation procedures.
B. Requirements for alterations work, including selective demolition, except removal, disposal, and/or remediation of hazardous materials and toxic substances.
C. Pre-installation meetings.
D. Cutting and patching.
E. Surveying for laying out the work.
F. Cleaning and protection.
G. Closeout procedures, except payment procedures.

1.02 RELATED REQUIREMENTS
A. Section 01 10 00 - Summary: Limitations on working on the site; work sequence; identification of salvaged and relocated materials.
B. Section 01 30 00 - Administrative Requirements: Submittals procedures.
C. Section 01 40 00 - Quality Requirements: Testing and inspection procedures.
D. Section 01 50 00 - Temporary Facilities and Controls: Temporary exterior enclosures.
E. Section 01 78 00 - Closeout Submittals: Project record documents, operation and maintenance data, warranties.

1.03 REFERENCE STANDARDS

1.04 SUBMITTALS
A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
B. Survey work: Submit name, address, and telephone number of Surveyor before starting survey work.
   1. On request, submit documentation verifying accuracy of survey work.
   2. Submit a copy of site drawing signed by the Land Surveyor, that the elevations and locations of the work are in conformance with Contract Documents.
   3. Submit surveys and survey logs for the project record.
C. Cutting and Patching: Submit written request in advance of cutting or alteration that affects:
   1. Structural integrity of any element of Project.
   2. Integrity of weather exposed or moisture resistant element.
   3. Efficiency, maintenance, or safety of any operational element.
   5. Work of Owner or separate Contractor.
   6. Include in request:
      a. Identification of Project.
      b. Location and description of affected work.
      c. Necessity for cutting or alteration.
      d. Description of proposed work and products to be used.
      e. Alternatives to cutting and patching.
      f. Effect on work of Owner or separate Contractor.
      g. Written permission of affected separate Contractor.
      h. Date and time work will be executed.
D. Project Record Documents: Accurately record actual locations of capped and active utilities.
1.05 QUALIFICATIONS
A. For survey work, employ a land surveyor registered in Wyoming and acceptable to Architect. Submit evidence of Surveyor's Errors and Omissions insurance coverage in the form of an Insurance Certificate.

1.06 PROJECT CONDITIONS
A. Use of explosives is not permitted.
B. Grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.
C. Protect site from puddling or running water. Provide water barriers as required to protect site from soil erosion.
D. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere and over adjacent property.
E. Erosion and Sediment Control: Plan and execute work by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas. Prevent erosion and sedimentation.
   1. Minimize amount of bare soil exposed at one time.
   2. Provide temporary measures such as berms, dikes, and drains, to prevent water flow.
   3. Construct fill and waste areas by selective placement to avoid erosive surface silts or clays.
   4. Periodically inspect earthwork to detect evidence of erosion and sedimentation; promptly apply corrective measures.
F. Pollution Control: Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations. Comply with federal, state, and local regulations.

1.07 COORDINATION
A. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements.
B. Notify affected utility companies and comply with their requirements.
C. Verify that utility requirements and characteristics of new operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
D. Coordinate space requirements, supports, and installation of electrical work that are indicated diagrammatically on Drawings. Follow routing shown for conduit, as closely as practicable. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
E. In exposed areas except as otherwise indicated, conceal conduit and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
F. Coordinate completion and clean-up of work of separate sections.

PART 2 PRODUCTS
2.01 PATCHING MATERIALS
A. New Materials: As specified in product sections; match existing products and work for patching and extending work.
B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.
C. Product Substitution: For any proposed change in materials, submit request for substitution described in Section 01 60 00.
PART 3 EXECUTION

3.01 EXAMINATION
A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.
B. Examine and verify specific conditions described in individual specification sections.
C. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or mis-fabrication.
D. Verify that utility services are available, of the correct characteristics, and in the correct locations.
E. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

3.02 PREPARATION
A. Clean substrate surfaces prior to applying next material or substance.
B. Seal cracks or openings of substrate prior to applying next material or substance.
C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

3.03 LAYING OUT THE WORK
A. Verify locations of survey control points prior to starting work.
B. Promptly notify Architect of any discrepancies discovered.
C. Protect survey control points prior to starting site work; preserve permanent reference points during construction.
D. Promptly report to Architect the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.
E. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to Architect.
F. Utilize recognized engineering survey practices.
G. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:
   1. Site improvements including pavements; stakes for grading, fill and topsoil placement; utility locations, slopes, and invert elevations.
H. Periodically verify layouts by same means.
I. Maintain a complete and accurate log of control and survey work as it progresses.

3.04 GENERAL INSTALLATION REQUIREMENTS
A. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.
B. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.
C. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.
D. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.
E. Make neat transitions between different surfaces, maintaining texture and appearance.

3.05 ALTERATIONS
A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
   1. Verify that construction and utility arrangements are as shown.
2. Report discrepancies to Architect before disturbing existing installation.
3. Beginning of alterations work constitutes acceptance of existing conditions.

B. Remove existing work as indicated and as required to accomplish new work.
   1. Remove items indicated on drawings.
   2. Relocate items indicated on drawings.

C. Protect existing work to remain.
   1. Prevent movement of structure; provide shoring and bracing if necessary.
   2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
   3. Repair adjacent construction and finishes damaged during removal work.

D. Comply with all other applicable requirements of this section.

3.07 CUTTING AND PATCHING
A. Whenever possible, execute the work by methods that avoid cutting or patching.
B. See Alterations article above for additional requirements.
C. Perform whatever cutting and patching is necessary to:
   1. Complete the work.
   2. Fit products together to integrate with other work.
   3. Match work that has been cut to adjacent work.
   4. Repair areas adjacent to cuts to required condition.
   5. Repair new work damaged by subsequent work.
   6. Remove and replace defective and non-conforming work.
D. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.
E. Employ skilled and experienced installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.
F. Cut rigid materials using masonry saw or core drill.
G. Restore work with new products in accordance with requirements of Contract Documents.
H. Fit work tight to pipes, conduit, and other penetrations through surfaces.
I. Patching:
   1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
   2. Match color, texture, and appearance.
   3. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.

3.08 PROGRESS CLEANING
A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
B. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.

3.09 PROTECTION OF INSTALLED WORK
A. Protect installed work from damage by construction operations.
B. Provide special protection where specified in individual specification sections.
C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
D. Remove protective coverings when no longer needed; reuse or recycle plastic coverings if possible.
3.10 FINAL CLEANING
   A. Use cleaning materials that are nonhazardous.
   B. Clean site; sweep paved areas, rake clean landscaped surfaces.
   C. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.

3.11 CLOSEOUT PROCEDURES
   A. Make submittals that are required by governing or other authorities.
      1. Provide copies to Architect.
   B. Notify Architect when work is considered ready for Substantial Completion.
   C. Submit written certification that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Architect's review.
   D. Correct items of work listed in punch list and any attachments to the executed Certificates of Substantial Completion.
   E. Notify Architect when work is considered finally complete.
   F. Complete items of work determined by Architect's final inspection.

END OF SECTION
SECTION 03 30 00
CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Concrete formwork.
B. Concrete foundation walls.
C. Concrete reinforcement.
D. Miscellaneous concrete elements.
E. Concrete curing.

1.02 RELATED REQUIREMENTS

A. Section 07 90 05 - Joint Sealers: Sealants for saw cut joints and isolation joints in slabs.
B. Division 26: Electrical items for casting into concrete.

1.03 REFERENCE STANDARDS

A. ACI 117 - Standard Specifications for Tolerances for Concrete Construction and Materials; American Concrete Institute International; 2010.
B. ACI 301 - Specifications for Structural Concrete; American Concrete Institute International; 2010.
C. ACI 304R - Guide for Measuring, Mixing, Transporting, and Placing Concrete; American Concrete Institute International; 2000.
D. ACI 305R - Hot Weather Concreting; American Concrete Institute International; 2010.
E. ACI 306R - Cold Weather Concreting; American Concrete Institute International; 2010.
F. ACI 308R - Guide to Curing Concrete; American Concrete Institute International; 2001 (Reapproved 2008).
G. ACI 318 - Building Code Requirements for Structural Concrete and Commentary; American Concrete Institute International; 2011.
H. ACI 347 - Guide to Formwork for Concrete; American Concrete Institute International; 2004.

1.04 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
B. Product Data: Submit manufacturers' data on manufactured products showing compliance with specified requirements and installation instructions.
C. Mix Design: Submit proposed concrete mix design as indicated on Drawings.
D. Manufacturer's Installation Instructions: For concrete accessories, indicate installation procedures and interface required with adjacent construction.
E. Project Record Documents: Accurately record actual locations of embedded utilities and components that will be concealed from view upon completion of concrete work.
F. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

1.05 QUALITY ASSURANCE
A. Perform work of this section in accordance with ACI 301 and ACI 318.
B. Follow recommendations of ACI 305R when concreting during hot weather.
C. Follow recommendations of ACI 306R when concreting during cold weather.

1.06 WARRANTY
A. See Section 01 78 00 - Closeout Submittals, for additional warranty requirements.

PART 2 PRODUCTS

2.01 FORMWORK
A. Formwork Design and Construction: Comply with guidelines of ACI 347 to provide formwork that will produce concrete complying with tolerances of ACI 117.
B. Form Materials: Contractor's choice of standard products with sufficient strength to withstand hydrostatic head without distortion in excess of permitted tolerances.
   1. Form Facing for Exposed Finish Concrete: Contractor's choice of materials that will provide smooth, stain-free final appearance.
   2. Earth Cuts: Do not use earth cuts as forms for vertical surfaces. Natural rock formations that maintain a stable vertical edge may be used as side forms.
   3. Form Coating: Release agent that will not adversely affect concrete or interfere with application of coatings.
   4. Form Ties: Cone snap type that will leave no metal within 1-1/2 inches of concrete surface.

2.02 REINFORCEMENT
A. Reinforcing Steel: As indicated on Drawings.

2.03 CONCRETE MATERIALS
A. Concrete Materials: As indicated on Drawings.

2.04 ADMIXTURES
A. Do not use chemicals that will result in soluble chloride ions in excess of 0.1 percent by weight of cement.
C. High Range Water Reducing and Retarding Admixture: ASTM C494/C494M Type G.
D. High Range Water Reducing Admixture: ASTM C494/C494M Type F.
E. Water Reducing and Retarding Admixture: ASTM C494/C494M Type D.
F. Retarding Admixture: ASTM C494/C494M Type B.
G. Water Reducing Admixture: ASTM C494/C494M Type A.

2.05 ACCESSORY MATERIALS
A. Non-Shrink Cementitious Grout: Premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents.
   1. Minimum Compressive Strength at 48 Hours, ASTM C109/C109M: 2,400 pounds per square inch.

2.06 CONCRETE MIX DESIGN
A. Concrete Mix Design: As indicated on Drawings.

2.07 MIXING
A. Transit Mixers: Comply with ASTM C94/C94M and furnish batch ticket information.
PART 3 EXECUTION

3.01 EXAMINATION
A. Verify lines, levels, and dimensions before proceeding with work of this section.

3.02 PREPARATION
A. Formwork: Comply with requirements of ACI 301. Design and fabricate forms to support all applied loads until concrete is cured, and for easy removal without damage to concrete.
B. Verify that forms are clean and free of rust before applying release agent.
C. Coordinate placement of embedded items with erection of concrete formwork and placement of form accessories.

3.03 INSTALLING REINFORCEMENT AND OTHER EMBEDDED ITEMS
A. Comply with requirements of ACI 301. Clean reinforcement of loose rust and mill scale, and accurately position, support, and secure in place to achieve not less than minimum concrete coverage required for protection.
B. Verify that anchors, seats, plates, reinforcement and other items to be cast into concrete are accurately placed, positioned securely, and will not interfere with concrete placement.

3.04 PLACING CONCRETE
A. Place concrete in accordance with ACI 304R.
B. Notify Architect not less than 48 hours prior to commencement of placement operations.
C. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.
D. Ensure reinforcement, inserts, embedded parts, and formed construction joint devices will not be disturbed during concrete placement.
E. Place concrete continuously without construction (cold) joints wherever possible; where construction joints are necessary, before next placement prepare joint surface by removing laitance and exposing the sand and sound surface mortar, by sandblasting or high-pressure water jetting.

3.05 CONCRETE FINISHING
A. Repair surface defects, including tie holes, immediately after removing formwork.
B. Unexposed Form Finish: Rub down or chip off fins or other raised areas 1/4 inch or more in height.
C. Exposed Form Finish: Rub down or chip off and smooth fins or other raised areas 1/4 inch or more in height. Provide finish as follows:

3.06 CURING AND PROTECTION
A. Comply with requirements of ACI 308R. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.
B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.
   1. Normal concrete: Not less than 7 days.

3.07 FIELD QUALITY CONTROL
A. An independent testing agency will perform field quality control tests, as specified in Section 01 40 00.
B. Provide free access to concrete operations at project site and cooperate with appointed firm.
C. Submit proposed mix design of each class of concrete to inspection and testing firm for review prior to commencement of concrete operations.
D. Tests of concrete and concrete materials may be performed at any time to ensure conformance with specified requirements.
E. Compressive Strength Tests: ASTM C39/C39M. For each test, mold and cure seven concrete test cylinders. Obtain test samples for every 20 cu yd or less of each class of concrete placed.

F. Take one additional test cylinder during cold weather concreting, cured on job site under same conditions as concrete it represents.

G. Perform one slump test for each set of test cylinders taken, following procedures of ASTM C143/C143M.

3.08 DEFECTIVE CONCRETE

A. Test Results: The testing agency shall report test results in writing to Architect and Contractor within 24 hours of test.

B. Defective Concrete: Concrete not conforming to required lines, details, dimensions, tolerances or specified requirements.

C. Repair or replacement of defective concrete will be determined by the Architect. The cost of additional testing shall be borne by Contractor when defective concrete is identified.

D. Do not patch, fill, touch-up, repair, or replace exposed concrete except upon express direction of Architect for each individual area.

END OF SECTION
SECTION 03 45 00
PRECAST ARCHITECTURAL CONCRETE

PART 1 GENERAL

1.01 SECTION INCLUDES
A. Architectural precast concrete wall and pier caps and accent band trim.
B. Supports, anchors, and attachments.

1.02 RELATED REQUIREMENTS
A. Section 03 30 00 - Cast-in-Place Concrete: Foundations and admixtures.
B. Section 07 90 05 - Joint Sealers: Perimeter joints with sealant and backing.

1.03 REFERENCE STANDARDS
A. ACI 318 - Building Code Requirements for Structural Concrete and Commentary; American Concrete Institute International; 2011.
J. PCI MNL-117 - Manual for Quality Control for Plants and Production of Architectural Precast Concrete Products; PreCast/Prestressed Concrete Institute; 2007.
L. PCI MNL-122 - Architectural Precast Concrete; PreCast/Prestressed Concrete Institute; 2007, Third Edition.
M. PCI MNL-123 - Design and Typical Details of Connections for Precast and Prestressed Concrete; PreCast/Prestressed Concrete Institute; 1988, Second Edition.
N. PCI MNL-135 - Tolerance Manual for Precast and Prestressed Concrete Construction; PreCast/Prestressed Concrete Institute; 2000.

1.04 SUBMITTALS
A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
B. Product Data: Manufacturer's information on accessory products, including pigments, admixtures, inserts, plates, etc.
C. Shop Drawings: Indicate layout, unit locations, configuration, unit identification marks, reinforcement, connection details, support items, location of lifting devices, dimensions, openings, and relationship to adjacent materials.
   1. Include details of mix designs.
D. Samples: Submit four precast concrete cap samples, 8 x 8 inch in size, illustrating surface finish, color and texture. Color to match existing pre-cast caps at the main LCCC gateway stone walls.

E. Fabricator's Qualification Statement: Provide documentation showing precast concrete fabricator is accredited under IAS AC157.

F. Fabricator qualifications.

G. Maintenance Data: Indicate surface cleaning instructions.

1.05 QUALITY ASSURANCE

A. Design Engineer Qualifications: Design precast concrete units under direct supervision of a Professional Structural Engineer experienced in design of precast concrete and licensed in Wyoming.

B. Fabricator Qualifications:
   1. Firm having at least ten years of documented experience in production of precast concrete of the type required.
   2. Plant to be certified under one of the following programs:
      a. Plant certified under Precast/Prestressed Concrete Institute Plant Certification Program; product group and category C1 or C1A - Non-Prestressed Architectural Precast Concrete.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Handling: Lift and support precast units only from support points.

B. Blocking and Lateral Support During Transport and Storage: Use materials that are clean, non-staining, and non-harmful to exposed surfaces. Provide temporary lateral support to prevent bowing, warping, and cracking.

C. Protect units to prevent staining, chipping, or spalling of concrete.

D. Mark units with date of production in location that will be concealed after installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Architectural Precast Concrete:
   1. Any manufacturer holding one of the PCI Plant Certifications specified above, for the types of products specified; see www.pci.org.
   2. Substitutions: See Section 01 60 00 - Product Requirements.

2.02 PRECAST UNITS

A. Precast Architectural Concrete Units: Comply with PCI MNL-120, PCI MNL-122, PCI MNL-123, PCI MNL-135, and ACI 318.
   1. Concrete Face Mix: Minimum 5000 psi, 28 day strength, air entrained to 5 to 7 percent; comply with ACI 301.
   2. Design Loads: Static loads, anticipated dynamic loading, including positive and negative wind loads, thermal movement loads, and erection forces as defined by applicable code.
   3. Calculate structural properties of units in accordance with ACI 318.
   4. Accommodate construction tolerances and deflection of structural members.
   5. Provide connections that accommodate thermal movement and adjust to misalignment of structure without unit distortion or damage.

B. Finish Type A: Ensure exposed-to-view finish surfaces of precast units are uniform in color and appearance, with a light acid-etched finish.

2.03 REINFORCEMENT

A. Reinforcing Steel: ASTM A615/A615M Grade 40 (280).
   1. Deformed billet-steel bars.
B. Steel Welded Wire Reinforcement: ASTM A185/A185M, plain type.

2.04 CONCRETE MATERIALS
A. Cement: ASTM C150, Type I - Normal Portland type.
   1. Concentration: Base dosage rates on weight of Portland cement, fly ash, silica fume, and other cementitious materials but not aggregate or sand.
   2. Color(s): to match existing precast caps at the existing LCCC main entry monuments and landscape walls. Pre-cast Samples (size:10" x 10") to be provided for approval by the Architect and Owner’s Representative.
   3. Manufacturers:
D. Admixtures: Air entrainment as specified in Section 03 30 00.
E. Grout:
   1. Non-shrink, non-metallic, minimum 10,000 psi, 28 day strength.

2.05 SUPPORT DEVICES
A. Connecting and Support Devices: ASTM A36/A36M steel; hot-dip galvanized in accordance with ASTM A153/A153M.
   1. Clean surfaces of rust, scale, grease, and foreign matter.
   2. Galvanize after fabrication in accordance with requirements of ASTM A123/A123M.

2.06 FABRICATION
A. Fabricate in conformance with PCI MNL-117 and PCI MNL-135.
B. Maintain plant records and quality control program during production of precast units. Make records available upon request.
C. Use rigid molds, constructed to maintain precast unit uniform in shape, size, and finish.
D. Maintain consistent quality during manufacture.
E. Cure units to develop concrete quality, and to minimize appearance blemishes such as non-uniformity, staining, or surface cracking.
F. Minor patching in plant is acceptable, providing structural adequacy and appearance of units is not impaired.
G. Provide continuous drip on underside of the concrete cap edges.

2.07 FABRICATION TOLERANCES
A. Conform to PCI MNL-117 and PCI MNL-135.

PART 3 EXECUTION
3.01 EXAMINATION
A. Verify that wall structure, anchors, devices, and openings are ready to receive work of this section.

3.02 PREPARATION
A. Provide for erection procedures and induced loads during erection. Maintain temporary bracing in place until final support is provided.

3.03 ERECTION
A. Erect units without damage to shape or finish. Replace or repair damaged panels.
B. Erect units level and plumb within allowable tolerances.
C. Fasten units in place with mechanical connections.
D. Exposed Joint Dimension: 1/2 inch. Adjust units so that joint dimensions are within tolerances.

3.04 TOLERANCES
   A. Erect members level and plumb within allowable tolerances. Conform to PCI MNL-135.

   END OF SECTION
PART 1 GENERAL

1.01 SECTION INCLUDES
   A. Sandstone stone veneer at exterior monuments.
   B. Metal anchors and accessories.
   C. Setting mortar and pointing mortar.

1.02 RELATED REQUIREMENTS
   A. Section 04 05 11 - Masonry Mortaring and Grouting: Setting and pointing mortar.

1.03 REFERENCE STANDARDS
   A. ACI 530/530.1/ERTA - Building Code Requirements and Specification for Masonry Structures and Related Commentaries; American Concrete Institute International; 2011.
   B. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2010.

1.04 ADMINISTRATIVE REQUIREMENTS
   A. Preinstallation Meeting: Convene one week before starting work of this section.

1.05 SUBMITTALS
   A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
   B. Product Data: Provide data on stone units, mortar, and accessories.
   C. Samples: Submit four stone samples illustrating minimum and maximum stone sizes, color range, texture, and markings.
   D. Samples: Submit mortar color samples.

1.06 QUALITY ASSURANCE
   A. Stone Supplier Qualifications: Company specializing in supplying cut stone with minimum ten years of documented experience.
   B. Installer Qualifications: Company specializing in performing work of the type required by this section, with minimum ten years of documented experience.

1.07 MOCK-UP
   A. Construct stone wall mock-up, six feet long by four feet high; include stone anchor accessories, corner condition, and cast concrete cap in mock-up.
   B. Locate where directed.
   C. Mock-up may remain as part of the Work.

1.08 DELIVERY, STORAGE, AND HANDLING
   A. Protect stone from discoloration during storage on site.
   B. Provide ventilation to prevent condensation from forming on stone.

1.09 FIELD CONDITIONS
   A. Cold Weather Requirements: Comply with requirements of ACI 530/530.1/ERTA or applicable building code, whichever is more stringent.

PART 2 PRODUCTS

2.01 MANUFACTURERS
   A. Stone Quarry/Suppliers:
1. Loukonen Brothers Stone, Longmont, CO
2. Arkins Park Stone, Loveland, CO - www.arkinsparkstone.com
2. Substitutions: See Section 01 60 00 - Product Requirements

B. Samples for Approval: Sandstone rough cut stone to match in color and character the existing stone used on the monuments and landscape walls at the LCCC campus main entries. Stone samples to be approved for use by Architect and Owner’s Representative.

C. Stone Masonry Reinforcement and Accessories
3. Substitutions: See Section 01 60 00 - Product Requirements.

2.02 MORTAR
A. Setting Mortar: ASTM C270, Type S, using the Proportion Method as specified in Section 04 05 11.
1. Products:
   b. Substitutions: See Section 01 60 00 - Product Requirements.
B. Pointing Mortar: Type N as specified in Section 04 05 11, and using the Proportion Method in ASTM C270.

2.03 ACCESSORIES
A. Anchors in Direct Contact with Stone: ASTM A666, Type 304, stainless steel, of sizes and configurations required for support of stone and applicable superimposed loads.
B. Setting Buttons and Shims: Lead.
C. Cleaning Solution: Type that will not harm stone, joint materials, or adjacent surfaces.

2.04 STONE FABRICATION
A. Nominal Thickness: 4 inch.
B. Pattern and Coursing: Random Broken Course Ashlar to match stonework on campus as selected by Architect.
C. Fabricate for 3/8 inch beds and joints.
D. Bed and Joint Surfaces:
   1. Cut or sawn full square for full thickness of unit.
E. Backs: Rough or split.
F. Form stone corners to irregular joint profile. Clean jagged corners from stone in preparation for setting.
G. Slope exposed top surfaces of stone and horizontal sill surfaces for shedding water.
H. Cut drip slot in bottom surface of work projecting more than 1/2 inch beyond face of veneer. Size slot not less than 3/8 inch wide and 1/4 inch deep for full width of projection.

PART 3 EXECUTION

3.01 EXAMINATION
A. Verify that support work and site conditions are ready to receive work of this section.
B. Verify that items built-in under other sections are properly located and sized.

3.02 PREPARATION
A. Establish lines, levels, and coursing. Protect from disturbance.
B. Clean stone prior to erection. Do not use wire brushes or implements that mark or damage exposed surfaces.
C. Clean sawn surfaces of rust stains and iron particles.

3.03 INSTALLATION
A. Cut stone at site to produce clean faces.
B. Size stone units to fit dimensions and perimeter conditions.
C. Wet absorptive stone in preparation for placement to minimize moisture suction from mortar.
D. Arrange stone pattern to provide color uniformity and minimize visual variations, and provide a uniform blend of stone unit sizes.
E. Provide setting and pointing mortar in accordance with Section 04 05 11.
   1. If water is lost by evaporation, re-temper mortar only within two hours after mixing.
   2. At ambient air temperature 80 degrees F and above, use mortar within two hours after mixing; at ambient air temperature below 50 degrees F, use mortar within two-and-one-half hours after mixing.
F. Fill dowel holes in stone units with mortar.
G. Arrange stone coursing in ashlar bond with consistent joint width.
H. Set stone in full mortar setting bed to fully support stone over bearing surface. Use setting buttons or shims to maintain correct joint width.

3.04 REINFORCEMENT AND ANCHORAGE
A. Attach wall ties to back-up to bond veneer to back-up at minimum of one for every 2-2/3 sq ft.

3.05 JOINTS
A. Leave the following joints open for sealant:
   1. Head joints in top courses, including copings, parapets, cornices, sills, and steps.
   2. Joints in projecting units.
   3. Joints between rigidly anchored units, including soffits, panels, and column covers.
   4. Joints labeled "expansion joint".
B. Rake out mortar joints 5/8 to 3/4 inch and brush joints clean to accommodate pointing mortar. Fill joints with pointing mortar.
C. Pack mortar into joints and work into voids. Neatly tool surface to concave joint.
D. At joints to be sealed, clean mortar out of joint before it sets. Brush joints clean.

3.06 CLEANING
A. Remove excess mortar as work progresses, and upon completion of work.
B. Clean soiled surfaces with cleaning solution.
C. Use non-metallic tools in cleaning operations.

3.07 PROTECTION
A. During temporary storage on site, at the end of working day, and during rainy weather, cover stone work exposed to weather with non-staining waterproof coverings, securely anchored.

END OF SECTION
SECTION 10 14 00
SIGNAGE

PART 1 GENERAL

1.01 SECTION INCLUDES
   A. Cast aluminum campus logo elements.

1.02 SUBMITTALS
   A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
   B. Product Data: Manufacturer's printed product literature for each type of sign, indicating sign styles, font, foreground and background colors, locations, overall dimensions of each sign.
   C. Samples: Submit two samples of each type of sign, of size similar to that required for project, illustrating sign style, font, and method of attachment.
   D. Selection Samples: Where colors are not specified, submit two sets of color selection charts or chips.
   E. Verification Samples: Submit samples showing colors specified.
   F. Manufacturer's Installation Instructions: Include installation templates and attachment devices.

1.03 QUALITY ASSURANCE
   A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum ten years of documented experience.

1.04 DELIVERY, STORAGE, AND HANDLING
   A. Package signs as required to prevent damage before installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS
   A. Signs: Cut Aluminum Logo
      4. Schlosser Signs, Inc. Loveland CO. (877)-586-1321
      4. Substitutions: See Section 01 60 00 - Product Requirements.

2.02 SIGNAGE APPLICATIONS
   A. Site Entrance Identification Signs: Campus Logo

2.03 ALUMINUM CAMPUS LOGO
   A. Aluminum Logo - Artwork to be provided by Architect.
      1. Metals: Aluminum.
      2. Finish: Matthews Paint, color as designated on the drawings.
      3. Cut Aluminum Thickness: ¼”. Note: cut out for image of eagle required.
      4. Mounting: Pin Mounted as indicated on Drawings; Coordinate pin depth with stone substrate. Campus Logo is provided in four pieces, all pin mounted.
PART 3 EXECUTION

3.01 EXAMINATION
   A. Verify that substrate surfaces are ready to receive work. Coordinate pin mounting with rough cut stone substrate.

3.02 INSTALLATION
   A. Install in accordance with manufacturer’s instructions.
   B. Install neatly, with horizontal edges level.
   C. Locate signs where indicated on drawings.
   D. Coordinate installation of cast metal logo for rough cut stone substrate surface.
   E. Protect from damage until Substantial Completion; repair or replace damage items.

END OF SECTION
SECTION 32 01 90
TREE AND SHRUB PRESERVATION

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:
   1. Installation of Fencing
   2. Tree Removals.
   3. Protection of Trees to Remain.

B. Related Sections:
   1. Section 31 10 00 Site Clearing
   2. Section 31 30 00 Earthwork
   3. Section 01 50 00 Temporary Facilities and Controls
   4. Section 32 92 00 Turf and Grasses
   5. Section 32 93 00 Planting

1.02 REFERENCES

C. National Arborist Association (NAA) Book of Standards, most recent edition
D. ANSI Z 133 1 Safety Requirements for Pruning, Trimming, Repairing, Maintaining and Removing Trees, and for Cutting Brush.
E. ANSI A300 (Part 5) – 2012 Management of Trees and Shrubs During Site Planning, Site Development, and Construction.

1.03 DEFINITIONS

A. Tree Protection Fencing: Temporary fencing installed prior to site preparation and demolition which protects a group of trees or shrubs.
B. Root Pruning: Physical cutting of plant roots to minimize root damage and promote healing.
C. Construction Branch Pruning: Physical cutting of any branch which interferes with construction.

1.04 SUBMITTALS

A. Comply with submittal Section. All submittals shall be accepted by the Architect in writing before Work commences.
B. Schedule: Submit construction schedule which includes time frame for work near existing plant material. Provide transplanting and tree removal schedule including tree transplants and locations. Obtain approval by Architect prior to beginning of transplanting work and construction near restricted area.
C. Work Methods: Submit proposed methods and schedule for effecting tree and plant protection for approval including proposed methods, materials, and schedule for root pruning, construction pruning, aeration and subsequent tree fertilization. Mark plan location of root pruning with paint for approval by Architect. Any root pruning which is required due to construction work adjacent to existing trees and shrubs designated to remain shall occur any time ground can be worked except when tree or shrubs are in leaf. Root pruning when tree or shrubs are in leaf may occur only with approval by Architect.

1.05 QUALITY ASSURANCE

A. Comply with Division One
B. Qualifications: Arborist: Company having adequate capacity and facilities to meet the specified requirements. All tree pruning and cleaning shall be performed by a landscape contractor with a minimum 5 years documented experience. Evidence to this effect shall be provided by the supplier if required by the Architect.

C. Regulatory Requirements: City permits are necessary for pruning or removal of all trees in the right-of-way.

D. Pre-Installation Conference
   1. Conduct pre-installation conference prior to construction.
   2. Attendance required by: Owner, Architect, Contractors, Manufacturer(s)/Supplier(s), other parties who are involved.

1.06 PROJECT/SITE CONDITIONS
A. All plant materials to remain to be tagged by Contractor for approval. Contractor to notify Architect seven (7) days before needing approval.
B. Maintain all plant materials within tree protection areas. Designated tree protection areas of trees, shrubs, and grasses are to remain untouched and unharmed.
C. Construction activities, including stockpiling, in tree protection areas are prohibited.
D. Tree arborist shall determine and document value of each tree or other plant materials within the limits of work line that is designated to remain. Contractor shall reimburse client for the value of any of these trees or other plant materials that are lost or damaged during construction.

1.07 MAINTENANCE
A. Maintenance Services: Performed by a landscape contractor for the first year after final completion of all site construction.
B. Maintenance Period: Begin maintenance immediately upon start of construction. Continue maintenance in accordance with Section 32 93 50.
C. Maintenance to Include:
   1. Quarterly review and monitoring of tree conditions.
   2. Maintaining guying and lightening protection. Repair or replace when required.
   3. Water at a sufficient frequency to saturate root system and keep soil moist.
   4. Pruning, including removal of dead of broken branches, and treatment of pruned areas.
   5. Disease Control.
D. Protection: In accordance with paragraph 3.03 Preparation.
E. Root Zone Fertilization: Root zone fertilize all trees affected by construction. The first root zone fertilization shall occur within 6 months after completion of site construction and the second within 12 months. Use a liquid application with an 18 inch soil probe. Fertilization mix shall be submitted to the Architect for acceptance prior to application.
F. Pesticides: Apply pesticides, with permission of owner, in accordance with manufacturer's instructions. Remedy damage resulting from improper use of pesticides.
G. Maintenance Reports: Provide maintenance report including date and detailed summary of work completed on site, to the Architect after each maintenance visit.

PART 2 - PRODUCTS
2.01 MATERIALS
A. Fencing: Galvanized chain link fencing, 6ft. high
   1. Tree protection fencing is the property of the Contractor
   2. Gates at tree protection areas shall be 6'-0" width min. for maintenance vehicles and be 6'-0" ht. galvanized chain link fence. Space 10" o.c. maximum.
B. Fence Posts: 9 ft. galvanized steel posts, driven a minimum of 3 ft. into the ground.
C. Soil Amendments/Mulch
1. Organic compost: Non-sludge Class 1 Compost in compliance with Colorado Department of Public Health and Environment Regulation 64. Refer to Section 32 93 00 for additional information
2. Wood Mulch: Bark Mulch. Refer to Section 32 94 00 for additional information.

PART 3 - EXECUTION

3.01 TREE AND PLANT PROTECTION

A. General: Preserve and protect existing trees and plants at site that are designated to remain, and those adjacent to site.

B. New sidewalks, paving or asphalt within the drip line of the tree must allow breathing space for tree roots. The following should be used as a guideline: For trees up to 4 inches in trunk caliper, 25 square feet of porous area is needed. For each additional 2 inches of tree caliper, 10 more square feet are needed.

C. Where grade change is required, the same area must be provided either by construction of a drywell where the level is to be raised or by building a retaining wall where the level is to be lowered. The grade within the drip line of the tree is not to be changed without Architect approval.

D. Barriers: Provide temporary barriers to height of six feet, around each, or around each group, of trees and plants at drip line.

E. Trimming: Consult with Architect, Landscape Architect and Owner's Representative, and trim agreed on roots and branches that interfere with construction.
   1. Employ qualified tree surgeon to remove, and to treat cuts.
   2. Trim under Architect, Landscape Architect and Owner's Representative's direction.
   3. Do not cut roots greater than 2" in diameter without advance notice to arborist.
   4. Cut close to boles in manner that tree will present balanced appearance.

F. Root Systems: Maintain natural cover of turf around root systems. Replace turf if necessary.

G. Stockpiles: Place stockpiles of topsoil and other excavated material so that they will not slough off onto root systems of existing trees.

H. Contaminants: Dispose of solvents, oils and other materials that may be harmful to plant life in containers and remove from site. Remove and replace contaminated soil with good soil at completion of work.

I. Areas Under Trees: Within drip line of existing trees to remain:
   1. Do not allow vehicular traffic or parking.
   2. Do not store materials or products.
   3. Prevent dumping of refuse or chemically injurious materials or liquids.
   4. Prevent puddling or continuous running water.
   5. Do not leave diesel or gasoline equipment running.

J. Protection: Carefully supervise excavating, grading and filling and subsequent construction operations, to prevent damage to plant materials. Protect against breaking and skimming of roots and skinning and bruising of bark.

3.02 EXAMINATION

A. Verification Of Conditions: Examine areas and conditions under which the Work of this Section will be performed. Report unsatisfactory or questionable conditions to the Architect. Do not proceed with the Work until unsatisfactory conditions have been corrected. Commencement of work implies acceptance of all areas and conditions.

B. Verify all utility locations in the field prior to digging.
3.03 PREPARATION
A. Marking of Construction/Demolition/Tree Preservation Limits: Clearly mark the tree protection fence locations as indicated on the Drawings, and all construction/demolition limits in the field.
B. Mark individual tree root pruning areas with paint.
C. Verify all trees to be protected with Architect. Tag all plant material with appropriate tags noting action to be taken with each plant.
D. Contact and accompany Architect on a joint review of construction/demolition limits, tagging and painting before prior to the installation of the tree protection fencing and start work.
E. Limit of construction is generally defined as the limit of demolition. Contractor to immediately notify Architect if work will occur outside the construction/demolition limits.
F. Contractor to verify limits of existing R.O.W. Contractor to obtain all necessary permits from appropriate jurisdictions prior to commencing activity within the R.O.W.

3.04 INSTALLATION OF FENCING
A. Fencing: Install tree protection fencing prior to start of demolition work and clearing and grubbing operations in accordance with the following:
   1. Following approval of staking, install fencing at the tree protection areas.
   2. No fencing is allowed within three (3) feet outside the drip line of trees.
   3. Install posts 10'-0" o.c. maximum.
   4. Install gates where noted on the plans.

3.05 ROOT PRUNING AND PROTECTION
A. Root Pruning
   1. Prune roots where construction will sever roots.
   2. Only clean cutting methods are acceptable. Root pruning is the physical cutting of tree roots to minimize root damage and promote healing. Unsuitable means for root pruning include trenching, vibrating plow, stump grinder. Any method which tears roots or disturbs the soil beyond the grading limit is unacceptable
   3. Hand trim roots at trench walls. Make clean cuts through roots.
   4. Prune tree roots to a depth no greater than required by construction excavation, by approved means only. All roots shall be pruned by an approved method.
B. Backfill: Close trenches within 24 hours. Backfill root pruning trench with existing soil. Tamp lightly to set soil.
   1. When trench closing is not possible within 24 hours, protect trench side in accordance with this Section.
C. Mulching: Apply wood mulch to a depth of 4 in. to 5 in. at minimum 10 ft. to 15 ft. radius around tree to reduce compaction and increase moisture retention. Soil shall be kept moist in root pruning areas.
D. Root Protection: If tree roots larger than two (2) inches in diameter are encountered with digging or trenching, tunnel under for any improvements if possible. Dig trench by hand only.
   2. Notify Arborist to allow physical inspection of excavation around root zones to determine damage and health of tree. Do not tear the roots out. Removal of two (2) inches or larger diameter roots encountered during construction is not allowed without permission of Arborist.
   3. Upon approval by Architect wrap cut roots 2” and larger with burlap to prevent scarring or excessive drying.
3.06 CONSTRUCTION BRANCH PRUNING
A. Prune any branches of trees to be preserved which interfere with construction only at the direction of the Architect. Approval of all proposed pruning is required prior to start of work. Pruning is an incidental pay item associated with the transplanting of existing trees, the planting of new trees, and the care of existing trees to remain. Payments for such incidental items shall be drawn from the project budget.
B. Remove any branches which are weak or dead.
C. Any pruning included as part of the project shall be done by a licensed tree company and in accordance with good pruning practices as approved by the Architect. Pruning shall maintain balance, form and function of tree.

3.07 TEMPORARY TREE GUYING
A. Upon review of on-site root pruning and construction grading limits, the Architect shall determine whether the existing trees designated to remain should be temporarily guyed.
B. Complete tree guying using materials and techniques designated by the Architect in accordance with Section 32 94 00 and complete in a timely manner.

3.08 AERATION
A. If areas inside the restricted area become compacted as determined by the Architect, aerate to a 20 inch depth using an aeration "grow gun," avoiding damage to surface absorbing feeder roots.
B. Inject filler material to hold aeration fractures open.

3.09 WATERING
A. Trees: Water per Colorado State University Cooperative Extension Caring for Trees in a Dry Climate.
B. Apply approximately 10 gallons of water per inch of trunk diameter for each watering. Measure trunk diameter at knee height. General formula: Tree Diameter x 5 minutes = Total Watering Time.
C. Trees should be watered three times a month, April through September. Winter water as needed.
D. Using deep root water, work the needle into the soil at an angle to a depth of 8 inches. Use the needle at low to moderate water pressure. Water the area under dripline in at least 12 sites. For new trees and those planted within five years, place the needle at least three feet from the trunk. Water a minimum of four sites around young trees.

3.10 EXCAVATION INSULATION
A. Provide mitigation from moisture and temperature fluctuations by pinning 3 layers of burlap onto the entire face of excavations exposed for more than 24 hours.
B. Wet burlap insulation immediately following installation.
C. Keep moist for the entire period the excavation remains open.
D. Remove insulation prior to backfilling.

3.11 CHEMICALS, FERTILIZATION AND INSECT SPRAYING
A. No chemicals shall be applied or used around or near existing trees.
B. No fertilizers, insect sprays or other chemicals shall be applied before or during root or branch pruning process.

3.12 TREE REMOVAL
A. General: Tag trees indicated to be removed for approval by Architect prior to removal.
B. Removal: Include new and old stumps of trees and their roots. Fell trees in manner not to injure standing trees, plants and other improvements to remain. If impossible to remove roots, grind stumps to 12” below finish grade. Fill stump removal areas with existing soil. Chemicals which will harm future landscape above stumps may not be applied to aid in stump removal.

C. Disposal: Dispose of all removals from the site at an approved disposal or recycling facility. Contractor may grind tree removals to be used for mulching purposes if mulch is approved by the Architect. Removals or mulch become the property of the Contractor.

D. Protection: Contractor responsible for protection of all trees designated to remain or transplanted during removal procedures.

3.13 GRADING AT TREE PROTECTION AREAS
A. All grading within protected areas shall proceed only after review and approval by the Architect.

B. All fill within protected areas must be approved by the Architect. Tamping of fill earth shall be allowed; compaction of fill earth shall not be allowed. No "cutting" of grades in root area shall be allowed.

3.14 FIELD QUALITY CONTROL/DAMAGE PENALTIES
A. Loss of any of these trees to be protected due to Contractor neglect or improper construction activities will result in liquidated damages for the assessed value of the tree as determined by the a licensed arborist. Damage to a portion of these trees will be assessed by the arborist and a portion of the liquidated damages will be assessed to the Contractor. A list of tree values for the project will be on file in the Architect's office. Any damaged tree not on this list shall be evaluated by the Architect as necessary to comply with this penalty.

B. A fine of $1,000 will be levied against the Contractor for each incident of construction (including construction traffic) inside tree protection areas.

C. Trees or roots visibly damaged will cause the Owner to withhold from the Contractor an assessed amount conforming to the requirements stipulated above, for a period of two years. After that period the impact of the damage to any tree will be assessed by the Architect.

D. If any trees or shrubs designated to be saved are damaged and replacement is required, a number and diameter of trees or shrubs of the same species and variety, as specified by the Architect, shall be furnished and planted by the Contractor. The total inch diameter of the replacement trees or shrubs shall equal the diameter of the tree or shrub to be replaced as measured by The Guide for Plant Appraisal, 9th Edition, by Council of Tree and Landscape Appraisers, published by the International Society of Arboriculture. The Contractor shall not be liable for any loss or damage which occurs while the Contractor is complying with instructions given by the Architect working on the Project.

3.15 ADJUSTING
A. Tree Protection Area Access: When construction traffic is unavoidable as concurred be the Contractor and Architect the following procedure shall be followed:
   1. Obtain approval from the Architect for Tree Protection Area access.
   2. Install protective fencing by hand to delineate the construction corridor. Fencing location must be approved on site by the Architect.
   3. Install a 12” layer of wood chips overlaid with continuous 3/4" plywood sheets on the existing grade for the entire area of the traffic route to allay rutting and slightly reduce soil compaction.
   4. Remove all materials and return area to preconstruction condition within one week of the work.

B. Excavation Insulation: If in the Contractor's opinion, climate conditions do not necessitate the installation of burlap insulation at an excavation, he may submit to the Architect a
written request to omit the burlap insulation. Submit request to the Architect 24 hours prior to excavation

3.16 CLEANING
   A. Removal Of Protection: Except as otherwise indicated or requested by Architect, temporary protection devices and facilities installed during course of the work shall be removed only after all work which may injure or damage trees and plants is completed.
   B. Removal: Remove all excess material during construction period and haul off-site.
   C. Repair: Repair surface damage caused by fence posts. Restore to match surrounding conditions.

3.17 PROTECTION
   A. Protect planting areas and plants at all times against damage of any kind for the duration of the maintenance. If any plants become damaged of injured, they shall be treated or replaced as directed by the Architect at no additional cost to the Owner. The contractor shall not be responsible for acts of vandalism or acts of God during the maintenance period.
   B. Protect tree roots in accordance with paragraph 3.05 this Section.
   C. Branch Protection: Contact Architect if it appears that construction will damage to the branches of any tree. The Architect will determine action to be taken. If pruning is required, perform in accordance with paragraph 3.06 this Section.

END OF SECTION
PART 1 GENERAL

1.01 WORK INCLUDED - Work of this Section generally includes provisions for the installation of an underground landscape irrigation system including the following:
   A. Static pressure verification and coordination of irrigation system installation with landscape material installation.
   B. Trenching, stockpiling excavation materials, refilling and compacting trenches.
   C. Complete irrigation system including but not limited to piping, modifications to existing irrigation system, valves, fittings, heads, wiring, and final adjustments to insure complete coverage.
   D. Water connections.
   E. Replacement of unsatisfactory materials.
   F. Clean-up, Consultant Reviews, and Project Acceptance.
   G. Testing of Irrigation System(s).

1.02 RELATED SECTIONS
   A. Examine all sections related to project work.

1.03 REFERENCES
   A. Perform Work in accordance with requirements of Conditions of the Contract and Division 01 - General requirements as well as provisions of all applicable laws, codes, ordinances, rules, and regulations.
   B. Conform to requirements of reference information listed below except where more stringent requirements are shown or specified in Contract Documents.
      1. American Society for Testing and Materials (ASTM) - Specifications and Test Methods specifically referenced in this Section.
      2. Underwriters Laboratories (UL) - UL Wires and Cables.

1.04 QUALITY ASSURANCE
   A. Installer Qualifications - Installer shall have had considerable experience and demonstrate ability in the installation of irrigation system(s) of specific type(s) in a neat orderly, and responsible manner in accordance with recognized standards of workmanship. To demonstrate ability and experience necessary for this Project, submit if requested by Consultant and/or Owner, prior to contract award the following:
      1. List of 5 projects completed in the last 2 years of similar complexity to this Project. Description of projects shall include:
         a. Name of project.
         b. Location.
         c. Owner.
         d. Brief description of work and project budget.
         e. Reference contact name & telephone number
   B. Special Requirements:
      1. Tolerances - Specified depths of mains and laterals and pitch of pipes are minimums. Variance from stated depths shall not exceed 2” in any direction. Settlement of trenches is cause for removal of finish grade treatment, refilling, compaction, and repair of finish grade treatment.
      2. Coordination with Other Contractors - Protect, maintain, and coordinate Work with Work under other Section.
4. Damage To Other Improvements - Contractor shall replace or repair damage to grading, soil preparation, seeding, sodding, or planting done under other Sections during Work associated with installation of irrigation system at no additional cost to Owner.

5. Work involving high voltage electrical wiring, grounding and related Work shall be executed by licensed and bonded electrician(s). Secure a permit at least 48 hours prior to start of installation.

6. Coordination with other contractors: Irrigation installer shall protect, maintain, and coordinate his work with other work under this contract.

C. Pre-Construction Conference - Contractor shall schedule and conduct a conference to review in detail quality control and construction requirements for equipment, materials, and systems used to perform the Work. Conference shall be scheduled not less than 10 days prior to commencement of Work. All parties required to be in attendance shall be notified no later than 7 days prior to date of conference. Contractor shall notify qualified representatives of each party concerned with that portion of Work to attend conference, including but not limited to Architect, Consultant, Contractor's Superintendent, and Installer.

1. Minutes of conference shall be recorded and distributed by Contractor to all parties in attendance within five days of conference.

1.05 SUBMITTALS - Prepare and make submittals in accordance with conditions of the Contract.

A. Materials List - Submit PDF file of a complete materials list indicating manufacturer, model number, and description of all materials and equipment to be used. Show appropriate dimensions and adequate detail to accurately portray intent of construction.

B. Record Drawings (As-Builts):

1. At onset of irrigation installation secure Autocad 2007 files of original irrigation design from Owner. At the end of every day, revise as-built prints for work accomplished that day in red ink. Irrigation system record/as-built field prints shall be brought up-to-date at the close of the working day every Friday by a qualified draftsperson. A print of record plan(s) shall be available at Project Site. Indicate zoning changes on weekly record drawings. Indicate non-pressure piping changes on record drawings. Upon completion of Project, submit for review, prior to final acceptance, final set of irrigation systems record drawings plotted on bond paper, and a compact disk containing Autocad files of record drawings. Dimensions, from two permanent points of reference (building corners, sidewalk, road intersections or permanent structures), location of following items:
   a. Connection to existing water lines.
   b. Routing of sprinkler pressure lines (dimension maximum 100 feet along routing).
   c. Sprinkler control valves.
   d. Quick coupling valves.
   e. Manual drains
   g. Drip line blow-out stubs.
   h. Control wire routing if not with pressure mainline.
   i. Gate valves.
   j. Control wire splices
   K. Routing of irrigation wiring installed in separate trench (dimension maximum 100 feet along routing).

2. Owner’s Representative will not certify any pay request submitted by the Contractor if the as-built drawings are not current, and processing of pay request will not occur until Record Drawings are updated.

3. Contractor shall provide two bond copies of completed, approved record drawings and flash drive containing Autocad and PDF files of record drawings.

C. Operation Instructions - Submit 3 written operating instructions including winterization procedures and start-up, with cut sheets of products, and coordinate controller/watering operation instruction with Owner maintenance personnel.

1. Controller Charts
a. Do not prepare charts until Consultant has reviewed record (as-built) drawings.
b. Provide one controller chart for each automatic controller installed.
   1) Chart may be reproduction of record drawing, if scale permits fitting of controller
door. If reduction prints are required, keep reduction to maximum size possible
to retain full legibility.
   2) Chart shall be bond paper print of actual "as-built" system, showing area
covered by that controller.
c. Identify area of coverage of each remote control valve, using a distinctly different
pastel color drawing over entire area of coverage.
d. Following review of charts by Consultant, they shall be hermetically sealed between
two layers of 20-mm thick plastic sheet
e. Charts shall be completed and reviewed prior to final review of irrigation system.

D. Manufacturer Warranties – Contractor shall provide Owner with two copies of written
manufacturer warranties that exceed one year as published by each equipment and material
manufacturer for products installed on Project. Manufacturer warranty information shall be
provided for controller(s), all valves, piping, heads, backflow preventer(s), enclosures and valve
boxes.

E. Operating instructions and manufacturer warranty information shall be contained within 1 inch,
three ring binder (one binder per set).

1.06 DELIVERY, STORAGE, AND HANDLING  - Deliver, unload, store, and handle materials,
packaging, bundling, products in dry, weatherproof, condition in manner to prevent damage,
breakage, deterioration, intrusion, ignition, and vandalism. Deliver in original unopened packaging
containers prominently displaying manufacturer's name, volume, quantity, contents, instructions,
and conformance to local, state, and federal law. Remove and replace cracked, broken, or
contaminated items or elements prematurely exposed to moisture, inclement weather, snow, ice,
temperature extremes, fire, or jobsite damage.

A. Handling of PVC Pipe - Exercise care in handling, loading and storing, of PVC pipe. All PVC
pipe shall be transported in a vehicle which allows length of pipe to lie flat so as not to subject it
to undue bending or concentrated external loads. All sections of pipe that have been dented or
damaged shall be discarded, and if installed, shall be replaced with new piping.

1.07 JOBSITE CONDITIONS:

A. Protection of Property:
   1. Preserve and protect all trees, plants, monuments, structures, and paved areas from
damage due to Work of this Section. In the event damage does occur, all damage to
inanimate items shall be completely repaired or replaced to satisfaction of Owner, and all
injury to living plants shall be repaired by Owner. All costs of such repairs shall be
charged to and paid by Contractor.
   2. Protect buildings, walks, walls, and other property from damage. Flare and barricade
open ditches. Damage caused to asphalt, concrete, or other building material surfaces
shall be repaired or replaced at no cost to Owner. Restore disturbed areas to original
condition.

B. Existing Trees:
   1. All trenching or other Work under limb spread of any and all evergreens or low branching
deciduous material shall be done by hand or by other methods so as to prevent damage
to limbs or branches.
   2. Where it is necessary to excavate adjacent to existing trees use all possible care to avoid
injury to trees and tree roots. Excavation, in areas where 2 inch and larger roots occur,
shall be done by hand. Roots 2 inches or larger in diameter, except directly in the path of
pipe or conduit, shall be tunnelled under and shall be heavily wrapped with burlap to
prevent scarring or excessive drying. Where a trenching machine is operated close to
trees having roots smaller than 2 inches in diameter, wall of trench adjacent to tree shall
be hand trimmed, making clean cuts through roots as root damage is incurred by trenching operations. Trenches adjacent to trees shall be closed within 24 hours.

C. Protection and Repair of Underground Lines:
   1. Request proper utility company to stake exact location (including depth) of all underground electric, gas, or telephone lines. Take whatever precautions are necessary to protect these underground lines from damage. If damage does occur, Utility Owner shall repair all damage. Contractor shall pay all costs of such repairs unless other arrangements have been made.
   2. Request Owner, in writing, to locate all private utilities (i.e., electrical service to outside lighting) before proceeding with excavation. If, after such request and necessary staking, private utilities that were not staked are encountered and damaged by Installer, Owner shall repair them at no cost to Installer. If Contractor damages staked or located utilities, they shall be repaired by Utility Owner at Contractor's expense unless other arrangements have been made.

D. Replacement of Paving and Curbs - Where trenches and lines cross existing roadways, paths, curbing, etc., damage to these shall be kept to a minimum and shall be restored to original condition.

1.08 WARRANTY/GUARANTY: - Contractor shall warrant materials, equipment and workmanship against defects for a period of one year from date of Substantial Completion.
   A. Settling of backfilled trenches that may occur during guaranty period shall be repaired by Contractor at no expense to Owner, including complete restoration of damaged property.
   B. Expenses due to vandalism prior to substantial completion shall be borne by Contractor.
   C. Owner will maintain turf and planting areas during warranty period, so as not to hamper proper operation of irrigation system.

1.09 MAINTENANCE:
   A. Winterization - include cost in bid for winterizing complete system at conclusion of sprinkling season (in which system received final acceptance) within 3 days notification by the Owner. System shall be voided of water using compressed air or similar method reviewed by Consultant. Reopen, operate, and adjust and/or repair system accordingly during April of following season within 3 days of notification by Owner.

PART 2 PRODUCTS
2.01 MATERIALS:
   A. General Piping:
      1. Pressure Supply Lines (downstream of backflow prevention units) - Schedule 40 PVC Solvent Weld.
      2. Non-pressure Lines - Schedule 40 PVC Solvent Weld
      3. PVC Sleeving - DR11 High Density Polyethylene.
      4. Drip Tubing - Centennial low-density polyethylene 3/4" diameter with .050 inch wall thickness.
      5. Emitter Tubing - Rain Bird XQ 1/4 inch diameter polyethylene
   B. Brass Pipe and Fittings:
      1. Brass Pipe - 85% red brass, ANSI Schedule 40 screwed pipe.
      a. Teflon Tape – All brass male threaded fittings and nipples shall receive wrapping of Teflon tape applied to threaded surfaces per pipe manufacturer’s recommendations.
      2. Fittings - Medium brass, screwed 125-pound class.
   C. Plastic Pipe and Fittings:
      1. Identification Markings:
      a. Identify all pipe with following indelible markings:
1) Manufacturer's name.
2) Nominal pipe size.
3) Schedule of class.
4) Pressure rating.
5) NSF (National Sanitation Foundation) seal of approval.
6) Date of extrusion.

2. Solvent Weld Pipe - Manufactured from virgin polyvinyl chloride (PVC) compound in accordance with ASTM D2241 and ASTM D1784; cell classification 12454-B, Type 1, Grade 1.
   a. Fittings - Standard Wright, Schedule 40, injection molded PVC; complying with ASTM D1784 and D2466, cell classification 12454-B.
      1) Threads - Injection molded type (where required).
      2) Tees and ells - Side gated.
   b. Threaded Nipples - ASTM D2464, Schedule 80 with molded threads.
   c. Thread Sealant – All PVC male threaded fittings and nipples, excluding marlex fittings, shall receive non-hardening thread sealant/paste containing no petroleum distillates applied to threaded surfaces per pipe manufacturer’s recommendations (Spears 75 Blue or equal).
   d. Joint Cement and Primer - Type as recommended by manufacturer of pipe and fittings.

D. Drip Irrigation Systems:
1. Drip Tubing - Piping shall be UV resistant, produced from linear low density polyethylene, ¾ inch diameter (0.94" O.D., 0.82" I.D.) conforming to ASTM D1248, Type 1, Class C, Category 4, P14 and ASTM D3350 for PE 122111C.
2. Fittings - Type and diameter recommended by tubing manufacturer.
2. Drip Valve Assembly - Type and size shown on Drawings.
   a. Wye Strainer - Plastic construction with 200 mesh nylon screen and integral, non-adjustable pressure regulation (30 PSI).
   b. Control Valve - 2 way, solenoid pilot operated type made of synthetic, non-corrosive material; diaphragm activated and slow closing. Include freely pivoted seat seal; retained (mounted) without attachment to diaphragm.
4. Emitters - Single port, pressure compensating, press on type by Rain Bird (XB series).

F. Quick Coupling Valves - Brass two-piece body designed for working pressure of 125 PSI; operable with quick coupler. Equip quick coupler with locking rubber cover.

G. Valve Boxes:
1. Gate Valves, Quick Coupling Valves, Drain Valves, Drip Line Blow-out Stubs, and Wire Splice or Stub Box - Carson #910-10 box with 910-4 T-cover. 6" round valve boxes are not acceptable.
2. 1 inch through 2 inch Control Valves - Carson Industries #1419-12 box with 1419-4 T-cover.
3. Drip Valve Assemblies - Carson Industries #1220-12 box with 1220-4 T-cover.
4. All 10" round, standard rectangular and jumbo rectangular valve boxes installed on project shall be manufactured by one company. Mixing of these valve boxes from multiple manufacturer’s is not acceptable.
5. Valve box and cover shall be colored green.

H. Electrical Control Wiring:
1. Low Voltage:
   a. Electrical Control Wire - AWG UFUL approved No. 14, direct burial, single conductor, solid copper wire
   b. Electrical Common Wire - AWG UFUL approved No. 14, direct burial, single conductor, solid copper wire
b. Electrical Tracer Wire - AWG UFUL approved No. 10, direct burial, single conductor, solid copper wire
c. Wire Colors:
   1) Control Wires - Red.
   2) Common Wires - White.
   3) Tracer Wire - Yellow.
   4) Spare Control Wires - Black.
   5) Spare Common Wires – Blue

d. Control Wire connections and splices shall be made with 3M DBR/Y-6 watertight splices.
I. Automatic Controller - Existing
J. Electric Control Valves - Size and type shown on Drawings having manual flow adjustment and manual operational nut with internal bleed.
K. Sprinkler Heads - As indicated on Drawings. Fabricated riser units in accordance with details on Drawings - with fittings and nipples of equal diameter as riser inlet in sprinkler body.
L. Backflow Preventer - Existing.

PART 3 EXECUTION

3.01 SITE CONDITIONS, LANDSCAPE PLAN REVIEW AND COORDINATION
A. Contractor will be held responsible for coordination between landscape and irrigation system installation. Landscape material locations shown on the Landscape Plan shall take precedence over the irrigation system equipment locations. If irrigation equipment is installed in conflict with the landscape material locations shown on the Landscape Plan, the Contractor will be required to relocate the irrigation equipment, as necessary, at Contractor’s expense.
B. Contractor is responsible to notify Consultant of any field conditions that vary from the conditions shown on the Irrigation Construction Documents. If Contractor fails to notify Consultant of these conditions, Contractor will be held responsible for all costs associated with system adjustments required due to the change in field conditions.

3.02 STATIC PRESSURE VERIFICATION - Contractor shall field verify the static pressure at the project site, prior to commencing work or ordering irrigation materials, and submit findings, in writing, to Consultant. If Contractor fails to verify static water pressure prior to commencing work or ordering irrigation materials, Contractor shall assume responsibility for all costs required to make system operational and the costs required to replace any damaged landscape material. Damage shall include all required material costs, design costs and plant replacement costs.

3.03 INSPECTION: - Examine areas and conditions under which Work of this Section is to be performed. Do not proceed with Work until unsatisfactory conditions have been corrected.
A. Grading operations, with the exception of final grading, shall be completed and approved by Owner before staking or installation of any irrigation system begins.
B. Underground Utilities shall be installed prior to installation of irrigation system. If irrigation installation takes place prior to utility installation, Contractor shall notify Owner of this condition in writing prior to commencement of irrigation installation.

3.04 PREPARATION:
A. Staking shall Occur as Follows:
   1. Mark, with powdered lime, routing of pressure supply line and flag heads for first few zones. Contact Consultant 48 hours in advance and request review of staking. Proposed locations of all trees shall be field staked by Contractor and approved by Owner/Landscape Architect prior to Consultant review of irrigation staking. Consultant will
advise installer as to the amount of staking to be prepared. Consultant will review staking and direct changes if required. Review does not relieve installer from coverage problems due to improper placement of heads after staking.

2. Contractor shall contact Consultant if field spacing varies by +/- 10% of the spacing shown on the irrigation plans. If Contractor fails to notify Consultant of variances exceeding 10%, Contractor assumes full responsibility for the costs associated with any required system modifications deemed necessary by the Consultant or Owner.

3. If Project has significant topography, freeform planting beds, or other amenities, which could require alteration of irrigation equipment layout as deemed necessary by Consultant, do not install irrigation equipment in these areas until Consultant has reviewed equipment staking.

B. Install sleeving under asphalt paving and concrete walks, prior to concreting and paving operations, to accommodate piping and wiring. Compact backfill around sleeves to 95% Modified Proctor Density within 2% of optimum moisture content in accordance with STM D1557.

C. Trenching - Trench excavation shall follow, as much as possible, layout shown on Drawing. Dig trenches straight and support pipe continuously on bottom of trench. Trench bottom shall be clean and smooth with all rock and organic debris removed.

1. Clearances:
   a. Piping 3 Inches and Larger - Make trenches of sufficient width (12 inches minimum) to properly assemble and position pipe in trench. Minimum clearance of piping 3 inches or larger shall be 4 inches horizontally on both sides of the trench.
   b. Piping Smaller than 3 Inches - Trenches shall have a minimum width of 6 inches.
   c. Line Clearance - Provide not less than 6 inches of horizontal clearance between each line and not less than 12 inches of clearance between lines of other trades. Vertical "stacking" of multiple runs of irrigation piping within common trench is not acceptable.

2. Pipe and Wire Depth:
   a. Pressure Supply Piping (Mainline) - 18 inches from top of pipe.
   b. PVC Sleeving – Road/Street/Driveway – 30 inches minimum/36 inches maximum depth of cover as measured from top of sleeve to bottom of road surfacing material. Pedestrian and Bicycle paths/walks – Depth shall equal depth of piping and/or wiring to be contained within sleeving as indicated on plan as measured from top of sleeving to top of path/walk.
   c. Non-pressure Piping (pop-up) - 12 inches from top of pipe.
   d. Control Wiring - Side of pressure main or at 18 inch depth if installed in a separate trench containing no mainline piping.
   e. Drip Tubing - Bed Areas - 6 inches from top of pipe. Turf areas – 12 inches from top of pipe.
   f. Emitter Tubing (Micro-tubing) – 4 to 6 inches from top of pipe.

3. Vibratory Plow - Not an acceptable method of installation for irrigation piping and/or wiring.

3.05 INSTALLATION - Locate equipment as near as possible to locations designated. Consultant shall review and approve deviations prior to installation.

A. PVC Piping - Snake pipe in trench as much as possible to allow for expansion and contraction. Do not install pipe when air temperature is below 40 degree Fahrenheit. Install manual drain valves at low points and dead ends of pressure supply piping to insure complete drainage of system. Installation of multiple runs of piping in common (joint) trench is not permissible. When pipe installation is not in progress, or at end of each day, close pipe ends with tight plug or cap. Perform Work in accordance with good practices prevailing in piping trades.

1. Solvent Weld PVC Pipe - Lay pipe and make all plastic to plastic joints in accordance with manufacturer's recommendations.
B. Drip Tubing:
   1. Make all fitting connections as per manufacturer’s recommendations.
   2. Use only manufacturer provided or recommended hole punch when making penetrations in drip tubing for micro-tubing barbed fittings. Use of any other hole punch shall be cause for immediate removal and replacement of all installed drip tubing.
   3. Install drip line blow-out stubs at all dead ends of drip tubing.
   4. Flushing - After tubing, barbed fittings and micro-tubing is place and connected, but prior to installation of emitters, thoroughly flush drip tubing under full head of water pressure through blow-out/flush-out stubs installed at ends of lines. Maintain flushing for 5 minutes through all blow-outs.

C. Control Wiring:
   1. Low Voltage Wiring:
      a. Bury control wiring between controller and electric valves in pressure supply line trenches, strung as close as possible to main pipe lines with such wires to be consistently located below and to one side of pipe, or in separate trenches.
      b. Bundle and tape all 24 volt irrigation wires with electrical tape at 10 foot intervals and lay with pressure supply line pipe to one side of the trench. Irrigation wiring installed above/over pressure supply line is not acceptable.
      c. Provide an expansion loop at every pressure pipe angle fitting and every 500 feet. Form expansion loop by coiling wire bundle and lay formed coil in trench prior to backfilling.
      d. Provide continuous loop of all spare and tracer wires within every valve box containing electric control valve or drip valve assembly. Construct loop within valve box by wrapping wire at least 8 times around a 3/4 inch pipe and withdrawing pipe.
      e. Make all splices and electric control valve connections using 3M Company DBR/Y-6 watertight wire splice connector kits.
      f. Install all control wire splices not occurring at control valve in a separate splice valve box.
      g. Install one control wire for each control valve.

D. Electric Control Valves - Install cross-handle four inches below finished grade where shown on Drawings as detailed. When grouped together, allow at least 12 inches between valve box sides. When installed adjacent to curbing and walks, allow 24 inches between valve box and walk/curb. Install each remote control valve in a separate valve box with box centered over valve assembly. Install individual valve box flush with grade.

E. Quick Coupling Valves - Install quick couplers on swing-joint assemblies as indicated on construction details; plumb and flush to grade. Angled nipple relative to pressure supply line shall be no more than 45 degrees and no less than 10 degrees.

F. Drip Valve Assemblies - Install drip valve assembly as detailed.

G. Drip Emitters - Stake all surface emitters as detailed and staked with acceptable tubing stakes.

H. Drain Valves - Install one manual drain valve at low point in pressure mainline(s) as dictated by field conditions. Provide a three cubic foot drainage sump for drain valve as detailed.

I. Valve Boxes:
   1. Install one valve box for each type of valve installed as detailed. Valve box extensions are not acceptable except for master valves, pressure regulating valves, flow sensors or other irrigation equipment installed at depth of pressure mainline. Install gravel sump after compaction of all trenches. Place final portion of gravel inside valve box after valve box is backfilled and compacted.
   2. Brand controller letter and station number on lid of each valve box. Letter and number size shall be no smaller than 1 inch and no greater in size than 1 1/2 inches. Depth of branding shall be no more than 1/8 inch into valve box lid.

J. Sprinkler Heads - Install sprinkler heads where designated on Drawings or where staked. Set to finish as detailed. Spacing of heads shall not exceed the maximum indicated on Drawing
unless re-staked as directed by Consultant. In no case shall the spacing exceed maximum recommended by manufacturer. Install heads on swing joints or riser assemblies as detailed. Adjust part circle heads for proper coverage. Adjust heads to correct height after sod is installed. Plant placement shall not interfere with intended sprinkler head coverage, piping, or other equipment. Consultant may request nozzle changes or adjustments without additional cost to the Owner.

K. Backflow Prevention Device - Existing

L. Backfilling - Do not begin backfilling operations until required system tests have been completed. Backfill shall not be done in freezing weather except with review by Consultant. Leave trenches slightly mounded to allow for settlement after backfilling is completed. Trenches shall be finish graded prior to walk-through of system by Consultant.

1. Materials - Excavated material is generally considered satisfactory for backfill purposes. Backfill material shall be free of rubbish, vegetable matter, frozen materials, and stones larger than 1 inch in maximum dimension. Do not mix subsoil with topsoil. Material not suitable for backfill shall be hauled away. Contractor shall be responsible for providing suitable backfill if excavated material is unacceptable or not sufficient to meet backfill, compaction, and final grade requirements.

2. Do not leave trenches open for a period of more than 48 hours. Open excavations shall be protected in accordance with OSHA regulations.

3. Compact backfill to 90% maximum density, determined in accordance with ASTM D155-7 utilizing the following methods:
   a. Mechanical tamping.
   b. Puddling or ponding. Puddling or ponding and/or jetting is prohibited within 20'-0" of building or foundation walls.

M. Piping Under Paving:

1. Provide for a minimum cover of 24 inches between the top of the pipe and the bottom of the aggregate base for all pressure and non-pressure piping installed under asphaltic concrete or concrete paving.

2. Piping located under areas where asphalt or concrete paving will be installed shall be bedded with sand (a layer 6" below pipe and 6" above pipe).

3. Compact backfill material in 6" lifts at 90% maximum density determined in accordance with ASTM D155-7 using manual or mechanical tamping devices.

4. Piping under existing walks or concrete pavement shall be done by jacking, boring, or hydraulic driving, but where cutting or breaking of walks and/or concrete is necessary, it shall be done and replaced at not cost to Owner. Obtain permission to cut or break walks and/or concrete from Owner.

N. Water Supply and Point of Connection - Water supply shall be extended as shown from water supply lines.

3.06 FIELD QUALITY CONTROL:

A. Flushing - After piping, risers, and valves are in place and connected, but prior to installation of sprinkler heads, quick coupler assemblies, and hose valves, thoroughly flush piping system under full head of water pressure from dead end fittings. Maintain flushing for 5 minutes through furthestmost valves. Cap risers after flushing.

B. Testing - Conduct tests in presence of Consultant. Arrange for presence of Consultant 48 hours in advance of testing. Supply force pump and all other test equipment.

1. After backfilling, and installation of all control valves, fill pressure supply line with water, and pressurize to 40 PSI over the designated static pressure or 120 PSI, whichever is greater, for a period of 2 hours. Pressure testing of pressure supply line utilizing compressed air is not acceptable.

2. Leakage, Pressure Loss - Test is acceptable if no loss of pressure is evident during the test period.

3. Leaks - Detect and repair leaks.
4. Retest system until test pressure can be maintained for duration of test.
5. Before final acceptance, pressure supply line shall remain under pressure for a period of 48 hours.

C. Walk-Through for Substantial Completion:
   1. Arrange for Consultant's presence 48 hours in advance of walk-through.
   2. Entire system shall be completely installed and fully operational prior to scheduling of walk-through. This shall include all control valves capable of being operated via irrigation controller.
   3. Electrically operate each zone in its entirety for Consultant at time of walk-through and additionally, open all valve boxes if directed.
   4. Consultant shall generate a list of items to be corrected prior to Final Completion.
   5. Furnish all materials and perform all work required to correct all inadequacies of coverage due to deviations from Contract Documents.
   6. During walk-through, expose all drip emitters under operation for observation by Consultant to demonstrate that they are performing and installed as designed, prior to placing of all mulch material. Schedule separate walk-through if necessary.
   7. Supply Consultant with one set of full-size prints (not original drawings) of completed contractor-prepared irrigation as-built field drawings prior to start of substantial completion walk-through.

D. Walk-Through for Final Completion:
   1. Arrange for Consultant's presence 48 hours in advance of walk-through.
   2. Show evidence to Consultant that Owner has received all accessories, charts, record drawings, and equipment as required before Final Completion walk-through is scheduled.
   3. Electrically operate each zone, in its entirety for Consultant at time of walk-through to insure correction of all incomplete items.
   4. Items deemed not acceptable by Consultant shall be reworked to complete satisfaction of Consultant.
   5. If after request to Consultant for walk-through for Final Completion of irrigation system, Consultant finds items during walk-through which have not been properly adjusted, reworked, or replaced as indicated on list of incomplete items from previous walk-through, Contractor shall be charged for all subsequent walk-throughs. Funds will be withheld from final payment and/or retainage to Contractor, in amount equal to additional time and expenses required by Consultant to conduct and document further walk-throughs as deemed necessary to insure compliance with Contract Documents.

3.07 ADJUSTING - Upon completion of installation, "fine-tune" entire system by regulating valves, adjusting patterns and break-up arms, and setting pressure reducing valves at proper and similar pressure to provide optimum and efficient coverage. Flush and adjust all sprinkler heads for optimum performance and to prevent overspray onto walks, roadways, and buildings as much as possible. Heads of same type shall be operating at same pressure +/- 7%.

   A. If it is determined that irrigation adjustments will provide proper coverage, and improved water distribution as determined by Consultant, contractor shall make such adjustments prior to Final Acceptance, as directed, at no additional cost to Owner. Adjustments may also include changes in nozzle sizes, degrees of arc, and control valve throttling.

   B. All sprinkler heads shall be set perpendicular to finish grade unless otherwise noted on Construction Plans or directed by Consultant.

   C. Areas which do not conform to designated operation requirements due to unauthorized changes or poor installation practices shall be immediately corrected at no additional cost to the Owner.

3.08 CLEANING - Maintain continuous cleaning operation throughout duration of work. Dispose of, off-site at no additional cost to Owner, all trash, debris and excess soil generated by installation of irrigation system.
END OF SECTION
SECTION 32 91 00
FINE GRADING AND SOIL PREPARATION

PART 1 - GENERAL

1.01 SECTION INCLUDES
A. Examination.
B. Preparation.
C. Subsoil Preparation.
D. Placing Topsoil.
E. Soil Tests.
F. Coordination of Soil Amendments.
G. Fine Grading.
H. Tolerances.
I. Field Quality Control
J. Adjusting.
K. Cleaning
L. Protection.

1.02 RELATED SECTIONS
A. Section 01 30 00: Administrative Requirements
B. Section 01 40 00: Quality Requirements
E. Section 32 84 00: Irrigation System.
F. Section 32 92 00: Turf and Grasses.
G. Section 32 93 00: Planting.
H. Section 32 94 00: Planting Accessories

1.03 REFERENCES
A. ANSI/ASTM D698 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures, Using 5.5 lb (2.49 Kg) Rammer and 12 inch (304.8 mm) Drop.
B. ANSI/ASTM D1556 - Test Method for Density of Soil in Place by the Sand-Cone Method.
C. Association of Official Agricultural Chemists: Topsoil Analysis.

1.04 DEFINITIONS

1.05 SUBMITTAL PROCEDURES
A. Comply with Section 01 30 00. All submittals shall be accepted by the Architect in writing before planting commence.
B. TOPSOIL TESTING:
1. After topsoil spreading, submit, for Architect's approval, topsoil samples and test results from:
   a. Each off-site topsoil source.
2. Each location submission shall include:
   a. 1 qt. representative sample in air tight container.
   b. Agricultural analysis by recognized laboratory made in accordance with methods established by the Association of Official Agricultural Chemists. Test shall include available nutrients, soil pH, soil texture, salt, and percentage organic matter, and recommended fertilization and amendment rates for plant material types specified.
   c. Location of borrow site, if applicable.
3. Deliver copies of all test reports and samples to landscape contractor and Architect.

C. CERTIFICATES: Submit certificates of inspection as required by governmental authorities.

D. SAMPLES: Comply with paragraph 1.05.B this Section.

1.06 QUALITY REQUIREMENTS
A. Comply with Section 01 40 00.
B. QUALIFICATIONS
   1. Installer: Company with minimum five (5) years successful experience in the placing on topsoil similar in scope and size to this project.
   2. Testing Agency: Certified soils laboratory with capability to analyze materials for conformance to specification requirements (where applicable).

1.07 DELIVERY, STORAGE AND HANDLING
A. TOPSOIL: Protect materials from erosion, wind, rodents, deterioration and contamination during delivery, installation and site storage.

1.08 PROJECT/SITE CONDITIONS
A. ENVIRONMENTAL REQUIREMENTS
   1. Comply with requirements of referenced standards for environmental conditions before, during, and after installation. Maintain environmental conditions and protect work during and after installation to comply with referenced standards.
   2. Moisture Content: Topsoil and other materials shall not be placed, backfilled, or spread while in a wet or saturated condition. Moisture content shall not be so great that excessive compaction will occur, nor so low that dust will form in the air or that clods will not break readily. Apply water if necessary to bring soil to optimum moisture content for tilling.
   3. Do not work soil when muddy or frozen.
B. EXISTING CONDITIONS
   1. Plants: Protect existing plant material. Do not damage any plantings indicated to remain.
   2. Utilities: Determine location of underground utilities including irrigation system. Perform work in a manner to avoid possible damage. Hand excavate, as required.
   3. Excavation: Maintain grade stakes set by others until removal is mutually agreed upon by parties concerned. When conditions detrimental to Work are encountered, such as rubble fill, adverse drainage conditions, noxious materials or obstructions, notify Architect before proceeding.

1.09 SEQUENCING AND SCHEDULING
A. COORDINATION
   1. Coordinate with seeding and landscape Contractor(s) approved schedule. Refer to Division 1. Do not place topsoil more than 3 days prior to commencement of landscaping in the area. Limit fine grading to areas which can be planted within 24 hours after fine grading.
   2. Coordinate with Contractors' work requiring access to site over topsoil areas.
3. Coordinate with installation of underground irrigation system and outlets.

1.10 MAINTENANCE
A. Protect newly topsoiled and fine graded areas from erosion and traffic. Repair and reestablish grades in settled, eroded and disturbed areas to specified tolerances until landscape operations commence.

PART 2 - PRODUCTS

2.01 TOPSOIL
A. On-Site Topsoil: Topsoil shall be a fertile sandy loam topsoil, taken from a well-drained site, and free from clay subsoil, stones, lumps, plants or their roots, sticks, weed stolons and seeds, high salt content and other materials harmful to plant life. The topsoil shall have an acidity in the range of pH 5.5 to pH 8.0, salt levels of less than 6 mmhos/cm, and shall be screened and meet the following mechanical analysis.

<table>
<thead>
<tr>
<th>Sieve/Screen Size</th>
<th>% Passing</th>
<th>% Retaining</th>
</tr>
</thead>
<tbody>
<tr>
<td>1&quot; screen</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>1/2&quot; screen</td>
<td>97-100</td>
<td>0-3</td>
</tr>
<tr>
<td>#100 mesh sieve</td>
<td>60-40</td>
<td>40-60</td>
</tr>
</tbody>
</table>

2. Refer to Sections 32 92 00, and 32 93 00 for topsoil amendment requirements.
3. Provide the following information:
   a. specific location from which the topsoil will be (or was) stripped.
   b. agricultural test result showing topsoil composition and analysis.

B. PRE-AMENDED TOPSOIL: Pre-amended topsoil to be used per direction of Architect.
   1. Supplier: Hageman Earth Cycle, Inc., Ft Collins CO, Phone: 970-221-7173, or approved equal.
   2. Product: “Topsoil Yard Pride Mix” by Hageman Earth Cycle, Inc. or approved equal.

2.02 WATER
A. Clean, fresh and free of substances or matter which could inhibit vigorous growth of plants.

2.03 HERBICIDE
A. WEED HERBICIDE: Round-up or approved equal.

PART 2 - EXECUTION

3.01 EXAMINATION
A. VERIFICATION OF CONDITIONS: Examine areas and conditions under which the Work of the Section will be performed. Report unsatisfactory or questionable conditions to the Architect. Do not proceed with the Work until unsatisfactory conditions have been corrected. Commencement of work implies acceptance of all areas and conditions.
1. Verify that during grading, the ground surface was cleaned of materials which might hinder final operations.

3.02 PREPARATION
A. PROTECTION: Protect areas in accordance with paragraph 3.12 this Section.
B. HERBICIDE TREATMENT
   1. Confirm Architect’s requirement to proceed with herbicide treatment of on site soil. Herbicide treatment must be completed during the growing season.
   2. If plant growth is evident, treat site with Roundup herbicide in accordance with manufacturer’s recommendations.
   3. Water subsoil 1/2” per week if natural precipitation does not supply this amount.
   4. Ten (10) days after Roundup application, review soil surface for evidence of plant growth.
   5. Repeat steps 2, 3 and 4, up to three (3) applications, until there is no evidence of plant growth after 10 day period.
6. Obtain Architect’s approval of soil fourteen (14) days after last herbicide application.
7. Remove plant debris from treated area.

3.03 SUBSOIL PREPARATION
A. Verify subsoil base has been contoured and compacted and is free of contaminated material.
B. Prepare subsoil to eliminate uneven areas and low spots. Maintain lines, levels, profiles, and contours. Make changes in grade gradual. Blend slopes into level areas.
C. Remove foreign materials, stones exceeding 2 inches, weeds and undesirable plants and their roots.
D. Scarify subsoil to a depth of 6 inches where topsoil is to be placed. Repeat cultivation in areas where equipment, used for hauling and spreading topsoil, has compacted subsoil.
E. Remove foreign materials, stones exceeding 2 inches, weeds and undesirable plants and their roots which came to the surface during subsoil scarification.

3.04 PLACING TOPSOIL
A. Place topsoil where seeding and planting is scheduled and in accordance with paragraph 1.09 this Section.
B. Place topsoil during dry weather and on dry, unfrozen subsoil.
C. Remove vegetative matter and foreign, non-organic material and debris larger than 1.5 inches in diameter at the time of placement.
D. Place topsoil to the following depths:
   1. Sod Areas 6"
   2. Seed Areas 6"
   3. Shrub Beds 6"
   4. Flower Beds 6"
   5. Planters Full depth, allowing for the addition of soil amendments.
E. Place preamended topsoil to the following depths:
   1. Sod Areas 5.5"
   2. Seed Areas 5.5"
   3. Shrub Beds 7.5"
   4. Flower Beds 7.5"
   5. Planters Full depth of pre-amended topsoil, allowing for the addition of soil amendments.
F. Place topsoil eliminating rough or low areas to ensure positive drainage. Maintain profiles and contour of subgrade.
G. Manually place topsoil close to existing trees, shrubs, plants, curbs, new construction, planters and buildings to prevent damage.
H. Coordinate topsoil placement with sub-soil amending in accordance with Section 32 93 00.

3.05 SOIL TESTS
A. Perform soil testing and submission in accordance with paragraph 1.06 this Section.

3.06 COORDINATION OF SOIL AMENDMENTS
A. Coordinate soil amendments with landscape contractor in accordance with Sections 32 92 00, and 32 93 00.

3.07 FINE GRADING
A. Fine grade topsoil to finished elevations with smooth, even surface with loose, uniformly fine texture.
B. Remove foreign materials, stones exceeding 1.5 inches, weeds and undesirable plants and their roots which came to the surface during soil amending.

C. Roll, rake and drag dryland seed areas, remove ridges and fill depressions, as required to meet finish grades. Limit fine grading to areas which can be planted immediately after grading. Compact seeded areas to 90% in accordance with Excavation and Embankment Section 02210 Wyoming Public Works Standard Specification.

D. Remove surplus subsoil and topsoil from site.

E. Leave stockpile area and site clean and raked, ready to receive landscaping.

3.08 TOLERANCES
A. TOPSOIL: Topsoil elevations shall be within the following tolerances from elevations indicated on the drawings:
   1. Landscape Areas: ± 0.10’.
   2. Adjacent to Paving and Curbs: ± 0.04’ (1/2”).

3.09 FIELD QUALITY CONTROL
A. REVIEWS: Comply with Contract General Conditions.

3.10 ADJUSTING
A. RECONDITIONING COMPACTED AREAS: When completed topsoil areas are disturbed by subsequent construction operations or adverse weather, scarify surface, reshape, and compact to required density prior to further construction.

3.11 CLEANUP
A. DURING LANDSCAPE INSTALLATION
   1. All areas shall be reasonably clean at the end of each work day. Sidewalks and other paved areas shall be swept or washed down as needed. Keep pavements clean and work area in an orderly condition.
   2. Contractor shall make a reasonable effort to clean up the project on a daily basis to maintain a neat and orderly site.

B. PROJECT COMPLETION
   1. All debris, soil and trash resulting from landscape operations shall be removed from the site. Burning of waste material is prohibited. All paved areas shall be washed down.
   2. Restore all areas outside the Contract limits which have been disturbed to their original condition at no cost to the Architect.

3.12 PROTECTION
A. Protect landscape work and materials from damage due to landscape operations, operations by other contractors and trades and trespassers.

B. Maintain protection during installation and maintenance periods. Treat, repair or replace damaged landscape work as directed.

C. Protect existing trees, shrubs, groundcovers, perennials and turf areas from damage during construction.

END OF SECTION
PART 1 - GENERAL

1.01 SECTION INCLUDES
A. Examination.
B. Site Preparation.
C. Soil Preparation for Seeding
D. Seeding
E. Mulching
F. Areas to be top Dressed
G. Field Quality Control.
H. Clean Up.
I. Protection.
J. Maintenance

1.02 RELATED SECTIONS
A. Section 01 30 00: Administrative Requirements.
B. Section 01 40 00: Quality Requirements.
C. Section 32 84 00: Irrigation System.
D. Section 32 90 00: Fine Grading and Soil Preparation.
E. Section 32 93 00: Planting.
F. Section 32 93 50: Landscape Maintenance.
G. Section 32 94 00: Planting Accessories.

1.03 REFERENCES
A. ASPA (American Sod Producers Association) - Guideline Specifications to Sodding.

1.04 DEFINITIONS

1.05 SUBMITTAL PROCEDURES
A. Comply with Section 01 30 00. All submittals shall be accepted by the Architect in writing before planting commences.
B. TOPSOIL TESTING
   1. Coordinate soil testing with Section 01 40 00.
C. CERTIFICATES
   1. Submit two copies of labels or certificates from State Department of Agriculture for grass species.
   2. Submit certificates of inspection as required by governmental authorities.
   3. Submit manufacturer’s certified analysis packaged with standard products.
4. Submit all blue tags which were removed to mix the seed.
5. Submit mix tags showing seed mix, noxious seed and crop seed content, weight, analysis and date of most recent germination test.
6. Submit certificates of inspection certifying that straw for use as mulch is weed free.

D. ANALYSIS AND STANDARDS: Wherever applicable, for non packaged materials, provide two copies of analysis by recognized laboratory made in accordance with methods established by the Association of Official Agriculture Chemists.

E. PLANTING SCHEDULE: Comply with General Contract Conditions.

1.06 QUALITY REQUIREMENTS
A. Comply with Section 01 40 00.
B. REGULATORY REQUIREMENTS
1. Comply with regulatory agencies concerning classification, transportation, handling and storage of seed, fertilizer, herbicide and pesticide materials.
2. Comply with regulatory agencies for fertilizer, herbicide and pesticide composition and application.

1.07 DELIVERY, STORAGE AND HANDLING
A. PACKAGED MATERIALS: Deliver packaged materials in containers showing weight, analysis and name of manufacturer. Protect materials from deterioration during delivery, and while stored at site.
B. SEED
1. Deliver seed mixture in original sealed containers with certificates of inspection required by governing authorities. Labels shall show seed mix, noxious seed and crop seed content, weight, analysis and date of most recent germination test. Certified blue-tagged seed shall be supplied where a named variety is specified. Seed in damaged packaging is not acceptable.
2. Protect materials from weather, moisture, rodents, deterioration and contamination during delivery, installation and site storage. Seed that has become wet or otherwise damaged is not acceptable.
3. Rejection of Materials: Evidence of inadequate or inappropriate transportation or storage of seed or seed not properly identified through blue-tags or mix tags submitted to Architect shall be cause for rejection.

1.08 PROJECT/SITE CONDITIONS
A. ENVIRONMENTAL REQUIREMENTS
1. Seeding Season: Seeding shall occur as specified below. Variance from schedule shall be permitted only with written approval from the Architect.

<table>
<thead>
<tr>
<th>Seed Type</th>
<th>Irrigated</th>
<th>Non-Irrigated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dryland (native) Seed</td>
<td>May 1-July 30</td>
<td>Oct 1-May 30</td>
</tr>
</tbody>
</table>

2. Seeding shall occur only when weather and soil conditions permit in accordance with locally accepted practice. Do not seed during periods of prolonged cold or heat, when ground is frozen or too dry, during windy periods, immediately following rain, or during excessively wet or dry periods.

B. EXISTING CONDITIONS
1. Existing Plants: Do not damage any existing plantings indicated to remain. Sod areas after trees are planted and after final grades are established, unless otherwise directed by the Architect.
2. Utilities: Determine location of underground utilities. Perform work in a manner to avoid possible damage. Hand excavate, as required.
3. Excavation: Maintain grade stakes set by others until removal is mutually agreed upon by parties concerned. When conditions detrimental to plant growth are encountered, such as rubble fill, adverse drainage conditions, noxious materials or obstructions, notify Architect before planting.

1.09 SEQUENCING AND SCHEDULING

A. WORK SCHEDULING: Proceed with and complete landscape work as rapidly as portions of the site become available, working within the specified planting season and approved schedule.

B. COORDINATION
1. Coordinate with Contractors work requiring access to site over lawn areas.
2. Coordinate with installation of underground irrigation system and outlets.
3. Coordinate seeding to provide maintenance in accordance with Section 32 93 50.
4. Coordinate with topsoil placing to conform to installation requirements specified in Section 32 90 00.

1.10 WARRANTY AND REPLACEMENT

A. GENERAL: Comply with General Contract Conditions.

B. SEED WARRANTY CONDITIONS: Warranty all seeded areas against defects due to any cause except vandalism and acts of God. The following warranty conditions apply:
1. Reseed all areas when turf is no longer in a satisfactory growing condition as determined by the Architect for the entire warranty period.
   a. Satisfactory Dryland Seeded Areas: A healthy, uniform, close stand of grass must be established, free of weeds and surface irregularities, with a coverage exceeding 90% over any 10 sq. ft. (0.92 sq. m) and bare spots not exceeding 5 by 5 inches (125 by 125mm) prior to acceptance of dryland seed areas.
2. If seeded areas fail after having been replaced previously, area shall be replaced until it is approved. The warranty period begins anew and extends each time an area requires replanting. Replacement seed shall be of the same kind, condition and quality as original seed and subject to all requirements in this specification.
3. All expenses incurred in the replacements shall be borne by the Contractor.
4. Make replacements within seven days of notification by Architect.
5. If seeded in fall, review for Substantial Completion shall be no later than June 15 the following year.

C. POST CONSTRUCTION INSPECTION (REVIEW FOR FINAL WARRANTY COMPLIANCE): Comply with General Contract Conditions.

1.11 MAINTENANCE (See also Section 32 93 50)

A. GENERAL: Maintain lawns by watering, fertilizing, weeding, mowing, trimming, and other operations such as rolling, re-grading and reseeding as necessary to establish a smooth, acceptable lawn, free of eroded or bare areas or as directed by the Architect.

B. DRYLAND SEED: Contractor to irrigation dryland seed until 1.10B germination is met.

C. MAINTENANCE PERIOD: Begin maintenance immediately after sodding. Maintain seeded areas in accordance with Section 32 93 50. If necessary sub-areas may be deemed to have achieved Substantial Completion to allow maintenance period to begin in that area.

PART 2 - PRODUCTS

2.01 SOIL AMENDMENTS

A. Certification required. Non-sludge Class I compost in compliance with Colorado Department of Public Health and Environment Regulation 64. Available from Hageman Earth Cycle Inc., Ft Collins CO, Phone: 970-221-7173, or approved equal.
2.02 COMMERCIAL FERTILIZER
A. None

2.03 WATER
A. Clean, fresh and free of substances or matter which could inhibit vigorous growth of grass.
B. Available on-site at no expense to Contractor. Landscape Contractor is responsible for coordination of water needs for watering and irrigation water with the Owner.

2.04 SEED
A. Minimum seed purity shall be 95 percent with a minimum germination of 85 percent. The percentage of material, other than grass seed in the mixture, shall not include more than 18 percent non-viable seed, chaff, hulls, live seed of crop plants (other than those specified), or harmless inert matter. Weed shall not exceed 0.50 percent of the total weight of the mixture. Provide seed in labeled, original containers.
B. SUBSTITUTIONS: Do not make substitutions: If specified seed is not obtainable, submit proof of non-availability to Architect together with proposal for use of equivalent material for review and acceptance by Architect.

2.05 SEED MIXTURE
A. 1. Dryland Native Seed Mix, irrigated native seed mix drilled at a rate of 15 pounds pure live seed (PLS) per acre. Seed available from Arkansas Valley Seed, 303.320.7500.

<table>
<thead>
<tr>
<th>Variety</th>
<th>PLS Pounds Per Acre(drilled rates)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hard Fescue</td>
<td>2.25</td>
</tr>
<tr>
<td>Sheep Fescue</td>
<td>2.25</td>
</tr>
<tr>
<td>Canadian Bluegrass</td>
<td>2.25</td>
</tr>
<tr>
<td>Creeping Red Fescue</td>
<td>2.25</td>
</tr>
<tr>
<td>Buffalograss</td>
<td>3</td>
</tr>
<tr>
<td>Blue Grama Grass</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
</tr>
</tbody>
</table>

2.06 TACKIFIER
A. Plantago-based organic tackifier such as Agri-Tac, M-Binder, AZ/Tac or approved equal.

2.07 MULCH
A. WOOD CELLULOSE: Wood cellulose fiber mulch, dyed green, not containing any substance or factor which might inhibit germination. Mulch shall be supplied dry. Provide certification to Architect that mulch complies with above requirements.

PART 3 - EXECUTION
3.01 EXAMINATION
A. VERIFICATION OF CONDITIONS: Examine areas and conditions under which the Work of this Section will be performed. Report unsatisfactory or questionable conditions to the Architect. Do not proceed with the Work until unsatisfactory conditions have been corrected. Commencement of work implies acceptance of all areas and conditions.
1. Verify that during grading, topsoil spreading and landscape grading operations, the ground surface was be cleaned of materials which might hinder final operations.

3.02 PREPARATION
A. PROTECTION: Protect areas in accordance with paragraph 3.08 this Section.

3.03 SOIL PREPARATION FOR SEEDING
A. AMENDMENTS
1. Dryland Native Seeded Areas (Refer to Plans): The amendment quantities listed below are for bidding only. Modify quantities to conform to soil test results.
   a. Organics: apply 3 cubic yards per 1000 square feet of non-sludge Class 1 compost.
2. No fertilizer is to be applied to native seeded areas.

B. FINE GRADING: Disc and rototill to achieve a fine tilth to a minimum depth of 6". Coordinate with fine grading in accordance with Section 32 90 00: Fine Grading and Soil Preparation. Compact in accordance with Section 31 00 00: Earthwork.

C. Restore areas to specified condition if eroded or otherwise disturbed after fine grading and prior to seeding.

D. Obtain acceptance of final grading by the Architect prior to seeding.

3.04 SEEDING

A. After soil placement and preparation, roll the area to an evenly compacted, firm soil bed. Rework hard and soft areas.

B. Refer to Paragraph 2.05 this Section for seeding rates.

C. APPLICATION
   1. Mechanical Application: Seed by mechanical landscape type drills. Drill seed with approximately 1/2 inch of cover. Seed 50% of seed in one direction, and 50% at a 90 degree angle.
   2. Hydroseed Application: Seed by hydroseed method only when areas are too small or steep to drill seed. Make 2 passes perpendicular to each other. First pass shall include seed, fertilizer and water. Second pass shall include mulch and tackifier.

D. Do not seed areas in excess of that which can be mulched on the same day.

E. PLANTING SEASON: Plant in accordance with paragraph 1.08.A this Section.

F. Roll seeded area with roller not exceeding 100 lbs.

G. Apply mulch immediately following seeding and compacting or as part of seeding process, dependent on seeding method.

3.05 MULCHING

A. GENERAL
   1. Regardless of seeding method, all seeded areas require mulching.
   2. Mulch all areas within 24 hours after completion of seeding. Reseeded areas not mulched within 24 hours after seeding with specified seed mix at no cost to the Owner.
   3. Areas not properly mulched or areas damaged due to Contractor's negligence shall be repaired and re-mulched as specified at Contractor's expense.

B. MULCH APPLICATION:
   1. Hydromulch
      a. Utilize hydraulic equipment with nozzle adaptable for hydraulic mulching with storage tanks having means of estimating volume used or remaining in tank.
      b. Hydromulch shall consist of tackifier applied at a rate of 100 lbs. per acre and cellulose fiber mulch mixed to form a homogeneous slurry; spray applied to seeded area at a rate of 2,000 lbs. per acre.

C. WATERING IN: Apply water with a fine spray immediately after each area has been mulched. Saturate to 4 inches of soil.

3.06 FIELD QUALITY CONTROL

A. TESTS: Costs of tests and material analyses made by the testing agency will be borne by the Owner when tests indicate compliance and by the Contractor when test indicated non-compliance.
B. REVIEWS
2. Pre-Planting Review
   a. All finish grading shall be inspected by Architect prior to sodding commencing. Correct any discrepancies prior to sodding.
3. Substantial Completion
   a. Comply with General Contract Conditions.
   b. At the time of this walk-through, the Contractor shall have:
      1.) Cleaned all walkways and curbs of debris and litter and shall have cleaned areas of soil and debris left from planting operations.
7. Warranty and Replacement: Comply with General Contract Conditions.

3.07 CLEANUP
A. DURING LANDSCAPE INSTALLATION - All areas shall be reasonably clean at the end of each work day. Sidewalks and other paved areas shall be swept or washed down as needed. Keep pavements clean and work area in an orderly condition.
B. PROJECT COMPLETION: All debris, soil and trash resulting from landscape operations shall be removed from the site. All paved areas shall be washed down.

3.08 PROTECTION
A. Protect landscape work and materials from damage due to landscape operations, operations by other contractors and trades and trespassers.
B. Maintain protection during installation and maintenance periods. Treat, repair or replace damaged landscape work as directed.

END OF SECTION
PART 1 - GENERAL

1.01 SECTION INCLUDES
A. Examination.
B. Preparation.
C. General Planting Requirements.
D. Trees and Shrubs Planted in Individual Plant Pits or Trenches.
E. Shrubs, Perennials, Groundcovers + Bulbs Planted in Prepared Planting Beds.
F. Clean Up.
G. Field Quality Control.
H. Protection.

1.02 RELATED SECTIONS
A. Section 01 30 00: Administrative Requirements.
B. Section 01 40 00: Quality Requirements.
C. Section 32 84 00: Irrigation System.
D. Section 32 90 00: Fine Grading and Soil Preparation.
E. Section 32 92 00: Turf and Grasses.
F. Section 32 94 00: Planting Accessories

1.03 REFERENCE
A. American Standards for Nursery Stock (ANSI Z60.1 - most recent edition), American Association of Nurseymen, Washington D.C.

1.04 DEFINITIONS
B. PLANTS: Trees, shrubs, groundcovers, annuals perennials, and bulbs specified in the plant list.

1.05 SUBMITTAL PROCEDURES
A. Comply with Section 01 30 00. All submittals and plant materials shall be accepted by the Architect in writing before planting commences.
B. TOPSOIL TESTING
   1. Coordinate soil testing with General Conditions.
C. CERTIFICATES
   1. Submit certificates of inspection as required by governmental authorities.
   2. Submit manufacturer's certified analysis packaged with standard products.
D. ANALYSIS AND STANDARDS: Wherever applicable, for non packaged materials, provide analysis by recognized laboratory made in accordance with methods established by the Association of Official Agriculture Chemists.

E. PLANTING SCHEDULE: Submit in accordance with paragraph Section 01 33 00.

F. PLANT PHOTOGRAPHS: Submit one color photograph or TIFF or PDF digital file of all trees over 2 inch caliper or 7 foot height for any plant materials which are located outside of 30 mile radius of Denver for approval by Architect prior to shipment to the site or the contractor’ holding yard.

G. TREE PLANTING MATERIAL SUBMITTAL: Submit 1 tree collar and 1 sample of tree wrap.

H. SAMPLES: Submit 1 quart sample of wood chips for acceptance by Architect.

I. CONTRACTOR QUALIFICATIONS: Submit nursery and installation company qualifications in accordance with paragraph 1.06.B this Section for acceptance by Architect.

1.06 QUALITY REQUIREMENTS
A. Comply with Section 01 44 00

B. QUALIFICATIONS
1. Nursery: Company specializing in growing and cultivating the plants with minimum five (5) years experience, and certified by the State of Wyoming Department of Agriculture.

2. Installer: Company with minimum five (5) years successful experience in the installation of landscape areas similar in size and complexity to this project. Company shall be a member in good standing of one of the following organizations:
   a. Associated Landscape Contractors of America.
   b. American Association of Nurserymen.
   c. A member of the Nurserymen's Association of the state in which the work is being performed.

C. REGULATORY REQUIREMENTS
1. Comply with regulatory agencies concerning classification, transportation, handling and storage of plants, fertilizer, herbicide and pesticide materials.

2. Comply with regulatory agencies for fertilizer, herbicide and pesticide composition and application.

D. REJECTION OF MATERIALS
1. Evidence of inadequate or inappropriate protection after digging, transportation, or improper handling or storage, shall be cause for rejection.

2. Architect will inspect plants for proper shipping procedures upon arrival at the temporary storage location or the site. The Architect will reject injured plants including those with dried out roots, broken large branches, broken, or loosened balls or earth, split trunks or torn areas of bark.

3. The Contractor shall immediately remove and replace rejected plants.

E. PLANT LIST: Plant quantities are provided for the Contractor's convenience only. The Contractor shall provide all plants in quantities as shown on Drawings despite any discrepancies which may exist with quantities called for on the plant list.

1.07 DELIVERY, STORAGE AND HANDLING
A. PACKAGED MATERIALS: Deliver packaged materials in containers showing weight, analysis and name of manufacturer. Protect materials from deterioration during delivery, and while stored at site.

B. SHIPPING OF PLANTS
1. Plant Names and Labeling: Botanic and common names given in the plant list are in conformance with standard horticultural practice in the area. Deliver all
plants to the site with tags bearing the botanical name and size as indicated in the plant list.

2. Nursery Harvesting: Provide freshly dug trees and shrubs. Do not prune prior to delivery unless otherwise approved by Architect. Plants shall be dug and prepared for shipment in a manner that will not cause damage to branches, shape and future development after planting. Trunks shall be wrapped for added protection. All balled and burlapped trees are to be dug during the appropriate time of year for the species listed, but in no case after buds have opened or prior to fall leaf drop. Do not bend or bind-tie trees or shrubs in such manner as to damage bark, break branches or destroy natural shape. Wounds, scars or damage shall be grounds for rejection. Do not drop balled and burlapped stock during delivery.
   a. If necessary obtain Architect's approval to dig plants in full leaf. Spray foliage with antidessicant such as Wilt-proof or approved equal.

3. Transportation
   a. Open vehicles used to transport plants to the project shall be covered with tarpaulins or other suitable covers securely fastened to the vehicle to prevent damage to the plants. Closed vehicles shall be adequately ventilated to prevent overheating of the plants. Do not remove plants from refrigerated trucks into hot weather without allowing time for plants to adjust to heat.
   b. Ship landscape materials with certificates of inspection required by governing authorities. Comply with regulations applicable to landscape materials.
   c. Keep plants moist fresh and protected at all times.

4. Contractor shall exercise care in the handling of plant materials to avoid damage or stress.

C. ACCEPTANCE OF PLANTS AT SITE: Unless otherwise authorized by the Architect, the Contractor shall notify the Architect at least two working days in advance of the anticipated delivery date of any plant material. A legible copy of the bill of lading, showing the quantities, kinds, and sizes of materials included for each shipment shall be furnished to the Architect.

D. STORAGE AND PROTECTION OF PLANTS
   1. Keep plants moist fresh and protected at all times, including entire period of transit, handling, and temporary storage.
   2. Deliver trees and shrubs after preparations for planting have been completed and plant immediately. If planting is delayed more than 6 hours after delivery, set trees and shrubs in shade, protect from weather and mechanical damage, and keep roots moist by covering with mulch, burlap or other acceptable means of retaining moisture. Duration and method of storage are subject to Architect's approval. Plants shall not remain on the site more than 3 days prior to planting unless specific authorization is obtained by the Architect.

1.08 PROJECT/SITE CONDITIONS

A. ENVIRONMENTAL REQUIREMENTS
   1. Planting Season: Planting shall occur only after April 15 and before August 1 or as specified on the Drawings without written approval from Architect. All oak species (Quercus spp.) shall be planted no later than May 31.
   2. Planting shall occur only when weather and soil conditions permit in accordance with locally accepted practice. Do not plant during periods of prolonged cold or heat, or during excessively wet or dry periods.

B. EXISTING CONDITIONS
   1. Existing Plants: Do not damage any existing plantings indicated to remain. Plant areas after final grades are established in accordance with Section 32 91 00, unless otherwise directed by the Architect.
2. Utilities: Determine location of underground utilities. Perform work in a manner to avoid possible damage. Hand excavate, as required.

3. Excavation: Maintain grade stakes set by others until removal is mutually agreed upon by parties concerned. When conditions detrimental to plant growth are encountered, such as rubble fill, adverse drainage conditions, noxious materials or obstructions, notify Architect before planting.

1.09 SEQUENCING AND SCHEDULING
A. WORK SCHEDULING: Proceed with and complete landscape work as rapidly as portions of the site become available, working within the specified planting season and approved schedule.

B. COORDINATION
1. Coordinate with Contractor’s work requiring access to site through planting areas.
2. Coordinate with installation of underground irrigation system and outlets.
3. Coordinate Planting with Seeded and Sodded Areas: Plant trees and shrubs after final grades are established and prior to seeding and sodding, unless otherwise acceptable to Architect. If planting occurs after seeding or sodding, protect areas and promptly repair damage resulting from planting operations.
4. Coordinate planting to provide maintenance up to date of Substantial Completion in accordance with Paragraph 1.11 this Section.

1.10 WARRANTY AND REPLACEMENT
A. GENERAL: Refer to Division 1.

B. PLANT WARRANTY CONDITIONS: Warranty all plants against defects due to any cause including damage by animals except vandalism and acts of God for one (1) year from the date of Substantial Completion. The following warranty conditions apply:
1. Replant when plants are no longer in a satisfactory growing condition as determined by the Architect for the entire warranty period.
2. If plants fail after having been replaced previously, plant shall be replaced until it is approved. Replacement plants shall be of the same kind, condition and quality as original plants and subject to all requirements in this specification.
3. Plants shall be healthy, and in flourishing condition at the end of the warranty period. Plants shall be free of dying branches and branch tips, and shall bear foliage of normal density, size and color.
4. All expenses incurred in the replacements shall be borne by the Contractor.
5. Make replacements within seven days of notification by Architect.

C. POST CONSTRUCTION INSPECTION (REVIEW FOR FINAL WARRANTY COMPLIANCE): Comply with Division 1 requirements.

1.11 MAINTENANCE
A. GENERAL: Maintain plants by watering, fertilizing, pruning, restoring planting saucers, tightening and repairing stake supports, resetting trees and shrubs to proper grades or vertical position as required, spraying as required to keep trees and shrubs free of insects/disease/animals, cultivating and weeding as required for healthy growth or as directed by the Architect.
1. Monitor watering of plants and lawns to verify overwatering is not causing stress to trees.
2. Tree Wrap
   a. Apply a coating of insecticide and fungicide to the tree trunk area to be wrapped.
   b. Apply wrap to overlap 1 1/2" from ground line up to the lowest branch. Wrap trunks in late fall (approximately November 15).
   c. Tie securely in at least five places with jute twine, placed at least 12" apt.
   d. Remove tree wrap the beginning of the growing season (approximately April 15).
e. Do not wrap cottonwoods (Populus spp.).

B. MAINTENANCE PERIOD: Begin maintenance immediately after planting. Maintain plants in accordance with Section 329350. If necessary sub-areas may be deemed to have achieved Substantial Completion to allow maintenance period to begin in that area.

PART 2 PRODUCTS

2.01 SOIL AMENDMENTS

A. COMPOST: Non-sludge Class 1 Compost in compliance with Colorado Department of Public Health and Environment Regulation 64. Available from Hageman Earth Cycle Inc., Ft Collins CO, Phone: 970-221-7173, or approved equal.

2.02 COMMERCIAL FERTILIZER

A. Organic fertilizer: Provide fertilizer of neutral character, with some elements derived from organic sources and containing the percentages of available plant nutrients given below. Deliver fertilizers to the site fully labeled according to applicable state fertilizer laws and bearing the name, tradename, trademark and warranty of the supplier. Fertilizers which are mixed into soil shall be:

1. Biosol Forte organic granular fertilizer consisting of 96% fungal and bacterial biomass (dry mycelium), and 4% water. N-P-K Analysis: 7-2-1.
2. Guaranteed analysis shall conform to amendment requirements as given in Part 3 of this Section.
   a. Manufacturer: Rocky Mountain Bio Products. Supplied by Bowman/Revex, 14440 Mead Court, Longmont, CO 80504. Ph. (970) 535-0863, Fax. (970) 535-0866, or approved equal.
3. Bone Meal: Commercial, raw, finely ground; 4% nitrogen and 20% phosphoric acid.

B. INORGANIC FERTILIZERS: None.

2.03 WATER

A. Clean, potable and free of substances or matter which could inhibit vigorous growth of plants.

B. Available on-site at no expense to Contractor. Landscape Contractor is responsible for coordination of water needs for watering and irrigation water with the Owner.

2.04 GENERAL PLANT REQUIREMENTS

A. HEALTH: Plant materials provided shall:
   1. Be healthy and vigorous.
   2. Be free from disease, injury, insects and their eggs, larvae.
   3. Have a well developed fibrous root system.
   4. Be free of physical damage such as scrapes, broken or split branches, scars, bark abrasions, sun scalds, fresh limb cuts, disfiguring knots, or other defects.
   5. Be free of weed roots.

B. SIZE AND FORM: Plant materials provided shall
   1. Meet the sizes indicated on the Plant List. Where a size or caliper range is stated, at least 50% of the plants shall be closer in size to the top of the stated range. Plants larger or smaller than specified may be used only if accepted by the Architect.
   2. Meet the requirements of the reference standards for size, branching, condition, ball size, number of canes and all other conditions particular to each species.
   3. Be well branched and proportioned with respect to height and width relationships, and characteristic of the exact type called for in the plant list.

C. BALLED AND BURLAPPED PLANTS: Nursery grown stock adequately balled with firm, natural balls of soil in sizes and ratios in accordance with the reference standards. Balls
shall be firmly wrapped with non-treated burlap, secured with wire or jute. Broken balls will not be accepted.

D. CONTAINER GROWN PLANTS: Nursery grown in fibrous, plastic or metal containers and shall have sufficient roots to hold the entire soil mass together after container removal without being root-bound.

E. COLLECTED PLANTS: Plants collected from native stands or established plantings which have a root system greater than roots of nursery grown plants. Collected plants require a larger root ball than recommended for transplanted nursery stock as specified in reference standards. Collection tags shall be attached to each plant as required by regulatory agencies.

F. SPADED PLANTS: Plants shall be dug with tree spade and directly planted on site, or temporarily burlapped and placed in a wire basket while plant pit is hand dug on site. Size of tree spade in proportion to plant shall be as specified in reference standard for collected plants.

G. OPTIONS: If all other requirements are met, a balled and burlapped plant may be substituted for a container grown plant of the same or larger size at the Contractor's option upon acceptance of the Architect.

H. Architect shall inspect and tag all deciduous and evergreen trees at tree sources, within 30 miles of Denver, prior to digging and shipment to site. Approval of plant material from sources outside the 30 mile radius shall be reviewed in accordance with paragraph 1.05.F this Section.

I. SUBSTITUTIONS: Do not make substitutions: If specified landscape material is not obtainable, submit proof of non-availability to Architect together with proposal for use of equivalent material for review and acceptance by Architect.

2.05 DECIDUOUS TREES AND SHRUBS

A. Provide plants of height, size, condition and recommended branching configuration scheduled. Trees shall be uniformly shaped, quality plants with single leader, and evenly distributed branching in all directions.

B. If in leaf, trees shall be fully leafed-out with healthy, full and vigorous growth. Leaf damage caused by insects, hail and/or transplant shock shall be cause for rejection. If dormant, tree shall have pliable, green twigs and viable buds to indicate the healthy condition of plants, as appropriate to the species.

C. Adjacent plants of the same variety and size shall be consistent in size, shape, and overall appearance. Particular emphasis will be placed on this requirement for trees which occur in a straight row or otherwise formal relationship.

D. Trees with included bark will not be accepted.

2.06 EVERGREEN TREES AND SHRUBS

A. Provide plants of height, size, condition and recommended branching configuration scheduled. Trees shall be uniformly shaped, quality plants with single leader and evenly distributed branching in all directions.

B. Coniferous trees shall be heavily branched, full needled, low branching, specimen quality plants. Evidence of dormant buds and secondary needles shall be present. Damage caused by excessive pruning, insect infestation, galls or other plant disorders or damage shall be cause for rejection. Container grown evergreens will be acceptable subject to paragraph 2.04.D this Section.

C. Adjacent plants of the same variety and size shall be consistent in size, shape, and overall appearance. Particular emphasis will be placed on this requirement for trees which occur in a straight row or otherwise formal relationship.
2.07 GROUND COVERS, VINES AND PERENNIALS
A. Provide plants established and well-rooted in removable containers or integral peat pots with not less than minimum number and length of canes, runners or blades as required by the reference standard.

2.08 ACCESSORIES
A. TREE STAKES: Multi-stem and evergreen tree stakes: 6’ length, metal t-stakes
B. STAKING WIRE: Annealed, galvanized steel, 12 gauge wire.
C. TREE COLLAR: Non-stretch fabric with grommets, 1.5 inches wide by 12 inches length.
   1. Supplier: Central Bag and Burlap Co., 2715 Blake Street, Denver, CO 80205, (303)297-9955, or approved equal.
D. WRAPPING MATERIAL: First quality 4 inch wide, bituminous impregnated tape, corrugated or crepe paper, specifically manufactured for tree wrapping and having qualities to resist insect infestation.
E. PVC: 1/2” diameter PVC pipe.

PART 3 EXECUTION
3.01 EXAMINATION
A. VERIFICATION OF CONDITIONS: Examine areas and conditions under which the Work of this Section will be performed. Report unsatisfactory or questionable conditions to the Architect. Do not proceed with the Work until unsatisfactory conditions have been corrected. Commencement of Work implies acceptance of all areas and conditions.
   1. Verify that during grading, topsoil spreading and landscape grading operations, the ground surface was cleaned of materials which might hinder final operations.

3.02 PREPARATION
A. PROTECTION: Protect areas in accordance with paragraph 3.08 this Section.
B. LAYOUT: Stake locations of individual plants and outline areas for multiple plantings. Secure Architect’s approval prior to starting Work.

3.03 GENERAL PLANTING REQUIREMENTS
A. PLANTING SEASON: Plant in accordance with paragraph 1.08.A this Section.

3.04 TREES AND SHRUBS PLANTED IN INDIVIDUAL PLANT PITS OR TRENCHES
A. EXCAVATION FOR TREES AND SHRUBS IN INDIVIDUAL PLANT PITS OR TRENCHES
   1. Excavate pits, beds and trenches with sides shaped and sized as detailed. Scarify subsoil on bottom and sides of excavation.
   2. In tree pits without tree pit drains, fill each pit with water to test drainage. Pits shall drain within 24 hours.
      a. In the event non-draining soil is encountered, recommend to the Architect method to achieve subsurface drainage from details on the Drawings.
      b. Drainage system shall be approved by Architect prior to installation.
      c. Payment for subsurface drainage not included in the original Drawings shall be in accordance with the unit price submitted during base bid.
   3. For balled and burlapped and container grown stock, excavate as shown on the Drawings. Adjust excavation to size of container width and depth, shaping excavation as indicated.
   4. Preserve soil removed from tree and shrub planting excavations for reuse as tree and shrub planting soil.
B. SOIL PREPARATION FOR TREES AND SHRUBS IN INDIVIDUAL PLANT PITS
1. Clean soil in plant pits of roots, plants, sods, stones over 1.5 inches, clay lumps, asphaltic materials, concrete, metal and wire fragments and other extraneous materials harmful or toxic to plant growth. Remove contaminated subsoil.
2. Mix soil amendments with soil from pit at rates specified below:
   70% soil from pit by volume
   30% compost by volume
3. Uniformly mix planting soil mix, turning several times to achieve a uniform, evenly blended consistency, free of all pockets of unblended materials and any clods or stones greater than 1.5 inches in their greatest dimension.

C. PLANTING TREES AND SHRUBS IN INDIVIDUAL PLANT PITS
1. Plant container grown and balled and burlapped (B&B) material in same manner except where noted.
2. Place planting soil mix in pit and compact to depth which will place top of rootball at specified height above surrounding grade. Set plants slightly high, as detailed and accepted by the Architect.
3. Set plant on layer of compacted planting soil mix, plumb and in center of pit or trench with top of ball at required elevation.
4. Place plant for best appearance for review and final orientation by the Architect.
5. Remove non-biodegradable root containers.
   a. Wire Baskets: Cut and remove wire baskets.
   b. Containers: Cut container cans on 2 sides with an approved can cutter; remove container so as not to damage root balls; a spade shall not be used.
6. When set, place additional backfill around base and sides of root ball, and work each layer to settle backfill and eliminate voids and air pockets. When excavation is approximately 2/3 full, water thoroughly. Repeat watering until no more is absorbed.
7. Place remaining planting soil mix and tamp firmly. Water again after placing final layer of planting soil mix.
8. Dish top of backfill to allow for mulching as indicated.
9. Unless otherwise directed by Architect, do not cut tree leaders and remove only injured or dead branches from trees and shrubs, if any. Make flush cuts perpendicular to the secondary branches being removed in accordance with the References.
10. Remove and replace excessively pruned or stock.
11. Stake trees immediately after planting, as detailed using stakes or guying as noted on planting plan. Set trees plumb. Wrap only trees noted on plant list.

3.05 TREES, SHRUBS, PERENNIALS GROUNDCOVERS AND BULBS PLANTED IN PREPARED CONTINUOUS PLANTING BEDS AND PLANTERS
A. SOIL PREPARATION FOR SHRUBS, PERENNIALS AND GROUNDCOVERS PLANTED IN AT GRADE PREPARED PLANTING BEDS
1. Prior to placing imported topsoil mix, disc or scarify existing subsoil in planting beds to a minimum depth of 6 inches or to a depth as indicated in drawings using a cultimulcher or similar equipment. Remove roots, plants, sods, stones over 1.5 inches, clay lumps, asphaltic materials, concrete, metal and wire fragments and other extraneous materials harmful or toxic to plant growth. Remove contaminated subsoil.
2. Soil Preparation for Planting Beds
   a. Organics: Apply 5 cubic yards per 1,000 square feet of compost by volume.
   b. Fertilizer: Apply 25 pounds of Biosol Forte organic granular fertilizer per 1,000 square feet. Verify application rate after reviewing soils analysis.
c. Incorporate 50% of the required organic amendments and fertilizer. Thoroughly rototill into existing subsoil to a depth of 5 inches to achieve a uniform, evenly blended consistency free of all pockets of unblended materials and any clods or stones greater than 1.5 inches.

d. Spread imported topsoil mix in accordance with Section 32 91 00 over amended subsoil in all planting bed areas. Remove roots, plants, sods, stones over 1.5 inches, clay lumps, asphaltic materials, concrete, metal and wire fragments and other extraneous materials harmful or toxic to plant growth.

e. Incorporate remaining 50% of the required organic amendments and fertilizer with topsoil mix. Rototill to a depth of 7 inches. Apply and rototill in fertilizer no more than 48 hours before planting.

f. Fill prepared planting bed with water and allow to percolate out before planting. If water does not drain out in 24 hours, notify Architect.

1.) In the event non-draining soil is encountered, recommend to Architect method to achieve subsurface drainage.

2.) Drainage system shall be approved by Architect prior to installation. Total depth of soil mixture shall be a uniform 10 inches in all planting beds after light rolling and natural settlement or as indicated in drawings. Compact soil in planting beds to 90% Proctor dry density in accordance with the project geotechnical report and the City of Cheyenne standard specifications.

B. SOIL PREPARATION FOR PLANTERS:

1. Soil Mix for Planters:
   a. Imported, pre-amended topsoil mix in accordance with Section 32 90 00.
   b. Fertilizer: Apply 25 pounds of Biosol Forte organic granular fertilizer per 1,000 square feet. Verify application rate after reviewing soils analysis.
   c. Soil pH range: 5.5 to 7. Add amendments if necessary.
   d. Substantiate quantities with delivery tickets and empty manufacturer's bags on a daily basis to Architect.
   e. Fill planters in accordance with the Drawings. Fill planters no more than 48 hours before planting. Fill planters with pre-amended topsoil mix in 6" lifts and compact each lift to 90% in accordance with Section 31 00 00.

C. PLANTING SHRUBS, GROUND COVERS, VINES, AND PERENNIALS IN PREPARED PLANTING BEDS AND PLANTERS

1. Plant container grown and balled and burlapped (B&B) material in same manner except where noted.

2. Space plants as shown on the Drawings.

3. Place plant for best appearance for review and final orientation by the Architect.

4. Remove non-biodegradable root containers, including wire baskets. Cut container cans on 2 sides with an approved can cutter; remove stock so as not to damage root balls. A spade shall not be used.

5. Dig holes large enough to allow for rootball container and backfill with amended soil in the plant beds or soil mix in planters.

6. Work soil around roots to eliminate air pockets and leave a slight saucer indentation around plants to hold water. Water thoroughly after planting, taking care not to cover crowns of plants with wet soils.

7. Dish top of backfill to allow for mulching as indicated.

8. Unless otherwise directed by Architect, remove only injured or dead branches from shrubs, if any. Make flush cuts perpendicular to the secondary branches being removed.

9. Remove and replace excessively pruned or stock.

3.06 FIELD QUALITY CONTROL
A. TESTS: Costs of tests and material analyses made by the testing agency will be borne by the Owner when tests indicate compliance and by the Contractor when test indicated non-compliance.

B. REVIEWS
1. General: Comply with Division 1.
2. Pre-Planting Review
   a. Plant Procurement Inspection
      1.) Contractor shall notify Architect upon selection of all trees and shall designate source and location for inspection. Proposed materials shall be flagged by the Contractor to facilitate inspection.
      2.) Architect may choose to attach his seal to each tree or to representative samples. Inspection and/or sealing of plants by the Architect at the source does not preclude his rejection of trees for improper handling, transportation, storage, damage, insects or disease or otherwise not meeting this specification at the site of planting.
      3.) Do not ship trees to site without the Architect's approval.
   b. Plant Inspection
      1.) All plant materials must be inspected by the Architect at supplier's or contractor's nursery and at the site before planting commences. Tag acceptable plant material with Contractor's numbered tag and verify upon arrival at the project site. Notify Architect 48 in advance to request inspection of plant material. Any materials planted prior to acceptance are subject to rejection. Inspection of plant materials may be sequenced by major planting areas to accommodate efficient planting operations. All rejected materials must be removed from the site, replaced and re-inspected before any additional inspections are made.
      2.) The Architect may elect to inspect trees and shrubs at place of growth before planting, for compliance with requirements for genus, species, variety, size and quality. Architect retains the right to further inspect trees and shrubs for size and conditions of balls and root systems, insects, injuries and latent defects, and to reject unsatisfactory or defective material at any time during progress of work.
      3.) If, in the opinion of the Architect, there is probable cause to suspect root damage, root binding, or disease conditions in the container stock plants, the Contractor will remove the container for the Architect's inspection before planting.
         (a). Grading: All finish grading shall be inspected by Architect prior to planting commencing. Correct any discrepancies prior to planting.
         (b) Staking: Stake all tree and shrub locations with flags. Architect shall inspect the staked locations before digging shall occur. The Contractor shall give the Architect 48 hours notice to request inspection of staked locations.

3. Substantial Completion
   a. Comply with General Conditions.
   b. At the time of this walk-through, the Contractor shall have:
      1.) Established all planted areas free of weeds, and neatly cultivated. All plant basins shall be in good repair. Pruning shall be completed.
2.) Verified installed irrigation system is fully operational with heads properly adjusted.
3.) Cleaned all walkways and curbs of debris and litter and shall have cleaned areas of soil and debris left from planting operations.

4. Final Completion: Comply with General Conditions.
5. Closeout Documents: Comply with General Conditions.
6. Start Up and Instructions: Comply with General Conditions.
7. Warranty and Replacement: Comply with General Conditions.
8. Post Construction Inspection: Comply with General Conditions.

3.07 CLEANUP
A. DURING LANDSCAPE INSTALLATION - All areas shall be reasonably clean at the end of each work day. Sidewalks and other paved areas shall be swept or washed down as needed. Keep pavements clean and work area in an orderly condition.
B. PROJECT COMPLETION: All debris, soil and trash resulting from landscape operations shall be removed from the site. All paved areas shall be washed down. All tags shall be removed from plant material.

3.08 PROTECTION
A. Protect landscape work and materials from damage due to landscape operations, operations by other contractors and trades and trespassers.
B. Maintain protection during installation and maintenance periods. Treat, repair or replace damaged landscape work as directed.

END OF SECTION
PART 1 GENERAL

1.01 SECTION INCLUDES

A. Tree and Plant Maintenance.
B. Turf Maintenance.
C. Irrigation System Maintenance.
D. Clean Up.
E. Protection.

1.02 RELATED SECTIONS

A. Section 01 30 00: Administrative Requirements
B. Section 01 40 00: Quality Requirements
C. Section 32 84 00: Irrigation System
D. Section 32 90 00: Fine Grading and Soil Preparation.
E. Section 32 92 00: Turf and Grasses.
F. Section 32 93 00: Planting.
G. Section 32 94 00: Planting Accessories

1.03 REFERENCE

A. American Standards for Nursery Stock (ANSI Z60.1 - most recent edition), American Association of Nurserymen, Washington D.C.
G. ASPA (American Sod Producers Association) - Guideline Specifications to Sodding.

1.04 DEFINITIONS

B. PLANTS: Trees, shrubs, groundcovers, annuals, perennials, and bulbs specified in the plant list.

1.05 SUBMITTAL PROCEDURES

A. Comply with Section 01 30 00.
B. Submit in typewritten form:
   1. Maintenance company qualification for acceptance by Architect and Owner prior to commencing Work. Include hourly rates for maintenance personnel. Submit 2 weeks prior to Final Acceptance walk-through.
   2. Procedures which Contractor shall complete during the maintenance period.
a. Include proposed herbicide, insecticides, fertilizers, and any other chemical treatment to the Architect for review and approval prior to commencing Work.

3. Procedures to be established by the Owner, upon completion of maintenance period, for one year maintenance of landscape. Submit 3 months prior to the expiration of the maintenance period.

1.06 QUALITY REQUIREMENTS

A. Comply with Section 01 40 00.

B. QUALIFICATIONS

1. Maintenance Company: The work of this Section shall be the responsibility of the landscape subcontractors ONLY. This Section may be performed by the landscape subcontractor or his sub-subcontractor. Company shall be a member in good standing of one of the following organizations:
   a. Associated Landscape Contractors of America.
   b. American Association of Nurserymen.
   c. A member of the Nurserymen's Association of the state in which the work is being performed.

2. Work Force: Contractor's representative shall be experienced in the maintenance and repair of all types of plantings and irrigation systems which are part of this Contract.

C. REGULATORY REQUIREMENTS

1. Comply with regulatory agencies concerning classification, transportation, handling and storage of plants, fertilizer, herbicide and pesticide materials.

2. Comply with regulatory agencies for fertilizer, herbicide and pesticide composition and application.

3. Licenses and Taxes:
   a. Licenses: Contractor shall obtain and pay for all licenses required by city, county, state and federal governments that are necessary for the legal conduct of his business.
   b. Taxes: Contractor shall pay all applicable taxes, including sales taxes on materials supplied.

PART 2 - PRODUCTS

2.01 MATERIALS

A. MATERIALS: All materials used in maintenance and repair shall conform to these Specifications or shall be otherwise accepted by the Owner.

PART 3 EXECUTION

3.01 GENERAL

A. GENERAL: Furnish all supervision, labor, material, equipment and transportation required to maintain the planting lawn and irrigation system called for under this Contract, in an attractive, healthy, operable condition for a period of ninety (90) days from the date of Substantial Completion including spring start-up of the irrigation system and coordination with the Owner. Contractor shall be responsible for all maintenance and shall provide winter watering as needed to insure healthy, vigorous plant growth. Contractor is to be on site every two weeks to maintain plant material and irrigation.

B. PRE-MAINTENANCE INSPECTION: Schedule pre-maintenance inspection prior to the beginning of the warranty period in accordance with Sections 32 92 00, and 32 93 00.

3.02 TREE AND PLANT MAINTENANCE

A. WATERING: Maintain large enough water basin around plants so that enough water can be applied to establish moisture through the major root zone. When hand watering, use a water wand to break the water force. Utilize mulches to reduce evaporation and watering frequency. Contractor is responsible for all winter water requirements.
B. PRUNING: None required except at time of planting and as needed to correct damage.

C. STAKES AND GUYS: Inspect regularly to prevent girdling of trunks or branches and to prevent rubbing which might cause bark wounds. Remove and replace stakes and guys as directed by the Owner’s Representative. Stakes and guys to be removed after one year from Final Acceptance.

D. WEED CONTROL: Maintain tree and shrub basins free of weeds and grasses on a weekly basis using a pre-approved herbicide. Frequent soil cultivation which might destroy shallow roots is not permitted. Apply approved pre-emergent herbicide to shrub beds in the spring. Use of mulches to prevent seed germination is permitted.

E. INSECT/DISEASE/ANIMAL CONTROL: Control insects/disease/animals as necessary to prevent damage to the health or appearance of plants. Use only approved materials and methods.

F. FERTILIZATION: Fertilize trees and shrubs by means of foliar application of an approved water soluble fertilizer. Submit fertilizer specifications to Architect for approval. Fertilize trees and shrubs at the following times when they occur during the maintenance period:
   1. Early April.
   2. June.
   3. Early August.

G. REPLACEMENT OF PLANTS: Replace plant material during the warranty period in accordance with Sections 32 84 00, 32 92 00, and 32 93 00. Remove dead and dying plants and replace with plants of equal size, condition and variety of original planting. Make replacements within 7 days of notification from Owner except as prohibited by season and authorized by the Owner, and remove rejected plants within 7 days of notice.

H. TREE PROTECTION: Remove and/or apply tree wrap starting from the bottom up. Wrap all deciduous trees, except for Cottonwoods (Populus spp.).
   1. Apply a coating of insecticide and fungicide to the tree trunk area to be wrapped.
   2. Apply wrap to overlap 1 1/2” from ground line up to the lowest branch. Wrap trunks in late fall (approximately November 15).
   3. Tie securely in at least five places with jute twine, placed at least 12” apart.
   4. Remove tree wrap the beginning of the growing season (approximately April 15).

I. EMERGENCY REPAIRS: Contractor shall be available to the Owner at any time during the maintenance period to perform emergency repairs that may be necessary. Costs will be negotiated by the Owner and the Contractor at the time based on Contractor’s submitted hourly rates.

3.03 TURF MAINTENANCE

A. Mowing and Edging: Trim edges of curbs and walks at least twice monthly or as needed for neat appearance. Pick up trash before each mowing. Vacuum or Blow off and remove clippings from walks and streets. Mowing schedule to be reviewed by and coordinated with the Owner. Remove grass clippings from the premises. Trimming up of lower branches of trees and shrubs for ease of maintenance is not permitted. Mow areas as follows:
   1. Dryland Grass: Mow dryland grass seeded areas. Mow prior to flowering of weeds. Mow to a height of 4-6” at least three times during the growing season.

B. Weed Control: Control broad-leaf weeds in turfgrass seeded areas only, not areas seeded with wildflowers. Use selective herbicides as accepted by Owner. Follow all manufacturer’s recommendations and precautions.

C. Insect and Disease Control: Apply necessary insecticides and fungicides as condition of turf requires and as approved by the Owner.

D. DRYLAND SEED: Contractor to irrigate dryland seed until Section 32 92 00, 1.10B establishment requirements are met.
3.04 IRRIGATION SYSTEM MAINTENANCE

A. REVIEWS AND REPAIRS: Check all systems for proper operation after each mowing. Make all repairs before the next watering cycle. Any damage caused to the system by Contractor’s operations shall be repaired at no cost to the Owner.
   1. Correct any repairs needed as a result of improper winterization or negligence due to the Contractor at no additional cost to the Owner.

B. CONTROLLER PROGRAMMING: Program the irrigation controller including schedule, cycles, amount of water, etc. Review watering schedule with Owner.
   1. Take extra care to balance the requirements of trees, shrubs and lawns which are in the same vicinity. Adjust watering timing and rates frequently to insure the health of each type of plant material. Adjust sprinkler nozzle settings and sizes to refine application rates in specific areas as necessary.

C. WINTERIZATION: Under the maintenance period, drain the system in preparation for the first winter after construction. Remove all water from the system using compressed air.

D. SPRING START-UP: Under the maintenance period, Contractor shall be responsible for starting up the irrigation system in the spring. Activate the system and demonstrate that it is in full working order. Repairs needed as a result of improper winterization or negligence due to the Contractor shall be corrected by the Contractor at no additional cost to the Owner.

3.05 CLEANUP

A. DURING LANDSCAPE MAINTENANCE: All areas shall be reasonably clean at the end of each work day. Sidewalks and other paved areas shall be swept or washed down as needed. Keep pavements clean and work area in an orderly condition.

3.06 PROTECTION

A. Protect landscape work and materials from damage due to landscape operations, operations by other contractors and trades and trespassers.

B. Treat, repair or replace damaged landscape work as directed.

C. Protect adjacent pavements from fertilizer staining.

END OF SECTION
SECTION 32 94 00
PLANTING ACCESSORIES

PART 1 - GENERAL

1.01 SECTION INCLUDES
   A. Examination.
   B. Preparation.
   C. Wood Mulch.
   D. Cobble Mulch.
   E. Weed Barrier Fabric.
   F. Field Quality Control.
   G. Clean Up.
   H. Protection.

1.02 RELATED SECTIONS
   A. Section 01 30 00: Administrative Requirements.
   B. Section 01 40 00: Quality Requirements.
   C. Section 32 84 00: Irrigation System.
   D. Section 32 90 00: Fine Grading and Soil Preparation.
   E. Section 32 92 00: Turf and Grasses.
   F. Section 32 93 00: Planting.

1.03 REFERENCES

1.04 DEFINITIONS

1.05 SUBMITTAL PROCEDURES
   A. Comply with Section 01 30 00. All submittals shall be accepted by the Architect in writing before planting commences.
   B. DESCRIPTIVE PRODUCT DATA: Submit catalog cuts, brochures, and analyses of any manufactured items.
   C. CERTIFICATES
      1. Submit certificates of inspection as required by governmental authorities.
      2. Submit manufacturer’s certified analysis packaged with standard products.
   D. ANALYSIS AND STANDARDS: Wherever applicable, for non packaged materials, provide analysis by recognized laboratory made in accordance with methods established by the Association of Official Agriculture Chemists.
E. MULCH SUBMITTAL: Submit 1 quart sample of each mulch type to be installed, full color range. Obtain Architect's approval prior to bulk delivery to site.

1.06 QUALITY REQUIREMENTS
A. Comply with Section 01 40 00.
B. REGULATORY REQUIREMENTS: Comply with regulatory agencies concerning classification, transportation, handling and storage of landscape materials.

1.07 DELIVERY, STORAGE AND HANDLING
A. Comply with Section 01 40 00.
B. PACKAGED MATERIALS: Deliver packaged materials in containers showing weight, analysis and name of manufacturer. Protect materials from deterioration during delivery, and while stored at site.
C. MULCH: Exercise care in the storage of mulches on site to avoid mixing soil with mulch.
D. REJECTION OF MATERIAL
   1. Evidence of inadequate protection or improper handling or storage, shall be cause for rejection.
   2. Any product or material exhibiting signs of damage due to nonconformity to specifications or due to delivery, storage or handling shall be rejected by the Architect. Contractor shall be responsible for hauling off-site and disposing of according to general conditions and codes of the governing jurisdiction.

1.08 PROJECT/SITE CONDITIONS
A. ENVIRONMENTAL REQUIREMENTS: Work shall occur only when weather and soil conditions permit in accordance with locally accepted practice.
B. EXISTING CONDITIONS
   1. Existing Plants: Do not damage any existing plantings indicated to remain.
   2. Utilities: Determine location of underground utilities. Perform work in a manner to avoid possible damage. Hand excavate, as required.
   3. Excavation: Maintain grade stakes set by others until removal is mutually agreed upon by parties concerned.

1.09 SEQUENCING AND SCHEDULING
A. WORK SCHEDULING: Proceed with and complete landscape work as rapidly as portions of the site become available, working within the specified planting season and approved schedule.

1.10 WARRANTY AND REPLACEMENT
A. GENERAL: Refer to General Conditions.

1.11 MAINTENANCE
A. GENERAL: Maintain Work in accordance with standard industry practice or as directed by the Architect.
B. MAINTENANCE PERIOD: Begin maintenance immediately after Work is completed. Maintain areas until Final Acceptance.

PART 2 - PRODUCTS
2.01 WATER
A. Clean, potable and free of substances or matter which could inhibit vigorous growth of plant material.
B. Available on-site at no expense to Contractor. Landscape Contractor is responsible for coordination of water needs for watering and irrigation water with the Owner.
2.02 WOOD MULCH
A. Double ground ‘No Blow’ mulch, free from deleterious materials and suitable for top dressing of trees, shrubs and ground covers. Mulch shall be of a long fibrous nature capable of matting together and interlocking when moistened and settled. Shredded cedar bark mulch or accepted substitute.
B. Submit samples prior to delivery to the site in accordance with paragraph 1.05.E this Section.
C. SUBSTITUTIONS: Do not make substitutions: If specified wood mulch is not obtainable, submit proof of non-availability to Architect together with proposal for use of equivalent material for review and acceptance by Architect.

2.03 COBBLE MULCH
A. Cobble mulch at rain garden: 4-6” rounded river cobble. Mountain Stone, Cheyenne, WY. (307) 433-9515 or approved equal.
B. Submit samples prior to delivery to the site in accordance with paragraph 1.06.E this Section.
C. SUBSTITUTIONS: Do not make substitutions: If specified wood mulch is not obtainable, submit proof of non-availability to Architect together with proposal for use of equivalent material for review and acceptance by Architect.

2.04 WEED BARRIER FABRIC
A. FABRIC: Nonwoven porous fabric, Tencate Mirafi MSCAPE, for use as indicated in details.
B. MANUFACTURER: Mirafi, 365 South Holland Drive, Pendergrass, GA 30567, (706) 693 2226, www.mirafi.com or approved equal.

PART 3 - EXECUTION
3.01 EXAMINATION
A. VERIFICATION OF CONDITIONS: Examine areas and conditions under which the Work of this Section will be performed. Report unsatisfactory or questionable conditions to the Architect. Do not proceed with the Work until unsatisfactory conditions have been corrected. Commencement of work implies acceptance of all areas and conditions.
1. Verify that during grading, topsoil spreading and landscape grading operations, the ground surface was cleaned of materials which might hinder final operations.

3.02 PREPARATION
A. PROTECTION: Protect areas in accordance with paragraph 3.07 this Section.
B. All areas within the limits of planting shall be seeded, planted with trees, shrubs, groundcovers, perennials or mulched as indicated on the Drawings and Specifications.

3.03 WOOD MULCH
A. Shrub, Perennial and Groundcover Beds: Mulch areas between ground cover plants where noted in drawings. Place mulch 3 inches thick under shrubs, 2 inches thick under groundcovers/grasses. Cover entire area of planting bed.
B. Individual Plants: Mulch planted areas around individual trees as shown on details. Provide minimum 4 inches of mulch. Finish level with adjacent finish grades.

3.04 COBBLE MULCH
A. Place cobble 6” deep over weed barrier fabric at rain garden.

3.05 FIELD QUALITY CONTROL
A. TESTS: Costs of tests and material analyses made by the testing agency will be borne by the Owner when tests indicate compliance and by the Contractor when test indicated non-compliance.

B. REVIEWS
1. General: Comply with General Conditions.
2. Pre-Planting Review
   a. All mulches and edging shall be inspected and accepted at the site by the Architect before they are used in planting operations.
3. Substantial Completion
   a. Comply with General Conditions.
   b. At the time of this walk-through, the Contractor shall have:
      1.) Installed all items in accordance with this Section.
      2.) Cleaned all walkways and curbs of debris and litter and shall have cleaned areas of soil and debris left from planting operations.
4. Final Completion: Comply with Section General Conditions.
5. Closeout Documents: Comply with Section General Conditions.
6. Start Up and Instructions: Comply with Section General Conditions.
7. Warranty and Replacement: Comply with Section General Conditions.
8. Post Construction Inspection: Comply with Section General Conditions.

3.06 CLEANUP
A. DURING LANDSCAPE INSTALLATION: All areas shall be reasonably clean at the end of each work day. Sidewalks and other paved areas shall be swept or washed down as needed. Keep pavements clean and work area in an orderly condition.

B. PROJECT COMPLETION: All debris, soil, trash, and excavated and/or stripped material resulting from landscape operations and unsuitable for or in excess of requirements for completing work of this Section shall be disposed of off-site. All paved areas shall be washed down.

3.07 PROTECTION
A. Protect landscape work and materials from damage due to landscape operations, operations by other contractors and trades and trespassers.

B. Maintain protection during installation and maintenance periods. Treat, repair or replace damaged landscape work as directed.

END OF SECTION
MODIFIED WYDOT MITERED END SECTION
WYDOT STANDARD DETAIL 603-4 MODIFIED FOR 8:1 LONGITUDINAL SLOPE.

GALVANIZED STEEL MEETING AASHTO M218.

GRATE BARS SHALL BE SCHEDULE 40 GALVANIZED STEEL PIPE. PROVIDE SLOTTED HOLES FOR SAFETY BAR ATTACHMENT.

TOE PLATE EXTENSIONS (REQUIRED) SHALL BE THE SAME GAGE AS END SECTION.

GRADE SURROUNDING AREA TO MATCH 8:1 LONGITUDINAL SLOPE
4:1 MAX. CROSS-SLOPE

By Architectural Means, P.C.
12/16/16
CHEYENNE, WYOMING
1400 EAST COLLEGE DRIVE
LARAMIE COUNTY COMMUNITY COLLEGE
GATEWAY FOR SECONDARY ENTRIES
100% CD SET
1. **EVERGREEN TREE**
   - NT5

2. **MULTI-STEM TREE**
   - NT5

3. **GROUNDCOVERS/PERENNIALS/ORNAMENTAL GRASSES**
   - NT5

4. **SHRUB**
   - NT5

5. **TREE PROTECTION FENCE**
   - NT5

6. **8" CONCRETE MOWBAND**
   - 3/4" = 1'-0"

7. **BULB**
   - NT5
By Architectural Means, P.C.
CHEYENNE, WYOMING
1400 EAST COLLEGE DRIVE
LARAMIE COUNTY COMMUNITY COLLEGE
GATEWAY FOR SECONDARY ENTRIES
12/16/16
100% CD SET

LANDSCAPE ARCHITECT
900 E. Louisiana Ave.
Suite 289
Denver, Colorado 80210
P 303.733.7558

OVERALL IRRIGATION PLAN

REFER TO ENLARGEMENT, SHEET I1.02, FOR IRRIGATION IN THIS AREA.
REFER TO ENLARGEMENT, SHEET I1.03, FOR IRRIGATION IN THIS AREA.

WALL-MOUNT IRRIGATION CONTROLLER EXISTS AT APPROXIMATE LOCATION SHOWN. EXTEND NEW CONTROL AND COMMON WIRES FROM CONTROLLER TO NEW VALVES AND WIRE STUB-OUT LOCATIONS AS NOTED ON PLANS.
NEW TRACER WIRE SHALL ORIGINATE AT CONTROLLER AND EXTEND TO ENDS OF NEW MAINLINE AS NOTED ON PLANS.

OFF-SET WIRE TRENCH 10 FT. (MIN.) FROM EDGE(S) OF PAVED SURFACES (TYP.)
INSTALL ONE 2" HDPE SLEEVE UNDER EXISTING ROAD VIA. MECHANICAL BORING. POT-HOLE ALL UTILITIES TO VERIFY LOCATION AND DEPTH PRIOR TO START OF BORING OPERATIONS.
Irrigation Construction Notes

1. ALL BASE INFORMATION HAS BEEN TAKEN FROM DRAWINGS PREPARED BY LIME GREEN DESIGN.
2. REFER TO TECHNICAL SPECIFICATIONS AND CONSTRUCTION DETAILS FOR INSTALLATION PROCEDURES.
3. REFER TO PLANTING PLAN FOR EXACT TREE LOCATIONS AND QUANTITIES. TREES SHOWN ON IRRIGATION PLANS ARE APPROXIMATE.
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10. REFER TO PLANTING PLAN FOR EXACT TREE LOCATIONS AND QUANTITIES. TREES SHOWN ON IRRIGATION PLANS ARE APPROXIMATE.

Irrigation Equipment and Materials Schedule

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<th>Description</th>
<th>Quantity</th>
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Legend:
- IRRIGATION SYSTEMS HAVE BEEN DESIGNED TO BE ANNUALLY WINTERIZED UTILIZING COMPRESSED AIR.
- CONTRACTOR SHALL FIELD VERIFY PRESSURE AT BACKFLOW PREVENTER LOCATION FOR EACH TAP PRIOR TO ORDERING MATERIALS OR STARTING ANY IRRIGATION INSTALLATION AND NOTIFY CONSULTANT OF ANY DIFFERENCES FROM STATED PRESSURE. IF CONTRACTOR FAILS TO NOTIFY CONSULTANT HE ASSUMES FULL RESPONSIBILITY FOR ANY SYSTEM ALTERATIONS. EACH SYSTEM HAS BEEN DESIGNED FOR A DYNAMIC PRESSURE OF 65 PSI.
- LATERAL PIPING DIAMETERS SHALL INCLUDE 1". 3/4" DIAMETER LATERAL PIPE IS NOT ACCEPTABLE.
- REFER TO PLANTING PLAN FOR EXACT TREE LOCATIONS AND QUANTITIES. TREES SHOWN ON IRRIGATION PLANS ARE APPROXIMATE.
- REFER TO LANDSCAPE/Maintenance SPECIFICATIONS FOR SEED ESTABLISHMENT AND ACCEPTANCE CRITERIA.
- CONTRACTOR SHALL BE RESPONSIBLE FOR HAND-WATERING NATIVE SEED AREAS UNTIL AN ACCEPTABLE STAND OF GRASS IS ESTABLISHED.
- REFER TO TECHNICAL SPECIFICATIONS AND CONSTRUCTION DETAILS FOR INSTALLATION PROCEDURES.
- INSTALL TWO SPRAY HEADS AT EACH EXISTING TREE LOCATION. HAND-DIG ALL TRENCHES WITHIN DRIP LINES OF TREES (TYP.).
- INSTALL ONE 4" & ONE 2" HDPE SLEEVES UNDER ROAD VIA MECHANICAL BORING. POT-HOLE EXISTING UTILITIES TO VERIFY LOCATION AND DEPTH PRIOR TO START OF BORING OPERATIONS. BORE DEPTH 30"-36".
- EXTEND SLEEVES 10 FT. BEYOND EDGE OF PAVED SURFACE.
- INSTALL TWO SPRAY HEADS AT EACH EXISTING TREE LOCATION. HAND-DIG ALL TRENCHES WITHIN DRIP LINES OF TREES (TYP.).
EXTEND SLEEVES 10 FT. BEYOND EDGE OF PAVED SURFACE (TYP. BOTH ENDS) VIA MECHANICAL BORING. POT-HOLE EXISTING UTILITIES TO VERIFY LOCATION AND DEPTH PRIOR TO START OF BORING OPERATIONS. BORE DEPTH - 30"-36"

INSTALL ONE 6" & ONE 2" HDPE SLEEVES UNDER ROAD. EXTEND SLEEVES 10 FT. BEYOND EDGE OF PAVED SURFACE (TYP.) VIA MECHANICAL BORING. POT-HOLE EXISTING UTILITIES TO VERIFY LOCATION AND DEPTH PRIOR TO START OF BORING OPERATIONS. BORE DEPTH - 30"-36"

INSTALL TWO SPRAY HEADS AT EACH EXISTING TREE LOCATION. HAND-DIG ALL TRENCHES WITHIN DRIP LINES OF TREES (TYP.)

IRRIGATION WIRING (NEW) - INSTALL AT 18" DEPTH TIE ONTO 3" GATE VALVE AT INDICATED LOCATION AND EXTEND 3" SCHEDULE 40 PVC MAIN AS SHOWN

GRADE AND SEED TRENCHES AND DISTURBED AREAS.

TERMINATE YELLOW TRACER WIRE OUTSIDE BOX WITH QUICK COUPLING VALVE TO MATCHLINE - SEE I1.01.

INSTALL WATER-PROOF WIRE SPLICE CONNECTOR ON END OF WIRE.

GRADE AND SEED TRENCHES AND DISTURBED AREAS.