

REQUEST FOR BID (RFB)

For

BUCKLEY LIBRARY LANDSCAPING AND SITE IMPROVEMENT

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Specifications:

- 32 80 00 Sprinkler Irrigation
- 32 90 00 Landscaping
- 32 90 90 Hydroseeding
- 33 00 00 Concrete Paving

PART 1: INTRODUCTION

The Pierce County Library System (Library) is a junior taxing district under the laws of the State of Washington established in 1946 as a rural library district under Chapter 27.12 RCW. The Library provides library services for the residents of unincorporated Pierce County, 15 annexed cities and towns (Bonney Lake, Buckley, DuPont, Eatonville, Edgewood, Fife, Gig Harbor, Lakewood, Milton, Orting, South Prairie, Steilacoom, Sumner, University Place, and Wilkeson). The total estimated population served is 655,000. More information about the Library may be found online at www.mypcls.org.

Thank you for your interest in proposing BUCKLEY LIBRARY LANDSCAPING AND SITE IMPROVEMENT. The purpose of this RFB is for installation of new landscaping in the area associated with a recently completed soil remediation project at the Buckley Library, located at 123 South River Avenue, Buckley, WA 98321. The scope includes but is not limited to: the installation of new plants, new electrified monument sign, new irrigation system, new plaza area with concrete seating, and an alternative bid for a wooden shade arbor. The library will remain open and operational during construction activities. Contractor must maintain vehicular public entry, available parking, and pedestrian access to the building and staff entry at all times.

PROJECT TIMELINE

RFB Announcement.....	March 6, 2024
Final questions or substitution requests due	March 29, 2024, 2:00PM
RFB Question Responses Due from Library	April 12, 2024
RFB due to PCLS.....	April 25, 2024, 2:00 PM
RFB Opening	April 25, 2024, 2:30 PM
Notice of Intent to Award	May 8, 2024

Schedule for work:

- Library will remain in continuous operation during construction, unless otherwise approved by the Library’s Contract Administrator.
- Contractor shall provide and adjust temporary construction fencing as necessary to protect the site and secure any areas of work. Contractor shall be responsible to adjust the temporary construction fencing to allow for customer access into the parking lot and main entry doors of the libraries. Staff access to staff entry doors must also be maintained.
- Contractor work hours may be weekdays (Monday to Sunday) between 6 AM to 6 PM. Contractor shall abide by all requirements for traffic control and safety when working in the road right-of-way.
- Substantial completion of all Work is ninety (90) calendar days after the date of Notice to Proceed. Contractor shall provide construction schedule for Library approval prior to commencement of Work.

PART 2: INSTRUCTIONS TO BIDDERS

- a) **AVAILABILITY:** Electronic PDFs of bid documents can be viewed at:
[Partner with Us - Pierce County Library System \(mypcl.org\)](http://mypcl.org)
- b) **QUESTIONS ABOUT THE RFB:** It is the responsibility of all proposers to carefully review and read the entire RFB, and understand all terms, conditions, processes, and methods for responding to this RFB. All questions about this RFB should be directed to Christina Neville-Neil by email to cneville-neil@piercecountylibrary.org. Oral explanations or instructions given before the award of the Agreement will not be binding. Any information that is different from what is provided in this RFB and given to a prospective proposer concerning this RFB will be furnished to all prospective proposer as an amendment to the solicitation. The Library reserves the right to share answers with other proposers, if such information is necessary to proposers in submitting proposals on the solicitation or if the lack of such information would be prejudicial to uninformed proposers. **All questions must be submitted by date specified above.**
- c) **SUBSTITUTIONS:** Provide any proposed material to design team, in writing, for review by **date specified above**. No Substitutions will be accepted after bid. Use attached sample form to submit request for substitutions.
- d) **SITE VISITS:** Bidders may visit site at their discretion prior to submitting a bid.
- e) **ACKNOWLEDGEMENT OF ADDENDA TO RFBS:** Bidders to the RFB must acknowledge receipt of any addenda by signing the bid form. Such acknowledgment must be received prior to bid opening.
- f) **BID SUBMISSION:** The preferred method of proposal submission is electronically to Petra McBride at PMcBride@piercecountylibrary.org. Please use the subject line: **BID FOR BUCKLEY LIBRARY LANDSCAPING AND SITE IMPROVEMENT**. If contractors choose to submit via hard copy, please submit a sealed proposal with 3 copies to:

Pierce County Library System
Attn: Petra McBride, Executive Assistant for Executive Office Department
3005 112th Street East
Tacoma, WA 98446-2215
Sealed bid for: **BUCKLEY LIBRARY LANDSCAPING AND SITE IMPROVEMENT**
- The Bidder shall assume full responsibility for the timely delivery at the location designated in the Advertisement for Bids for receipt of Bids. A Bid submitted or delivered after the time fixed for receipt of Bids will not be accepted.
- g) **DATE OF SUBMISSION: SEALED BIDS MUST BE SUBMITTED NO LATER THAN April 25, 2024 at 2:00 PM, Local time**. Submissions received late may be deemed not responsive and may not be considered, at the Library's discretion. The Library reserves the right to extend the date of submission and will provide due notice of such date extension.
- h) **SIGNATURES:** A corporate official who has been authorized to make such bid commitments must sign the bid.

- i) **WITHDRAWAL OR MODIFICATIONS OF BIDS:** The bidder may, without prejudice to itself, modify or withdraw its bid by written request, provided that the bid and any request is received by the Library prior to the date of submission above. Following the withdrawal of its bid, the bidder may submit a new bid provided it is received by the Library at the address and by the Date of Submission.
- j) **REJECTION OF BIDS:** The Library reserves the right to reject any and all bids without penalty. Any and all bids may be rejected for any cause.
- k) **BIDDING PROCEDURES AND FORMS:** All bidders must comply with the specifications and requirements attached. To be considered all bids must be signed; Bidders may only submit one bid for consideration. Bidders may submit additional information with their bids as desired.
- l) **VALIDITY OF PRICES:** Bidders must confirm in writing that prices quoted will be valid and in effect for a minimum of sixty (60) days after bid opening. When the sum of the base bid plus all additive alternates is greater than \$35,000.00, a bid guarantee in the amount of 5% of the base bid amount is required. Failure of the Bidder to provide bid guarantee when required shall render the bid non-responsive. Acceptance form of bid guarantee shall be a bid bond. The successful Bidder's bid guarantee will be returned to the successful Bidder with its official notice to proceed with the work of the contract.
- m) **BID OPENING:** A Virtual Public Bid Opening will be held at approximately 2:30PM, on April 25, 2024 on Microsoft Teams.

Meeting ID: 277 673 728 830

Passcode: Lb9YDg

Or call in (audio only): 1-347-618-4825, 474671847#

Phone conference ID: 474 671 847#

The Library will submit a Notice of Intent to Award to the apparent winning bidder within fifteen (15) days.

- n) **AWARD OF BID: CONTRACT SHALL BE AWARDED BASED ON PRICE, REFERENCES, AND COMPLETION OF ALL ASPECTS OF THE RFB.** The Library reserves the right to waive informalities or irregularities and deviations from the RFB, and to be the final judge as to which bid shall be accepted by the Library. Award is anticipated no later than thirty (30) days of bid closing.
- o) **PUBLIC DISCLOSURE OF AWARDED BID:** All bids will be treated with confidentiality prior to award. After award of the contract, the bid will fall under the requirement by Washington State law (Chapter 42.17 RCW) that obligates the Library to make the document available for public inspection, if requested.
- p) **RETAINAGE:** Bidders acknowledge that the awarded contract, per RCW 60.28.011, that the Library will retain funds in the amount of five percent (5.00%) exclusive of sales and excise taxes for the duration of an annual contract, as provided in the contract terms.
- q) **PREVAILING WAGES:** Workers of all Contractors, Subcontractors, and lower tier Subcontractors on all Pierce County Library System public work projects, as the term public works is defined by RCW 39.040.010, shall be paid the "prevailing rate of wage" including usual benefits, as those terms are defined by Chapter 39.12 of RCW. It is understood that the

successful Contractor is responsible for obtaining and completing all required government forms and submitting them the same to the proper authorities. Contractor is required to provide certified payroll to the Library showing the payment of prevailing wage.

- r) **FINAL INSPECTION UPON AWARD:** Upon Library's request, bidder will verify bid on all existing conditions. The Contractor will return to the Library a signed contract, insurance certificate and bond or bond waiver within fifteen (15) days after receipt of contract. If the apparent successful Bidder fails to sign all contractual documents or provide the bond and insurance as required or return documents within fifteen (15) days of receipt of the contract, the Library may terminate the award of the contract.
- s) **CONTRACT ADMINISTRATOR:** The administrator of this contract will be: Christina Neville-Neil, PCLS Facilities Project Manager.
- t) **REFERENCES:** List the names and addresses of three (3) customers, for whom the bidder has provided similar services. Include dates, contact persons, and telephone numbers. Should any reference submitted by the bidder be found unsatisfactory, the Library, as its sole option, may reject that bidder's offer. The Library shall be the sole judge in determining a satisfactory or unsatisfactory reference response. References must be submitted with the bid response.

USE OF TECHNICAL LANGUAGE

Hereon forward, the following terms are used and are defined within their sections or assumed to be known to the parties involved, and are capitalized as proper nouns accordingly. Available attributions may be used for succinctness.

- Architect/Engineer or Architecture/Engineering ("A/E")
- Architect's Supplemental Instruction ("SI")
- Change Order or Contract Change Order or Construction Change Order ("CO")
- Change Order Proposals or Construction Change Order Proposal ("COP")
- Contract Documents
- Contract Sum
- Contract Time
- Field Authorization ("FA")
- Final Acceptance
- Notice of Non-Compliance ("NCC")
- Notice of Substantial Completion
- Project Record
- Request for Information ("RFI")
- Schedule of Values
- Substantial Completion
- Work

BID FORM (Page 1 of 2)

Declarations:

The undersigned bidder declares that he/she has read and fully understands the Request for Bid and agrees to all of the terms, conditions, and provisions contained therein; and he/she proposes and agrees that if his/her bid as submitted in the proposal be accepted, he/she will contract to perform in accordance with the specifications and proposals. Said price is to include and cover all materials, labor, supervision, overhead, and profit to complete the job to the Library's satisfaction.

Project Name: BUCKLEY LIBRARY LANDSCAPING AND SITE IMPROVEMENT

Contractor's Name: _____

BID SUBMITTED BY:

Signature of Authorized Representative

Firm Name

Printed Name

Address

Title

City, State, Zip Code

Date

Telephone/ Fax Number

State of Washington Contractor's License No. _____

Federal Tax ID No. _____

Base Bid (print dollar amount)

\$ _____
(\$ amount, do not include WSST)

Alternate bid item (print dollar amount)

\$ _____
(\$ amount, do not include WSST)

BID FORM (Page 2 of 2)

TIME FOR COMPLETION:

Contract Time – The undersigned hereby agrees to Substantially Complete all the work under the Base Bid within 90 days from issuance of Notice to Proceed.

Final Completion – All the Work shall be fully and finally completed in accordance with the contract documents within fourteen (14) calendar days after the date of Substantial Completion.

LIQUIDATED DAMAGES:

The undersigned agrees to pay the Library as liquidated damages the sum of \$300.00 for each and every consecutive calendar day that is in default after the Contract Time. Liquidated damages shall be deducted from the contract invoice after taxes and retainage.

RECEIPT OF ADDENDA:

Receipt of the following addenda is acknowledged:

Addendum No: _____	Addendum No: _____
Addendum No: _____	Addendum No: _____
Addendum No: _____	Addendum No: _____

REFERENCES:

1. Company Name _____
Company Address _____
Company Phone _____
Contact Person _____
Dates _____

2. Company Name _____
Company Address _____
Company Phone _____
Contact Person _____
Dates _____

3. Company Name _____
Company Address _____
Company Phone _____
Contact Person _____
Dates _____

PART 3: CONTRACT TERMS AND CONDITIONS

**ACTUAL CONTRACT WILL TAKE THE FORM OF
EITHER AIA FORM A105-2017 OR THE SERIES OF FORMS A101-2017 & A201-2017
PROVIDED HEREIN ARE GUIDELINES OF CONTRACTUAL TERMS**

- a) **NON-ASSIGNMENT:** The contractor may not assign any rights or any duties under this contract without the Library's prior written consent. Such consent must be in writing and received no less than thirty (30) days prior to the date of any proposed assignment and/or delegation.
- b) **SUPERVISION:** The Contractor shall supervise and direct the work in relation to this contract using the Contractor's best skill and attention. The Contractor shall be solely responsible for and have control over the means, methods, techniques, sequences and procedures, and for coordinating portions applicable to this contract. The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out work in accordance to this contract. The Contractor shall not permit employment of unfit persons or persons not skilled in tasks assigned to them, according to the specifications contained herein.
- c) **SEVERABILITY:** The invalidity or unenforceability of any provision in any resultant contract shall not affect the other provisions hereof, and the contract shall be construed in all respects as if such invalid or unenforceable provisions were omitted.
- d) **INDEMNIFICATION AND HOLD HARMLESS:** The contractor shall protect, defend, indemnify, and hold the Library, its agents, employees, officials harmless from, and shall process and defend at its own expense any and all claims, demands, suits, penalties, losses, damages, or costs of any kind whatsoever (hereinafter "claims") brought against the Library arising out of or incident to the execution of, performance of, or failure to perform this contract; PROVIDED, however, that if such claims are caused by or the result from the concurrent negligence of the contractor, its agents, employees, an/ or officers and the Library, its agents, employees, and/ or officers, this paragraph shall be valid and enforceable only to the extent of negligence of the contractor, its agents, employees, and/ or officers; and PROVIDED/FURTHER that nothing in this paragraph shall require the contractor to indemnify, hold harmless, or defend the Library, its agents, employees, and/ or other officers from any claims caused by or resulting from the sole negligence of the Library, its agents, employees, and/ or officers. The contractor's obligation under this paragraph shall include indemnification for made by the contractor's own employees or agents. For this purpose, the contractor, by mutual negotiation, hereby waives, with respect to the Library only, any immunity that would otherwise be available against such claims under the Industrial Insurance provisions of Chapter 51 of the RCW. In the event the Library incurs any judgment, award, and or cost arising there from including attorney's fees to enforce the provisions of this paragraph, and such fees, expenses, and costs shall be recoverable from the contractor.
- e) **PUBLIC RECORDS ACT/CONFIDENTIALITY:** Notwithstanding any other provision herein, Contractor recognizes that Library is a public agency subject the state Public Records Act, RCW 42.56. Upon receipt of a public record request for any material which is the subject

of this agreement, Library will promptly notify Contractor of the request and Contractor will promptly elect whether it will at its own expense commence court action to protect the material from disclosure. If Contractor does elect to seek such protection, Contractor will fully defend and indemnify Library from any liability, including attorney fees and statutory penalties, which may arise under the Public Records Act in connection with the request.

- f) **TERMINATION FOR CONVENIENCE:** The Library for its convenience may terminate this contract, in whole or in part, at any time by written notice sent certified mail, return receipt requested, to the contractor. After receipt of a Notice of Termination, and except as directed by the contract administrator, the contractor shall immediately stop work as directed in the Notice, and comply with all other requirements in the Notice. The contractor shall be paid its costs, including necessary and reasonable contract close-out costs and profit on that portion of the work satisfactorily performed up to the date of termination as specifies in the Notice. The contractor shall promptly submit its request for the termination payment, together with detailed supporting documentation. If the contractor has any property in its possession belong to the Library, the contractor will account for the same and dispose of it in the manner the Library directs.
- g) **TERMINATION FOR DEFAULT:** In addition to termination for convenience, if the contractor does not deliver supplies in accordance with the delivery schedule, or if the contract is for services and the contractor fails to perform in the manner called for in the contract, the Library may terminate this contract, in whole or in part, for default. Termination shall be effected by serving a Notice of Termination by certified mail, return receipt requested, on the contractor setting forth the manner in which the contractor is in default and the effective date of termination; provided that the contractor shall have ten (10) calendar days to cure the default. The contractor will be only paid for goods delivered and accepted, or services performed in accordance with the manner of performance set forth in the contract less any damages to the Library caused by default. The termination of this contract shall in no way relieve the contractor from any of its obligations under this contract not limit the rights and remedies of the Library hereunder in any manner.
- h) **TERMINATION FOR NON-APPROPRIATION:** This contract is cancelable at the end of the fiscal period for non-appropriation of funds by the Pierce County Library System Board of Trustees. Such cancellation shall be upon thirty (30) days written notice to the contractor. The Library's fiscal period ends December 31 of each year. If the contract is terminated as provided in this subsection: The Library will be liable only for payment in accordance with the terms of this contract for services rendered prior to the effective date of termination; and the contractor shall be released from any obligation to provide further services pursuant to the contract as are affected by the termination. Funding under this contract beyond the current appropriation is conditional upon the appropriation by the Pierce County Library System Board of Trustees of sufficient funds to support the activities described in the contract. Should such an appropriation not be approved, this contract will terminate at the close of the current appropriation year.
- i) **CONTRACT TIME AND SCHEDULE:** Contractor to meet schedule: Contractor shall diligently prosecute the Work, with adequate forces, achieve Substantial Completion with the Contract Time, and achieve Final Completion with a reasonable period thereafter. Unless otherwise provided, Contractor shall, within 14 days after issuance of Notice of Award, submit a preliminary Progress Schedule. The Progress Schedule shall show the sequence in which Contractor proposes to perform the Work, and the dates on which Contractor plans to start and

finish major portions of the Work, including dates for shop drawings and other submittals, and for acquiring materials and equipment.

- j) **LIQUIDATED DAMAGES FOR FAILURE TO ACHIEVE TIMELY COMPLETION:**
1. Reason for Liquidated Damages: Timely performance and completion of the Work is essential to the Library and time limits stated in Contract Documents are of the essence. Provisions for liquidated damages are included in the Contract Documents.
 2. Calculations of Liquidated Damages amount: The liquidated damage amounts set forth in the Contract Documents will be assessed not as a penalty, but as liquidated damages for breach of the Contract Documents. This amount is fixed and agreed upon by and between the Contractor and Library. This amount shall be construed as the actual amount of damages sustained by the Library, and may be retained by the Library and deducted from the periodic payments to the Contractor.
 3. Contractor responsible even if Liquidated Damages assessed: Assessment of Liquidated damages shall not release Contractor from any obligations or liabilities pursuant to the Contract Documents.
- k) **RETAINAGE:** All laws related to retainage shall apply. RCW 60.28.11 requires public entities to retain a portion of payments on a Public Works contract. This contract requires retainage in the amount of five percent (5.00%) of all payments, except sales and excise taxes. The Contractor may choose to have it:
1. Retained in a fund managed by the Library; or
 2. Deposited by the Library into an interest bearing account in a bank, mutual saving bank, or savings and loan association. Interest on moneys reserved by the Library under the provision of this contract shall be paid to the Contractor; or
 3. Placed in escrow with the bank or trust company by the Library. When the money reserved is placed in escrow, the Library shall issue a check representing the sum of the moneys reserved payable to the bank or trust company and the Contractor jointly. This check shall be converted into bonds and securities shall be held in escrow. Interest on the bonds and securities shall be paid to the Contractor as the interest accrues.

In lieu of retainage, the Contractor may submit a retainage bond. If elected, retainage bond must be submitted within 30 days of contract signing; any retainage withheld shall then be paid immediately to Contractor.

- l) **INSURANCE:** The Contractor shall furnish to the Library at time of award copies of all applicable liability insurance and applicable documentation as specified below:

<u>Coverage</u>	<u>Limits of Liability</u>
General Liability Insurance	\$1,000,000 each occurrence \$2,000,000 aggregate
Automotive Liability Insurance	\$1,000,000
Umbrella/Excess Liability Insurance	\$5,000,000

All insurance policies shall be endorsed with the following declaration, "Pierce County Library System, its officials and employees are covered as additional insured."

- m) **PAYMENT:** The Contractor will submit an invoice monthly. The Library will make payments upon delivery and acceptance of the services by the Library and upon receipt of an acceptable invoice.
- n) **WARRANTY OF WORK:** Contractor warranty of Work – In addition to any special warranties provided elsewhere in the Contract Documents, Contractor warrants that all Work conforms to the requirements of the Contract Documents. Contractor warrants that all Work conforms to the requirements of the Contract Documents and is free of any defect in equipment, material, or design furnished, or workmanship performed by Contractor.

PART 4: STATEMENT OF RESPONSIBILITIES

The Contractor must provide a comprehensive statement identifying the exact tasks, and other needs that are the responsibility of the Library as a part of this project. This includes cost, coordination, and labor required to complete all work associated with the project as defined in this RFB.

PART 5: SPECIFICATIONS, DRAWINGS, AND OTHER DOCUMENTS

- a) **SPECIFICATIONS AND DRAWINGS ARE THE BASIS OF THE WORK:** The intent of the specifications and drawings is to describe a complete project to be constructed in accordance with the Contract Documents. Contractor shall furnish all labor, materials, equipment, tools, transportation, permits, and supplies, and perform the Work required in accordance with the drawings, specifications, and other provisions of the Contract Documents.
- b) **PARTS OF THE CONTRACT DOCUMENTS ARE COMPLEMENTARY:** The Contract Documents are complementary. What is required by one part of the Contract Documents shall be binding as if required by all. Anything mentioned in the specifications and not shown on the drawings, or shown on the drawings and not mentioned in the specifications, shall be of like effect as if shown or mentioned in both.
- c) **CONTRACTOR TO REPORT DISCREPANCIES IN CONTRACT DOCUMENTS:** Contractor shall carefully study and compare the Contract Documents with each other and with information furnished by Library. If during the performance of the Work, Contractor finds a conflict, error, inconsistency, or omission in the Contract Documents, it shall promptly and before proceeding with the work effected thereby, report such conflict, error, inconsistency, or omission to A/E in writing.
- d) **PROJECT RECORD:** The Contractor maintains the Project Record as defined herein. Contractor shall legibly mark in ink on a separate set of the drawings and specifications all actual construction, including depths of foundations, horizontal, and vertical locations of internal and underground utilities and appurtenances referenced to permanent visible and accessible surface improvements, field changes of dimensions and details, actual suppliers, manufacturers and trade names, models of installed equipment, and Change Order Proposals. This separate set of drawings and specifications shall be the Project Record. Contractor shall submit the completed and finalized Project Record to A/E prior to Final Acceptance. Upon review and acceptance from A/E, Library shall receive copy for files.
- e) **PERMITS, FEES, AND NOTICES:** Contractor to obtain and pay for permits. Unless otherwise provided in the Contract Documents, Contractor shall pay for and obtain all permits, licenses, and inspections necessary for proper execution and completion of the Work. Prior to Final Acceptance, the approved, signed permits shall be delivered to the Library.

PART 6: PERFORMANCE

The period of performance of this contract is ninety (90) days from the Date of Commencement as specified in the Contract Documents. Contractor shall retain the responsibility for the traffic operations. Contractor shall cooperate with Library so that traffic flow is least impeded by the execution of the Work under this contract. In the event of conflict, the Library's Contract Administrator shall be the sole judge of the adequacy of the Contractor's protective measures to assure the flow of traffic. Contractor understands the special requirements of maintaining the facilities in full operation concurrent with the construction activity, and shall provide continuous and safe access by Library to all areas of the site not specifically designated for Work by the Contractor under each phase. There may be other entities conducting work onsite including but not limited, to adjunct staff, contractors, officials, and inspectors (collectively, "Others"). Contractor agrees to cooperate and not impede Others' scope of work.

- a) **CONTRACTOR CONTROL AND SUPERVISION:** Contractor is responsible for the means and methods of construction. Contractor shall supervise and direct the Work, using their best skill and attention, and shall perform the Work in a skillful manner. Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences, and procedures and for coordinating all portions of the Work, unless the Contract Documents give other specific instructions concerning these matters.
- b) **SAFETY PRECAUTIONS:** In performing this contract, the Contractor shall provide for protecting the lives and health of employees and other persons; preventing damage to property, materials, supplies, and equipment; and avoid work interruptions.
 1. Temporary walls/partitions/dust protection will be required between work zone and occupied spaces.
 2. Contractors are not to enter the building through the main public door during Library operating hours. Contractor entry and access to be coordinated with Library prior to mobilization.
 3. Safe and clearly marked access to patron means of egress are to be maintained throughout construction.
 4. Demolition staging and site access: Contractor will be allowed to fence off an area for laydown in coordination with the Library, location to be confirmed with Library at pre-installation meeting. Area shall be secured by the Contractor's means and at their own cost. The Library takes no responsibility for the security of the Contractor's assigned laydown area.
- c) **UNFORESEEN PHYSICAL CONDITIONS:** If Contractor encounters conditions at the site which are subsurface or otherwise concealed physical conditions which differ materially from those indicated in the Contract Documents, or unknown physical conditions of an unusual nature which differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, then Contractor shall give written notice to Library promptly and in no event later than seven (7) days after the first observance of the conditions. Conditions shall not be disturbed prior to such notice.

- d) **CORRECTION OF NON-CONFORMING WORK:** Contractor shall promptly correct work found by Library not to conform to the requirements of the Contract Documents, whether observed before or after Substantial Completion and whether or not fabricated, installed, or completed. Contractor shall bear all costs of correcting such nonconforming work, including additional testing and inspections.
- e) **CHANGES:**
1. Changes in Work, Contract Sum, and Contract Time by Change Order: Library may, at any time and without notice to Contractor's surety, order additions, deletions, revisions, or other changes in the Work. These changes in the Work shall be incorporated into the Contract Documents through the execution of Change Orders. If any change in the Work ordered by the Library causes an increase or decrease in the Contract Sum or the Contract Time, an equitable adjustment shall be made.
 2. Library may request COP from Contractor: If Library desires to order a change in the Work, it may request a written Change Order Proposal from Contractor. Contractor shall submit a Change Order Proposal within fourteen (14) days of the request from Library, or within such other period as mutually agreed. Contractor's Change Order Proposal shall be full compensation for implementing the proposed change in the Work, including any adjustment in the Contract Sum or Contract Time, and including compensation for all delays in connection with such change in the Work and for any expense or inconvenience, disruption or schedule, or loss of efficiency or productivity occasioned by the change in the Work.
 3. Contract Sum changes only by Change Order: The Contract Sum shall only be changed by a Change Order. Contractor shall include any request for a change in the Contract Sum in its Change Order Proposal. If the cost of Contractor's performance is changed due to the fault or negligence of Library, or anyone for whose acts Library is responsible, Contractor shall be entitled to make a request for an equitable adjustment to the Contract Sum. No change in the Contract Sum shall be allowed to the extent: Contractor's changed cost of performance is due to the fault or negligence of Contractor, or anyone for whose acts Contractor is responsible; the change is concurrently caused by Contractor and Library; or the change is caused by an act of force majeure as defined below.

Acts of force majeure include but not limited to:

1. Acts of God or the public enemy
2. Acts or omissions of any government entity
3. Fire or other casualty for which Contractor is not responsible
4. Quarantine or epidemic
5. Strike or defensive lockout
6. Unusually severe weather conditions which could not have been reasonably anticipated
7. Unusual delay in receipt of supplies or products which were ordered and expedited and for which no substitute reasonably acceptable to Library was available.

PART 7: ADMINISTRATIVE REQUIREMENTS

- a) **PRECONSTRUCTION/PRE-INSTALLATION MEETING:** Library, Consultant, and Contractor will attend initial meeting to establish communication expectations, address Contractor and Library questions and concerns, schedule and sequence of work, and identify issues for resolution early in the process.
- b) **CONSTRUCTION PROGRESS SCHEDULE:** Contractor to submit baseline schedule within fourteen (14) days of issuance of Notice of Award for review and submit updated schedule with each application for payment.
- c) **WEEKLY PROGRESS MEETINGS:** Contractor to hold weekly construction meetings to review site-specific progress with three (3) week schedule and updates. Contractor to prepare agenda, meeting minutes, and progress schedule, submittal log, RFI log, Field Authorization log, and Change Order log.
- d) **SUBMITTALS FOR REVIEW:** As indicated in the individual technical specification sections, submit for review:

Section 01 50 00 – Temporary Facilities and Controls

- Health and Safety Plan
- Traffic Control Plan
- Environmental Protection Plan (includes Site Security Plan)

Section 01 57 13 – Temporary Erosion and Sediment Control

- Stormwater Pollution Prevention Plan, including Temporary Erosion and Sediment Control Plan.

Section 01 99 00 – Environmental Protection Plan

- Spill Plan

Section 31 00 00 – Earthwork

- Analytical results for import fill testing.
- Independent utility location/potholing results.
- Gradation analyses, optimum moisture content, and maximum dry density for import material
- Compaction test results.

Schedule submittals to expedite the project, and coordinate submission of related items. When revised for resubmission, identify all changes made since previous submission. Submittals to be submitted digitally and logged and tracked in submittal log, to be shared with project team in weekly progress meetings.

Consultant's Action – Except for submittals for record, information, or similar purposes, where action and return is required or requested, the Consultant will review each submittal, mark to indicate action taken, and return promptly.

Submittals expected for review are specified in individual sections.

e) **MODIFICATION PROCEDURES:** Changes to and clarification of the Work may be made by response to a Request for Information, Architect's Supplemental Instruction, Field Authorization, Change Order Proposal, and Contract Change Order as issued by Library. A monetary change to the contract is implemented by an accepted FA and by CO.

a. Request for Information

- i. Prepared by Contractor
- ii. Transmitted to Consultant
- iii. Response by Consultant. Allow up to two (2) calendar days for response.
- iv. Acceptance by Library
- v. Contractor must either:
 1. Proceed upon receipt of response if not cost/time impact; or
 2. Submit a notice of cost impact within three (3) calendar days of response date. Submit substantiation of costs within ten (10) days or response date.
 3. By proceeding without submitting a statement of impact, the Contractor agrees that there is no impact on the Contract Sum or Contract Time.
 4. RFIs must reference a drawing and detail number or specification section.

b. Supplemental Instruction

- i. Prepared by Consultant
- ii. Approved by Library
- iii. Transmitted to Contractor
- iv. Contractor must either:
 1. Proceed upon receipt of response if no cost/time impact; or
 2. Submit a notice of cost impact within three (3) calendar days of response date. Submit substantiation of costs within ten (10) days or response date.

FA or COP will be prepared.
 3. By proceeding without submitting a statement of impact, the Contractor agrees that there is no impact on the Contract Cost or Contract Time.

v. SI shall be numbered consecutively and emailed to appropriate parties.

c. Field Authorization

- i. Issued in response to:
 1. An RFI with unresolved cost/time impacts
 2. A SI with unresolved cost/time impacts

- 3. Absence of agreement on proposal request terms.
 - ii. Issued to expedite the work and avoid delays.
 - iii. Procedure:
 - 1. Form provided and prepared by Architect
 - 2. Signed by Architect, Library, and Contractor
 - 3. Contractor must proceed immediately
 - 4. Method of adjustment of Contract Sum shall be determined per general conditions of the contract.
 - 5. FA's shall be numbered consecutively
 - 6. Changes shall be marked on record drawings and specifications
 - 7. FA will have an agreed not-to-exceed price
- d. Construction Change Order Proposal
 - i. Prepared by Consultant
 - ii. May be initiated by Contractor by submitting a written notice to Architect indicating justification and anticipated cost impact
 - iii. Delivered to Contractor
 - iv. Contractor must provide cost data and submit substantiation
 - v. Consultant makes recommendation
 - vi. Library accepts or rejects
 - 1. Library issues Notice to Proceed and prepares Change Order; or
 - 2. Library requests additional cost data; or
 - 3. FA is issued
 - vii. COPs shall be numbered consecutively
 - viii. Changes shall be marked on record drawings and specifications
- e. Construction Change Order
 - i. Prepared by Library
 - ii. May include several COPs and FAs
 - iii. COs shall be numbered consecutively
 - iv. Changes shall be marked on record drawings and specifications
- f. Notice of Non-Compliance
 - i. Issued by Consultant in response to observation of work that is not in compliance with Contract Documents.
 - ii. Contractor shall correct deficiency promptly upon receipt of notice.

- iii. Notice will be considered closed following Consultant's verification that remedial work is in compliance with Contract Documents.
 - iv. In no case shall subsequent work be attached to, built on or built over the deficient work, until such time that correction of the deficient work has been verified.
- f) **CLOSEOUT REQUIREMENTS:** Contractor shall submit a written Notice of Substantial Completion certifying that all Work has been inspected, and that Work is complete in accordance with the Contract Documents and ready for A/E punch list inspection. Contractor to submit all outstanding FA and COP for review, draft operations and maintenance manual to Architect for review, draft warranties and bonds to Consultant for review, and record documents. Upon punch list inspection, Contractor to correct items of work listed prior to final inspection. Closeout submittals to include record documents: drawings, specifications, addenda, change orders, modifications, shop drawings, product data, samples, manufacturer's instructions for assembly, installation and adjustments, testing and inspection log and reports, permits, and progress photos. Submit two paper copies and one electronic copy of each document prior to final invoice.

PART 8: PAYMENT SCHEDULE

- Contractor will submit Schedule of Values on Library-provided application for payment Form A-19 within fourteen (14) days after date established as the Notice to Proceed or seven (7) days prior to first application for payment, whichever is first. Approved Schedule of Values shall be used by the Library as the basis for progress payments.
- The Contractor will submit an invoice monthly on Form A-19 (see sample), to be filled out electronically, signed and certified by authorized officer of company, reviewed by Architect.
- The Library will make payments upon delivery and acceptance of the services by the Library and upon receipt of an acceptable invoice.
- Invoicing for all work must be done monthly and invoices must indicate separate charges for labor and materials, and material charges must be itemized. The Contractor may only invoice for parts that have been furnished and installed; parts on order shall not be billed prior to installation. All invoices shall reference the relevant work order number for the authorized work. Statement of intent to pay prevailing wage rates and signed statement of compliance must be submitted to the Finance Department upon request. No invoices will be processed for payment without the above referenced documentation.
- The Library is required by law to withhold retainage from payment. For more information, please see retainage in Part 3.

SUBSTITUTION REQUEST FORM

PROJECT NAME: _____

CONTRACTOR: _____

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

SECTION	PARAGRAPH	SPECIFIED ITEM
_____	_____	_____

Proposed substitution: _____

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

Include complete information on changes to drawings and specifications which proposed substitution will require for its proper installation.

Submit with request all necessary samples and substantiating data to prove equal quality, performance, and appearance to that specified. Clearly mark manufacturer's literature to indicate equality in performance. Indicate differences in quality of materials and construction.

Fill in blanks below:

Does the substitution affect dimensions shown on drawings?

Yes _____ No _____ If yes, clearly indicate changes. _____

The Undersigned agrees to pay for changes to the building design and Architect's review time, including engineering and detailing costs caused by the requested substitution.

What affect does substitution have on other trades, other contracts, and contract completion date?

What affect does substitution have on applicable code requirements?

Difference between proposed substitution and specified item? _____

Manufacturer's guarantees of the proposed and specified items are:

_____ Same _____ Different

(explain) _____

List of names and addresses of three (3) similar projects on which product was used, date of installation, and Architect's name and address:

Cost impact: _____

CERTIFICATION OF EQUAL PERFORMANCE AND ASSUMPTION OF LIABILITY FOR EQUAL PERFORMANCE

The Undersigned attests function and quality equal or superior to specified items.

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

Submitted By:

Signature Address

PRINTED NAME AND TITLE

Firm Telephone

Date

For Use by Architect:

Accepted Not Accepted Accepted as Noted Received Too Late

By _____ Date _____
Remarks _____

END OF FORM

SECTION 32 80 00 – SPRINKLER IRRIGATION

PART I: GENERAL

1.1 GENERAL REQUIREMENTS

- A. Conform to the General Conditions, Supplementary Conditions and Division 1.

1.2 DESCRIPTION OF WORK

- A. Installation: This sprinkler irrigation system shall be installed only by a licensed and bonded landscape contracting firm that specializes and has extensive experience in the installation of sprinkler irrigation systems.
- B. Contractor shall ensure that the existing system shall remain operational, and the new irrigation system shall be connected to the existing controller and irrigation system.
- C. Work Included: Furnish all labor and materials to install the sprinkler irrigation system complete as shown on the plans and herein specified. The work includes furnishing and installing all meters, pipe, fittings, valves, sprinkler and shrubbery heads, backflow preventor and other appurtenances shown on the drawings, and performing of all labor for connections to existing water sources or other pressure lines installed by others as indicated on the drawings and specifications. Contractor shall supply and install all equipment shown on the plans and indicated in the specifications to achieve proper operation of the said equipment. All equipment installations shall be in conformity with all applicable codes and ordinances, these specifications, and the manufacturers recommendations whether indicated on the drawings or not.

1.3 SUBMITTALS

- A. List of Materials: Submit to the Landscape Architect, two copies of a complete list of all materials proposed for use on this project. The list shall give, for each item, the name of the manufacturer, trade name, and catalog date, specifications, brochures, or other data giving complete information about each item proposed for use. The Landscape Architect will determine the equality of the material, equipment, or method, and the Landscape Architect's decision will be final. If the Contractor installs as specified, catalog data or brochures will not be required.
- B. Items completely identified in the Specifications and Drawings by catalog numbers, trade names, and model numbers, and which the Contractor proposes to furnish therewith, may be listed "as specified" without further description. Quantities of material and equipment need not be included since these are the Contractor's responsibility.

1.4 PRODUCT HANDLING

- A. Damage to Property: Any structures or facilities damaged due to work of this project shall be restored equal to their original condition at the Contractor's expense.
- B. The Contractor shall be responsible for all damage to any part of the premises caused by leaks, or breaks in pipe or equipment furnished or installed by him/her under this project, for a period of one year after date of acceptance of the contract.
- C. Clean-up: Upon completion of the work, clean up all boxes, wrappings, excess materials, equipment and other rubbish resulting from this work and leave the premises in a clean, neat and orderly condition.

1.5 JOB CONDITIONS

- A. Disruption of Services: Permission to shut off any water lines must be obtained in writing from the Owner's Representative who will make the necessary arrangements. Disruptions shall be kept to a minimum.
- B. Testing: The Contractor shall not allow or cause any of the work installed by him to be covered before it has been inspected and approved. Work covered before approval shall be uncovered at Contractor's expense.

PART 2 – MATERIALS

2.1 PIPES

- A. All pipes shall be new of standard weight for its class and of virgin components. All pipes shall be continuously and permanently marked with manufacturer's name or trademark, size, schedule, and type of pipe, working pressure at 73 degrees F., and National Sanitation Foundation (NSF) approved.

2.2 GALVANIZED STEEL PIPE AND FITTINGS

- A. All galvanized steel pipe shall be Schedule 40, hot-dip galvanized, conforming to ASTM A120-76. Fittings shall be malleable iron, hot dip galvanized.

2.3 POLYVINYL CHLORIDE PIPE AND FITTINGS

- A. PVC pipe and fitting shall be polyvinyl chloride compound Type 1, Grade 1 or Type 1, Grade 2 conforming to ASTM D 1784 specifications. The pipe and fittings shall be approved and certified by the National Sanitation Foundation. Pipe and fittings shall be free from defects in materials, workmanship and handling.

- B. PVC solvent weld pipe shall be of PVC 1120, PVD 1220, or Schedule 40 material, and shall be 200 p.s.i. minimum pressure rating with SDR 21 walls which conforms to ASTM D 2241.
- C. PVC threaded pipe shall be of the same material and shall be Schedule 80 which conforms to ASTM D 1785. Pipe fittings shall conform to ASTM D 2466, Type 1, Grades 1 or 2.

2.4 GATE VALVES/BALL VALVES

- A. Gate valves and ball valves, when called for on the plans, shall be heavy-duty bronze or brass conforming to the requirements of ASTM B 62. Valves shall be of the same size as the pipes on which they are placed and shall have union or flange connections. Service rating shall be 150 p.s.i. minimum. Gate valves shall be of the double disk, taper seat type, with non-rising stem, union bonnet, and hand wheel. Valves shall be installed with unions as specified on the plans or details.

2.5 VALVE BOXES

- A. Valve boxes over control valves, gate valves, etc., shall be Ametek or equal 12" meter boxes with green covers in lawn or ground cover areas. In paved areas or at curb, install concrete valve boxes by Brooks No. 9, or Fraser Boxes with extension. Valve box covers shall have bolt down covers. Refer to plans.

2.6 BACKFLOW PREVENTION DEVICE

- A. See drawings for manufacturer and model numbers. Install per local plumbing codes.

2.7 AUTOMATIC CONTROLLERS

- A. Automatic Controller(s) shall be in a sturdy weatherproof and rustproof housing with security lock as designated on drawing. Controller shall be of the numbered stations and model designated, or if an equivalent model, approval must be requested in writing. Installation of wiring shall be in the manner directed on the drawing, by the manufacturer, and in conformance to National Electrical Code and local codes governing. The installer shall leave in the housing all instructions pertaining to operations and a chart designating stations by number in the same manner that appears on drawing.

2.8 AUTOMATIC CONTROL VALVES

- A. Automatic remote control valves shall be globe or angle pattern with flanged or screwed connections as required. Screwed valves shall be provided with union connections.
- B. Valves shall be of a "normally closed" design and shall be electric solenoid operated, having maximum rating of 6.5 watts utilizing 24 volt power. Solenoids shall be directly attached to the valve bonnets or body with all control parts completely internal. A manual control bleed cock shall be included on the valve to operate the valve without the requirement of electric current. A manual shutoff stem with cross handle for wrench operation is required for manual adjustment from fully closed to wide open.

2.9 MANUAL DRAIN VALVES

- A. Manual valves shall be bronze or brass, angle type with hex brass union. Service rating shall not be less than 150 p.s.i. non-shock cold water. Valves shall be designed for underground installation with suitable cross wheel for operation with a standard key. The Contractor shall furnish two suitable operating keys. Valves shall have removable bonnet and stem assembly. Valve discs shall be full floating with replaceable seat washers.

2.10 ELECTRICAL WIRE

- A. Electrical wire used between the automatic controller and automatic valves shall be solid copper AWG No. 14 minimum size, Type USE Cross Linked Polyethylene or TW. Type UF, and shall be color coded or marked with number identification.

2.11 QUICK COUPLING VALVES

- A. Valves, couplers and hose swivels shall be of one manufacturer and of the size and model number specified on the drawings. Valves shall be 3/4" bronze or brass. Furnish three quick coupling couplers and three hose swivels to Owner.

2.12 SPRINKLERS

- A. All sprinklers shall be of the type specified on the drawings or approved equal.
- B. Sprinklers shall be installed as per construction details.

2.13 MISCELLANEOUS EQUIPMENT

- A. Miscellaneous Equipment and Components not specifically indicated, but normally included in the work performed shall be furnished and installed by the Contractor.

PART 3 – EXECUTION

3.1 CONSTRUCTION REQUIREMENTS

- A. Location of pipe, sprinkler heads, valves, and other equipment shall be as shown on the plans and shall be of the size and type indicated. No changes shall be made except as approved by the Landscape Architect.
- B. Water and electrical service connections shall be made by the Contractor as indicated in the plans. Such installations and equipment shall conform to the requirements set forth by the supplying utility and local codes.

3.2 LAYOUT

- A. The Contractor shall stake the sprinkler irrigation system following the schematic design shown on the plans before the construction begins. Alterations and changes in the layout may be expected in order to conform to the ground conditions and to obtain full and adequate coverage of water. It is understood that corrective measures in the system may become necessary but no changes or alterations in the system as planned shall be made without the prior authorization of the Landscape Architect.

3.3 EXCAVATIONS

- A. Excavations shall be open vertical construction sufficiently wide to provide free working space around the work installed to provide ample space for backfilling and tamping.
- B. Trenches for pipe shall be cut to required grade lines and compacted to provide an accurate grade and uniform bearing for the full length of the line.
- C. When two pipes are to be placed in the same trench, it is required to maintain a 2 inch space between pipes as a minimum.
- D. Pipes under paved areas shall be bedded in 6 inches of clean sand all around pipe(s).
- E. Minimum depth of cover for pipe lines shall be as follows:
 - 1. Main lines and lateral lines under paved areas, 24 inches.

2. Main lines and quick coupling lines, 18 inches.
3. Lateral lines to sprinklers, 12 inches.

3.4 PLASTIC PIPE LINES

- A. PVC pipe, indicated herein, shall be installed for all pressure supply lines including quick coupling valves.
- B. Plastic pipe shall be installed in a manner so as to provide for expansion and contraction as recommended by the manufacturer.
- C. Plastic pipe shall be cut with a hand saw or hacksaw in a manner so as to insure square ends. Burrs at cut ends shall be removed prior to installation so that a smooth unobstructed flow will be obtained.

3.5 SOLVENT WELD JOINTS

- A. Contractor shall use only the solvent supplied and recommended by the manufacturer to make plastic pipe joints. All connections shall be made as per manufacturer's recommendations for solvent-welding pipe.
- B. All solvent weld joints shall be first primed with p-70 (purple) PVC primer or approved equal.
- C. The pipe and fittings shall be thoroughly cleaned of dirt, dust, and moisture before applying solvent.

3.6 PIPE CONNECTION

- A. The Contractor is cautioned to exercise care in handling, loading and unloading, and storing plastic pipe and fittings. All plastic pipe and fittings will be stored under cover before using, and will be transported in a vehicle with a bed long enough to allow the length of pipe to lay flat so as not to be subject to undue bending or concentrated external load at any point. Any section of pipe that has been dented or damaged will be discarded until said section pipe is cut out and rejoined with a coupling.
- B. All foreign matter or dirt shall be removed from the inside of the pipe before it is lowered into position in the trench, and it shall be kept clean by approved means during and after laying of pipe.
- C. All threaded pipe connections shall be made using Teflon tape wrapped at least three times around pipe threads.

3.7 DRAIN VALVES

- A. It shall be the Contractor's responsibility to establish the locations of the drain valves during installation and to insure complete drainage of all water mains and laterals. Each drain valve shall be placed in a drain pit which shall be constructed in accordance with the details.

3.8 INSTALLATION OF AUTOMATIC CONTROLLER, VALVES AND SPRINKLERS

- A. The automatic controller shall be securely installed where shown on drawings. Furnish and install metallic conduit of size to accommodate properly the number of 24 volt wires required to pass through it, from the controller unit to the existing conduits. Junction boxes shall be furnished and installed as required to allow pulling of wires to controller. New conduits from buildings shall exit walls at 6" above finish grade.
- B. The completed controller installation shall be level, neat, sturdy, and to the complete satisfaction of the Owner.
- C. Label all zones on chart inside controller door as to area locations with plastic label tape.
- D. The remote control valves shall be installed as shown.
- E. Wiring may be installed in the same trench as the water pipe.
- F. Sharp bends or kinks in the wiring shall not be permitted. Wires shall be unreeled in place alongside or in the trench, and shall be carefully placed along the bottom of the trench. Under no condition shall the cable be unreeled and pulled into the trench from one end.
- G. Where two or more cables are laid parallel in the same trench, they shall be taped together not less than every 25 feet. Splices shall be limited to the areas under the valve boxes.
- H. The splices shall be made with Pentite by Rainbird, or approved equal. Neatly coil two (2) feet of cable slack at each RCV solenoid connection within access boxes.
- I. Not less than one (1) foot of cable slack shall be left on each side of all splices. The slack cable shall be placed in the trench in a series of "S" curves.
- J. Installation of sprinkler heads shall be as detailed.

3.9 BACKFILLING AND FLUSHING

- A. The procedure for backfilling shall be the same for trenches with pipe only, conductor only, or both pipe and conductor only, or conduit and conductor.
- B. Because of the expansion and contraction of the plastic pipe, backfilling shall be done in the cool part of the day. In areas where trenches are not in contact with imported topsoil, backfill with clean sand only.
- C. All lumber, rubbish, and rocks over 1" in size shall be removed from the trenches. Pipe shall have firm, uniform bearing from the entire length of each pipe line to prevent uneven settlement. Wedging or blocking of pipe will not be permitted.
- D. After the pipe and/or wires have been installed, the trench shall be backfilled with clean topsoil; where upon the soil shall be settled with clean water and regraded as needed. If clean topsoil is not available, imported clean sand shall be used.
- E. Extreme care shall be exercised by the Contractor while backfilling. Any materials or equipment damaged or destroyed while backfilling shall be repaired or replaced by the Contractor as directed by the Owner at no cost to the Owner.
- F. Contractor shall correct any subsequent settlement of trench, to the satisfaction of, and at no cost to the Owner.
- G. Flushing: Before the trench has been backfilled, all water pipe installed shall be flushed clear and clean of all dirt and foreign material.

3.10 TESTING

- A. After flushing, the pipe shall then be submitted to a leakage test. All tests on pressure lines shall be completed prior to backfilling. Soil shall be placed in trenches between fittings to insure the stability of the line under pressure. In all cases, fittings and couplings must be open to visual inspection for the full period of the test. No testing shall be done until the last solvent welded joint has had twenty-four (24) hours to set and cure. All main lines shall be subject to a 2 hour pressure test at a minimum continuous pressure of 150 PSI. A maximum pressure drop of five (5) PSI will be allowed.
- B. All control valves shall be closed. The sprinkler system main shall be slowly filled with water to line pressure.
- C. Before testing, all air shall be expelled from the pipes.
- D. Where any section of the pipe system is provided with a concrete thrust block, the test shall not be made until at least five (5) days have passed after the concrete thrust block

was installed. If higher early strength cement is used in the concrete thrust block, the test shall not be made until at least two (2) days have elapsed.

- E. Should any section of pipe be laid disclose leakage, locate and repair defective pipe or joint and retest.

PART4 – RECORD DRAWINGS AND GUARANTEE

4.1 ADJUSTING SYSTEM

- A. Before final inspection, the Contractor shall adjust and balance all sprinklers to provide adequate and uniform coverage. Spray patterns shall be balanced by adjusting individual sprinkler heads with the adjustment screws or replacing heads to produce a uniform pattern.
- B. Sprinkler spray patterns will not be permitted on pavement, walks, or structures.

4.2 AS BUILT PLANS AND SYSTEM ORIENTATION

- A. Contractor shall maintain a set of drawings on the site specifically for recording changes as they occur during the job. All changes shall be current to within 24 hours of said change. The Contractor note any changes, diagrams, or other drawing modifications necessary to show the actual location of the installed system. Actual locations for all equipment and mainlines shall be indicated by field-verified dimensions. These drawings shall be neatly drafted and clearly legible. They shall be resubmitted to Landscape Architect upon their completion. The Contractor shall conduct a training and orientation session covering the operation, adjustment, and maintenance of the irrigation system. The Contractor shall provide the Owner with parts lists and service manuals for all equipment. Contractor shall be responsible for one fall winterization and one spring activation of the sprinkler system and shall conduct these operations as part of the Owner's training and orientation procedures.

4.3 GUARANTEE

- A. The Contractor shall provide a written guarantee to the Owner covering all materials, installation, workmanship, and against defects for a period of one (1) year. Contractor shall be responsible for maintaining system and protecting it from all damage (at no cost to Owner) for the duration of the specified maintenance period. This shall include damage caused by vandalism or adverse weather conditions. Upon completion of maintenance period and final inspection, the Contractor's guarantee will apply barring these two factors.

END OF SECTION 32 80 00

SECTION 32 90 00 – LANDSCAPE INSTALLATION

PART I: GENERAL

1.01 GENERAL REQUIREMENTS

Conform to the General Conditions, Supplementary Conditions, and Division 1.

1.02 DESCRIPTION OF WORK

- A. The contractor shall coordinate activities necessary to provide labor, materials, tools, equipment, services, trees, shrubs, and ground covers required to complete the landscape operations per these specifications, as shown on the plans and details, or as directed by the Landscape Architect/Owner.
- B. These landscape operations shall be performed only by a licensed, bonded landscape contracting firm specializing in landscape installation.
- C. Trees, shrubs, and ground covers will be referred to collectively as plant material in these specifications.

1.03 PRESERVATION OF PROPERTY

The contractor shall conduct all planting installation so that no damage shall result to existing site improvements and plantings. The contractor shall be responsible for any harm resulting from his operation and shall repair or replace such damage at his own expense by qualified trades and installers acceptable to the Owner.

1.04 JOB CONDITIONS

- A. Planting operations, including soil preparation, shall proceed only during regular work periods as determined by season, weather conditions, and accepted practice. Do not perform work when there is prolonged freezing weather or when the soil is wet or muddy.
- B. The contractor shall determine the location of underground utilities and perform work to avoid possible damage. Hand excavate, as required. The contractor shall restore, at their expense, any utilities, structures, or other facilities damaged due to landscape work on this project equal to their original condition.
- C. If the contractor encounters conditions detrimental to plant growth, such as rubble, rubble fill, adverse drainage conditions, or obstructions, the contractor shall notify the Landscape Architect/Owner before planting.

1.05 PRODUCT HANDLING & TEMPORARY STORAGE

- A. All plant material handling and shipping shall be done in a manner that is not detrimental to the plants. Plant material shall be packed for shipment in accordance with prevailing practice for the type of plant being shipped. All plants shall be protected against drying, sun, wind, heat, freezing, and similar detrimental conditions at all times. When necessary, plant material shall be temporarily heeled-in to mulch or soil.
- B. Protect work by placing stakes and twine barriers (visible day or night) around any planted area if required as a barrier for pedestrians, animals, vehicles, or any other cause until acceptance of work.
- C. Plant materials showing damage from shipping, or while in storage, or during planting shall be rejected by the Landscape Architect/Owner and be replaced by the contractor at his own expense.

1.06 SUBSTITUTION OF PLANTS

No substitution of plant material will be permitted unless evidence is submitted to the Landscape Architect that a specified plant or variety cannot be obtained. If a substitution is permitted, it can be made only with the approval of the Landscape Architect/Owner.

PART II: MATERIALS

2.01 PLANT MATERIALS:

- A. All plant material furnished shall meet the grades established by the American Standard Nursery Stock (ANSI Z60.1). Each shall conform to the size and acceptable conditions listed on the plans and be free of all foreign plant material. An exception to this standard shall concern tree caliper measurements. All tree calipers shall be sized at 'ANSI' (American National Standards Institute) height, which shall be considered to be 6" above the top of the root ball.
- B. All plant materials shall consist of live woody or herbaceous materials that are vigorous, well-formed, with a well-developed fibrous root system. The material shall be free from dead branches and lichens and from damage caused by an absence or an excess of heat or moisture, insects, disease, mechanical, or other causes detrimental to good plant development.
- C. Deciduous trees shall have solitary leaders (unless indicated otherwise in the plans) and shall have only lateral branches thinned by pruning. All conifer trees shall have only one leader (growing apex) and one terminal bud. Trees shall be rejected if they have a damaged or missing leader, multiple leaders, or Y-crotches.
- D. Rootballs of the evergreen plants shall be solidly held together by the fibrous root system of the plant in its natural position and shall be composed only of the earth in which the plant has been actually growing.

- E. Container-grown plants must be plants transplanted into a container and grown in that container sufficiently long for new fibrous roots to have developed so that the root mass will retain its shape and hold together when removed from the container.
- F. Landscape Architect/Owner reserves the right to inspect all plant material at the place of growth for compliance with requirements for size, variety, and condition, including disease and if rootbound. This preliminary approval does not constitute final approval of plants at the completion of installation operations.

2.02 SOD:

- A. Sod, if used, shall be field grown one calendar year or longer, have a well-developed root structure, and be free of all weeds, disease, and insect damage.
- B. Before cutting, the sod shall be green, in an active and vigorous state of growth, and mowed to a height not exceeding one inch.
- C. The sod supplied shall be cut with a minimum of one inch of soil adhering. Provide sod composed of the following:
 - 60% Perennial Turf Type Rye Grass
 - 20% Hard Fescue
 - 20% Bluegrass
- D. Sod shall be equal to that as grown by Country Green Turf Farms, 7725- B Yelm Highway S.E., Olympia, Washington 98513, (360) 456-1006.

2.03 SEED:

- A. Grass seed of the type specified shall conform to the standards for "Certified" grade seed or better as outlined by the State of Washington Department of Agriculture "Rules for Seed Certification", latest edition. Seed shall be furnished in standard containers on which shall be shown the following information:
 - 1. The common name of the seed
 - 2. Lot number
 - 3. Net weight
 - 4. Percentage of purity
 - 5. Percentage of germination (in the case of legumes, rate of germination to include hard seed)
 - 6. The percentage of weed seed content and inert material is clearly marked for each kind of seed per applicable State and Federal Laws.
- B. Upon request, the contractor shall furnish to the Landscape Architect duplicate copies of a statement signed by the vendor certifying that a recognized seed testing laboratory has

tested each lot of seed within six months before the date of delivery on the project. Seed that has become wet, moldy, or otherwise damaged in transit or storage will not be accepted.

2.04 GROUND COVER:

Provide plants established and well-rooted in removable containers or integral peat pots with no less than the minimum number and length of runners required by ANSI Z60.1 for the pot size shown or listed.

2.05 TOPSOIL:

Imported topsoil for berming and other required sub-grade work shall be a friable sandy loam typical of topsoils cultivated locally. Topsoil shall be free of objectionable subsoil materials, weeds, noxious weed seeds, refuse, sticks, brush, and rocks larger than 1" across the greatest dimension. Topsoil shall contain no more than 10% rocks or gravel by volume.

2.06 FERTILIZER:

- A. Fertilizer for backfill mix and soil preparation shall be of standard commercial-grade organic or inorganic fertilizer of the kind and quality specified herein. It may be separated or in a mixture containing a percentage of total nitrogen, available phosphoric acid, and soluble potash in the amounts specified. All fertilizers shall be furnished in standard unopened containers with weight, name of plant nutrients, and manufacturer's guaranteed statement of analysis clearly marked, all per State and Federal Laws.
- B. Commercial fertilizer shall have the following guaranteed chemical analysis:

<i>Ingredient</i>	<i>Percentage</i>	
	<i>Minimum</i>	<i>Maximum</i>
Nitrogen	10	16
Phosphoric Acid	10	16
Water Soluble Potash	5	16

- C. The contractor shall apply top dress fertilizer on the surface of all plant pits after installation and shall be Osmocote 18-6-12, nine-month slow release applied at the following rates;

Trees Over 10' Height	2 Cups
Trees Under 10' Height	1 cup
All Shrubs Except 1 Gallon	½ Cup

All One Gallon Plants	¼ Cup
All Ground Covers	¼ Cup

D. Fertilizer tablets for plant material shall have a nitrogen-phosphorus-potassium ratio similar to 20-10-5. The nitrogen shall be derived from urea formaldehyde and supplied in a two-year controlled release 21-gram or 10-gram size table. Tablets shall be manufactured by "Agriform" or equal.

E. Apply fertilizer tablets in the following quantities per plant:

2¼" pots and 4" pots	One-10 gram tablet
1-gallon container	One-21 gram tablet
All shrubs	Three-21 gram tablets
All trees	One tablet per ½" tree caliper. (min. 4-21 gram tablets)

F. Where more than one tablet is required, they shall be evenly spaced around the plant, directly next to the rootball.

2.07 BED MULCH TOP DRESSING:

Bed mulch top dressing for all shrub and ground cover areas shall be Ground Fir & Hemlock bark of uniform color, free from weeds, seeds, sawdust, splinters, resin, tannin, wood fiber, salts, or other compounds detrimental to the plant, like. The size range shall be ¼" to 1" with a maximum of 50% passing a ½" screen. Submit a sample to Landscape Architect for approval.

2.08 SOIL AMENDMENT

Soil amendment for soil preparation and use in soil mix shall be nitrified wood residual product, composted at 130° to 160° for four (4) and six (6) months and screened to 1/2" minus in size. Soil amendment shall be equal to the following compost brands as available from: (Submit a one gallon sample for approval to landscape architect.)

- "Top Grade Compost" as available from Corliss Resources, Lake Tapps, WA, ph. 253279-9102.
- "Cedar Grove Compost" as available from Cedar Grove Compost, Maple Valley, WA, ph. 877-764-5748.
- PREP/LRI Compost as available from Randle's Sand & Gravel, Puyallup, WA, ph. 253-537-6828.

2.09 SOIL MIX

- A. Soil mix for raised planters and backfill mix shall consist of the following by volume:

60% screened clean loamy sand
40% specified soil amendment

- B. Submit a one-gallon sample of soil mix to the Landscape Architect for approval before use on the project. No rocks or gravel shall be allowed in soil mix.

2.10 PREPARED BACKFILL MIX:

- A. For all plant materials (except Rhododendrons & Azaleas) shall consist of the following per cubic yard (Submit sample for approval to landscape architect):

1/3 c.y. clean site soil
2/3 c.y. specified soil mix
4 c.f. bagged Canadian shredded peat moss
3 lbs. specified commercial fertilizer
3 lbs. single super phosphate
1 lb. iron sulfate

- B. Backfill mix for Rhododendrons & Azaleas shall consist of 2/3 above specified backfill mix and 1/3 fine grind hem-fir bark mulch. (Submit a one-gallon sample for approval to landscape architect)

- C. Prepared backfill mix shall be thoroughly blended and mixed in an area adjacent to the planting work and accurately proportioned using a suitable container. Unused site soil excavated from plant pits shall be disposed of off-site. Protect backfill mix from moisture until it has been placed in backfill around plants.

2.11 CHEMICAL HERBICIDE:

A weed control pre-emergent herbicide which is approved for ornamental nursery stock and approved by the Landscape Architect/Owner. Application of herbicide must be in compliance with all local and state codes and laws. Do not use Casaron or Norasac brands. Apply at conclusion of the specified maintenance period. Verify compatibility of herbicide with landscape plant materials.

2.12 SPECIFIED MATERIALS:

The contractor is required to keep all labels, bags, and other containers for all fertilizers, chemical soil amendments, pre-emergents, herbicides, and other chemicals until approved by the Landscape Architect as proof that specified materials and quantities have been used.

Failure to do so shall result in additional amendments required to meet these specifications and be verified by the Landscape Architect.

2.13 STAKES & GUYING:

Stakes and guys shall be installed as shown on the plans.

2.14 ROOT BARRIER

- A. Root Barrier Panel EP-2450 by NDS, or approved equal, shall be installed at the edge of any paving within eight feet of the tree trunk.

PART III: EXECUTION

3.01 LAYOUT OF PLANTING:

- A. Plant and lawn area location layout and staking will be the responsibility of the contractor, subject to the approval of the Landscape Architect.
- B. The contractor shall place the plants starting from the perimeter of the bed area and progressing to the center of any planting bed as shown on the plans and details.
- C. Tree locations shown on the plans shall be considered approximate unless shown with a specific distance. Tree locations shall be adjusted so that the tree is not directly in front of sprinkler heads, lights, or signage.
- D. Plant material quantities shown on the plans are approximate and for reference only. The contractor is responsible for determining the exact number of plants required to place all plants at the spacing indicated and to verify those indicated quantities with plan drawings.

3.02 PLANT BED PREPARATION:

- A. The contractor shall prepare all planting areas to remain weed and debris-free until final acceptance. The planting areas shall include all planting beds and those areas shown on the plans or directed by the Landscape Architect/Owner.
- B. Preparation of all planting areas shall be undertaken as indicated on the plans and shall include the following:
 - 1. The contractor shall kill and remove existing weeds and vegetation except as the Landscape Architect directs or indicated otherwise on plans.
 - 2. Remove all debris from all planting surfaces, including asphalt, stumps, rocks, and clods.

3. Scarify and cultivate existing compacted subgrades in proposed landscape beds before grading operations.
4. Supply specified topsoil and soil amendment to depths indicated on plans, specifications, and details. All landscape areas shall receive topsoil, whether indicated on the plans or not, so finish grades after soil preparation and bed mulch application shall conform to the final grading requirements listed in the following paragraphs.

3.03 FINISH GRADING:

A. SURFACES:

The contractor shall leave all planting surfaces with a firm, uniform surface, free of undulations or other irregularities. Remove all rocks, clods, and debris from all planting surfaces. The finish grade of all non-turf areas shall be 2" below the tops of adjacent pavements and curbs unless indicated otherwise on plans.

B. PRELIMINARY GRADING:

Shall be done in such a manner as to anticipate the finished grade. Excess soil shall be removed or redistributed before application of soil mix, fertilizer, and mulch. Where soil is to be replaced by plants and mulch, the contractor shall include an allowance so that when finish grading has begun, there shall be no deficiency in the specified depth of mulched planting beds.

C. FINAL GRADING AND DRAINAGE:

The contractor shall bear final responsibility for proper surface drainage of the site and the features thereon. Any discrepancy in the drawings or specifications, obstructions on the site, or prior work done by another party that the contractor feels precludes establishing proper drainage shall be brought to the attention of the Landscape Architect in writing for correction or relief of said responsibility.

D. STRUCTURAL FILL AREAS:

Any landscape areas within structural fill zones shall have said structural fill materials excavated to 12" below finish grades in shrub beds and 6" below finish grades in lawn areas and replaced with specified topsoil. Dispose of excavated materials off-site.

3.04 SOIL PREPARATION (All Landscape Areas)

- A. The contractor shall cultivate all areas on the plan to receive soil preparation to light and friable consistency, where the following ingredients, per 1000 s.f., shall be uniformly tilled into the top 6"-8" of soil, using a rototiller or similar machine, and then thoroughly watered down:

9 c.y. specified soil amendment (3" average depth)
15 lbs. commercial fertilizer
15 lbs. iron sulfate
10 lbs. triple superphosphate (0-45-0)
100 lbs. agricultural gypsum

- B. The contractor shall conduct all soil preparation and planting operations under favorable weather conditions only. Soil shall not be worked when excessively dry or wet. Landscape Architect reserves the right to stop any work taking place during a period when conditions are considered detrimental to soil structure or plant growth. Fine grade as specified above.
- C. The Landscape Architect shall approve all planting beds before rototilling (with soil amendments distributed over surface of bed) and after rototilling has been completed. All beds shall be approved for fine grading before planting operations.

3.05 SOIL PREPARATION (All lawn areas, seed, sod or hydro-seed)

- A. Procedural operations shall be the same for items A through C in paragraph 3.04 above, except for soil amendments.
- B. Soil amendments shall consist of the following per 1,000 square feet:

9 c.y. specified soil amendment (3" average depth)
100 lbs. dolomite lime
100 lbs. agricultural gypsum
15 lbs. commercial fertilizer

- C. The finish grade shall be ½" below all adjoining paved surfaces.
- D. Refer to Section 329219 specifications if hydroseeding is required.

3.06 ORDER OF PLANTING:

In mixed planting areas, trees shall be planted first, followed by the larger shrubs, low shrubs, and then ground covers.

3.07 PLANTING (TREES AND SHRUBS):

- A. Planting shall be done only when conditions favorable for planting exist. Under no circumstances will planting during freezing weather or in frozen ground be permitted.
 - 1. Plants shall not be installed in any area below the finished grade as shown on the plans or as directed by the Landscape Architect.

2. Planting shall be performed in accordance with the details shown on the plans and in accordance with the most suitable techniques.
- B. Before excavation, plants to be installed shall be placed as indicated on the planting plan. The Landscape Architect shall check the locations of all plants in the field and shall indicate the exact position before the actual planting operation proceeds.
- C. Set trees and shrubs in the center of pits, plumb and straight. Except in lawn areas, plant at such a level that after settlement, the crown of the plant will be flush with finish grading and forming a shallow trough directly over the ball of the earth and slightly smaller than the pit to facilitate watering.
- D. Set plants in a backfill mixture to such depth that the top of the plant ball will be flush with the finished grade. Backfill the remainder of the hole and soak thoroughly. Water the backfill until saturated to the full depth of the hole. Pour Top Dress fertilizer over the surface of the plant basin at indicated rates. Keep empty containers per paragraph 2.12. Install fertilizer tablets as specified.
- E. A mound of earth shall be formed as directed around each tree and shrub so as to produce a shallow basin to retain water, the diameter to exceed the diameter of the root spread. Plants shall be watered in place during and after backfilling. Trees planted in lawn areas shall receive no watering basins but shall be centered in a 3'-0" diameter circle mulched with bed mulch.
- F. Prune plants only at the time of planting and according to standard horticultural practice to preserve the natural character of the plant. Pruning is to be done under the supervision of the Landscape Architect. Remove all dead wood, suckers, and broken or badly bruised branches. Use only clean, sharp tools. Paint cuts over 3/4" diameter, covering exposed areas with tree paint.
- G. Immediately after planting operations are complete, beds and pits shall be dressed off so as to achieve a neat and presentable appearance.
- H. Planting operations shall be identical for all plants to be transplanted. Refer to plans and directions from the Landscape Architect.

3.08 GROUND COVER:

- A. Spacing: Space plant material in plant areas and at the spacing shown in neat rows, ensuring complete coverage of all planting areas under and around trees and shrubs. Triangular spacing is required unless specified otherwise on plans. Pour Top Dress fertilizer around the plant surface at indicated rates.
- B. Watering: Water plants immediately after planting. No plant shall be out of its container for more than thirty (30) minutes before being planted and watered.

- C. Apply pre-emergent herbicide to all ground cover and shrub beds after the specified maintenance period. Do not use Casaron or Norasac Brands.
- D. Mulching: Re-cultivate compacted soil, rake smooth and distribute bed mulch to a 3" depth on the surface of trees, ground cover, and shrub areas. Remove any bed mulch that falls over the ground covers or shrubs. Do not apply Bed Mulch to wildflower beds if used.

3.09 SOD INSTALLATION:

- A. Sod installation shall not begin until the sprinkler system is complete and operating.
- B. Soil preparation and fine grading shall be performed as previously specified for lawn areas; however, in addition, 5 lbs./1000 s.f. of 38-0-0 fertilizer shall be raked into the top two (2) inches of soil.
- C. The area shall then be rolled in two directions, the second to be done at right angles to the first rolling until a smooth, uniform grade has been produced. The finish grade before sod installation shall be one (1) inch below adjacent pavements. The lawn bed shall be inspected and approved by the Landscape Architect prior to sodding.
- D. Sod shall be unrolled in place, with careful attention to staggering pieces and tight joints. Immediately after placement, soak with water. Roll sod after the second watering.

3.10 SEED BED PREPARATION AND PLANTING (for seeding of non-hydro-seed areas)

- A. The contractor shall notify the Landscape Architect not less than 24 hours in advance of any seedbed preparation, and shall not begin the work until areas prepared or designated for seeding have been approved. Seeding shall not be done during windy weather or when the ground is frozen. Seed and fertilizer shall be placed at the rate and mixture specified.
- B. Seedbed preparation, fine grading, and fertilizing shall be the same as for sod installation specified in Paragraph 3.09 above, except that 38-0-0 shall be applied after germination. Seed mix shall be applied at a rate of 6 lbs./1000 s.f. The seed mix shall consist of the following blend:
 - 60% Turf Type Perennial Ryegrass
 - 20% Bluegrass
 - 20% Hard Fescue
- C. Upon completion of seeding operations, a mulch of finely ground peat moss shall be uniformly applied at the rate of 2 cubic yards per 1000 s.f. to obtain a ½" - ¾" depth.
- D. Erect a temporary protective barrier of acceptable materials around the new seed, sod, or hydroseed lawn areas and post warning signs, where necessary, to prevent damage or harmful effects to the lawn areas.

- E. Prior to acceptance, the lawn shall be mowed a minimum of one cutting after the grass has attained a height of at least 2 inches. The cutting height shall not be less than 1 inch or exceed 2 inches in height with all cuttings removed. Acceptance of lawn planting as herein specified shall be based on a uniform stand of grass and uniform grade at the time of final inspection. Areas that are bare or have a poor stand of grass and areas not having a uniform grade throughout shall be reseeded and regraded until the Landscape Architect gives final approval. The acceptance of seeded lawn areas shall not be contingent upon final inspection but contingent upon a healthy, vigorous, established stand of grass. Completion of the final inspection shall not free the contractor from responsibility for healthy, vigorous grass.

3.11 RESPONSIBILITY DURING CONSTRUCTION:

- A. The contractor shall ensure adequate and proper care of all plant material and work done on this project until the contract is completed and accepted. Adequate and proper care shall include keeping all plant material in a healthy, growing condition.
- B. The contractor shall have sole responsibility for keeping the planted areas free from insect infestation, weeds and grass, litter, and other debris, along with retaining the finished grades in a neat, uniform condition.
- C. The General Contractor is responsible for ensuring that other work (trenching, electrical, signage, lighting, painting, sealing, staining, etc.) occurring in lawn or plant areas does not damage newly installed landscaping. Landscape damaged by other trades after installation shall be repaired at the cost of the General Contractor at no additional cost to the Owner or Landscape Contractor.
- D. Scheduled field visits: The contractor shall contact the landscape architect 48 hour prior to the following inspections.
 - 1. Site Element Layout: Observe the layout and configuration of site construction items such as wall locations, paving and walkways, lawn, and shrub beds, berms, boulders, pools and ponds, trellis structures, etc., prior to construction.
 - 2. Irrigation System: Observe mainline pressure test prior to covering pipe trenches with backfill (if required in specifications). Observe the functioning of sprinkler heads and coverage of spray patterns.
 - 3. Grades and Soil Amendments: Observe soil amendments applied to landscape areas prior to roto-tilling operations. Observe rough grades and finish grades prior to plant material and bed mulch installations.
 - 4. Plant Materials: Observe plant material sizes, types, and locations prior to planting installation.
 - 5. Substantial Completion: Determine if work is substantially complete to start the maintenance period; establish a punch list of work needing completion if necessary.

3.12 CLEAN-UP AND PROTECTION:

- A. During landscape work, keep pavements clean and the work area orderly as determined by the Landscape Architect/Owner. Failure to comply will result in a stop work order issued.

- B. Protect landscape work and materials from damage due to landscape operations, operations by other Contractors, and trades and trespassers. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged landscape work as directed.
- C. Remove debris, soil, and fertilizer from all paved surfaces, curbs, and walks.
- D. At the completion of each work area, remove landscape contractor-generated debris, equipment, and surplus materials.
- E. Material removed shall be disposed of off-site by the contractor.

3.13 PRE-MAINTENANCE

- A. Pre-maintenance as herein specified shall immediately follow the completion of each planting operation and shall continue through the General Inspection until acceptance of the planting project.
- B. Ground cover plants shall be kept in a healthy, vigorous growing condition by watering, replanting, weeding, and cultivating the entire area of the bed.
- C. Trees and shrubs shall be watered, weeded, cultivated, and replaced immediately if not in a healthy growing condition.
- D. Smooth grade all earth surfaces, remove weeds, debris, and breaking clods, and leave in an acceptable condition.
- E. It is the contractor's responsibility to protect new plant and lawn areas from damage during the installation and maintenance periods. This shall include damage caused by theft, vandalism, or adverse weather conditions.

3.14 PUNCH LIST FIELD VISIT

- A. A punch list field visit shall be requested by the contractor when installation, as set forth on drawings and specifications, is substantially complete. Landscape Architect shall be given forty-eight (48) hours notification prior to inspection.
- B. Completion of the general inspection, punch list items, and acceptance of the contract work by the Owner's representative and the Landscape Architect shall release the contractor from maintenance under paragraph PRE-MAINTENANCE above and shall mark the start of the 60-day maintenance period under paragraph MAINTENANCE below.

3.15 MAINTENANCE & PLANT ESTABLISHMENT PERIOD

- A. Maintenance, as required under paragraph PRE-MAINTENANCE above, shall extend for 60 consecutive calendar days following general inspection and acceptance of contract work. Additional maintenance activities for this 60-day period shall include:
1. Protect all areas against damage, including erosion and trespass, and provide all necessary safeguards. Maintain and keep in good repair all temporary barriers erected to prevent trespass.
 2. Keep all walks and paved areas clean. Keep the site free from debris resulting from landscape work and maintenance.
 3. Repair all damaged planted areas and replace plants immediately upon discovery of damage or loss. Straighten and tighten tree stakes and guys as needed.
 4. Check all barriers and temporary fencing daily during the work week and repair or replace them immediately.
 5. Maintain adequate moisture in the soil to ensure vigorous growth. This includes non-irrigated areas.
 6. Keep contract areas free from weeds by cultivating, hoeing, or hand pulling. Using chemical weed killers will not relieve the contractor of the responsibility for keeping areas free from weeds over 1 inch in height at all times.
 7. Water, fertilize, and mow lawn areas following everyday nursery practices and in accordance with these specifications.
 - a. Water lawn three times daily for ten (10) days. Following the ten days, watering shall be done in accordance with the Owner's watering schedule.
 - b. The lawn shall be fertilized with an accepted organic fertilizer every 30 days.
 - c. The lawn shall be kept at a height of between two (2) and three (3) inches at all times. Catch and remove all lawn cuttings after each mowing.
 8. During the 60-day maintenance & plant establishment period, the contractor is responsible for protecting all landscape areas as outlined in item "1". Based on the Landscape Architect's judgment, any plants not in a healthy, vigorous, thriving condition at the end of the 60 day period shall be replaced. This shall include plants damaged by theft, vandalism, or adverse weather conditions.

3.16 FINAL PROJECT CLOSE-OUT

The final project close-out of work for acceptance of the work will be made at the conclusion of the 60-day maintenance and plant establishment period, upon successful

completion of all punch list items, and upon four days' notice to the Landscape Architect requesting this site visit. At this visit, all plants must be in a healthy growing condition, weeds not in evidence, pruning complete, staking and tying secure, sprinkler risers vertical, and sprinklers performing as per manufacturer's description. Acceptance shall follow upon meeting these requirements. Acceptance of the final site visit shall mark the start of all workmanship and plant guarantees.

3.17 CLEAN-UP

Upon completion of the work under this section, the contractor shall remove from the premises all surplus materials, tools, equipment, rubbish, and debris; wash all dirt and fertilizer from pavements, curbs, walls, and other structures resulting from his/her work and leave the work in clean, neat and workmanlike conditions satisfactory to the Landscape Architect.

3.18 GUARANTEE

- A. The contractor shall furnish to the Owner any guarantee or warranty furnished as a standard trade practice in connection with his purchase of equipment, materials, or items that are used on the project.
- B. All plant materials shall be guaranteed to be in a living, healthy, and disease-free condition from the date of acceptance to the completion of one full year or one entire growing season, whichever is longer. One full growing season shall be considered for this contract from April 1st to October 1st of any given year. All plant material replaced during the guarantee period shall be guaranteed for a year. The contractor shall not be held responsible for theft, vandalism, or adverse weather conditions beyond the 60-day maintenance period.

END OF SECTION 32 90 00

SECTION 32 90 90
PART I: - GENERAL

1.01 GENERAL REQUIREMENTS

Conform to the General Conditions, Supplementary Conditions and Division 1.

1.02 SCOPE OF WORK

Hydroseeding shall occur on all areas shown and those areas outside clearing limits disturbed by construction.

1.03 PLANTING SEASON

Hydroseeding shall be done between August 15 and September 30 or between March 15 and May 15. In areas receiving automatic irrigation, hydroseeding may occur between May 15 and August 15. Actual planting shall be performed only when weather and soil conditions are suitable and in accordance with locally accepted practice and/or approved by the Landscape Architect. Hydroseeding shall not be attempted when wind velocities prevent uniform application or when winds drift the material outside the areas to be seeded.

1.04 APPLICATION QUALIFICATION

Hydroseeding shall be performed by an experienced applicator.

1.05 GUARANTEE

The guarantee of all lawn areas under this contract shall be for one full year from the completion date of final acceptance. Although not responsible for maintenance of the lawn during the guarantee period, the Contractor should, for his/her own interest, assure him/herself that minimum care is being given to the lawn as he/she is liable for its health during the guarantee period. At the conclusion of the guarantee period, the Landscape Architect will make another inspection to determine the condition of lawns. All areas of lawn not in a healthy growing condition, as determined by the Landscape Architect, shall be reseeded with seed as originally planted. Such replacement shall be made in the same manner as specified from the original plantings and at no extra cost to the Owner. The guarantee on lawns shall be limited to one replacement. The Contractor is not responsible for vandalism.

PART II: - PRODUCTS

2.01 SEED SPECIFICATION

A. STANDARD SEED MIX (Percentage by Weight)

Hard Fescue (Aurora II)	20%
Perennial Turf Type Rye Grass (Manhattan 5, Silver Dollar)	60%
Kentucky Bluegrass (Midnight II, Prosperity)	20%

The above seed mixture shall be applied at the rate of 240 pounds per acre.

- C. ANALYSIS - A complete analysis of the seed shall be submitted by the Contractor prior to planting, including the percent of pure seed, germination, other crop seed, inert and weed seed, and the germination test date to the Landscape Architect. All crop seed in excess of one percent must be itemized.
- D. SEED LAW - All seeds shall conform to the requirements of the Washington State Seed Law and, where applicable, the Federal Seed Act.
- E. NOXIOUS WEED SEED - All seed shall be free of seeds listed as primary noxious by the Washington State Seed Law. Seeds shall not contain seeds of weeds listed as secondary noxious by the Washington State Seed Law, singly or collectively in excess of the labeling tolerance specified by the Washington State Seed Law.
- F. REJECTION - When seeds furnished under this specification fail to meet the requirements within tolerance as provided by the Washington State Seed Law, the lot shall be rejected.
- G. PREPARATION FOR DELIVERY - Seeds shall be packed in clean, dry, solid containers of uniform weight. Seed shall be labeled as required by law.

2.02 FERTILIZER

Commercial fertilization mix 10-20-20 applied at the rate of 10 pounds per 1000 s.f.

2.03 WATER

Water shall be free from oil, acid, alkali, salt, and other substances harmful to the growth of grass and shall be from a source approved prior to use.

2.04 WOOD-CELLULOSE FIBER MULCH

Wood-cellulose fiber mulch for use with hydraulic application of grass seed and fertilizer shall consist of specially prepared wood-cellulose fiber processed to contain no growth - no germination - inhibiting factors and dyed an appropriate color to facilitate visual metering of application of materials. Apply mulch at the rate of 2,000 pounds per acre.

2.05 SOIL STABILIZER

Soil stabilizer shall be capable of penetrating soil surface and binding soil particles; shall contain an adhesive to hold seed and wood-cellulose fibers together and bond them to the soil; and shall be made from naturally occurring and biodegradable materials. Apply soil stabilizer at the rate of 50 pounds per acre.

PART III: - EXECUTION

3.01 PREPARATION OF GROUND SURFACES

- A. The contractor shall fine-grade all areas prior to hydroseeding. Verify with the Landscape Architect prior to seeding. Refer to plant section 32 90 00 for those areas to receive additional preparation.
- B. Remove all stones and debris over 1 inch in diameter.
- C. Cultivate ground surfaces and grade smooth.
- D. Compact lightly to eliminate all soft spots, hills, and valleys.
- E. The finish grade shall be ½" below all adjoining curbs, roads, walks, and other paved surfaces.

3.02 HYDROSEEDING

Seed shall be broadcast with approved hydraulic seeding equipment, in combination with wood-cellulose fiber mulch, soil stabilizer, and fertilizer, distributed uniformly over designated areas. Half of the seed shall be sown with the sower moving in one direction, the other half with the sower moving at right angles to the first sowing. Seed shall not be broadcast during windy weather. Hydroseeding operator shall remove all seed mulch in its entirety from adjoining paving, structures, and plants.

3.03 INSPECTION

Areas not fully germinated with a uniform stand of grass or areas damaged through any other cause shall be reseeded as herein specified at the Contractor's expense.

3.04 RESEEDING

Reseed and fertilize with 3-1-2 mix ratio all areas failing to show an uniform stand of grass after germination of seed, or damage through any cause before final inspection as specified by the Contractor at no additional cost to the Owner.

3.05 MEASUREMENT AND PAYMENT

- A. The lump sum contract amount for the contract item "Landscaping" shall include all compensation for providing the labor, equipment and materials necessary to

perform the work as indicated on the plans, and specified herein, for all of the materials including but not limited to: soil stabilizers, fertilizer, mulch and seed.

- B. The lump sum contract amount for the contract item "Landscaping" shall be full compensation to furnish, install and maintain all the hydroseeding as shown on the plans and specified herein.

END OF SECTION

SECTION 33 00 00

PART 1 - GENERAL

1.01 Description:

Furnish all material, labor, services and related items required to complete concrete paving work indicated on drawings and/or specifications. The items of work to be performed shall include but are not necessarily limited to:

- A. Sidewalks, curbs, ramps, flatwork, slabs and associated work.

1.02 References:

This section references the latest revisions of the following documents. They are a part of this section as specified and modified. In case of conflict between the requirements of this section and those of the listed documents, the requirements of this section shall prevail.

American Association of State Highway and Transportation Officials (AASHTO) “Standard Specifications for Highway Materials and Methods of Sampling and Testing”

American Public Works Association (APWA), Washington State Chapter, “Standard Specifications for Municipal Public Works Construction” (most recent edition).

WSDOT Standard Specifications for Road, Bridge and Municipal Construction (most recent edition).

1.03 Submittals:

The Contractor shall submit to the landscape architect materials containing the following information:

- A. Procedures to be used in the construction under this Section with regard to the division of labor and the responsibilities of the Contractor and all sub-contractors involved.
- B. Furnish samples, manufacturer's product data, test reports, and materials certifications for Portland cement products, expansion joint materials, fillers, sealants, etc.

1.04 Quality Assurance:

- A. Contractor shall provide, at the request of the landscape architect, original supplier invoices for concrete. Concrete found not to be consistent with these specifications shall be removed from the project site(s) unless otherwise approved by the Engineer. The Engineer may copy the original invoices and then return them to the Contractor in a timely manner.

- B. Prior to commencing the work of this Section, the Contractor shall verify the accuracy of layout and grading. Verify that all sub-grade and base course aggregate conditions are as specified. Notify the Engineer of any discrepancies and coordinate the correction of those discrepancies with other trades as necessary.
- C. Notify Engineer a minimum of 48 hours prior to any concrete pour for inspection of base course aggregates, forms, reinforcing steel, and placement of joint materials. Anticipate pours to provide adequate time for inspection without causing delays to other trades.
- D. Protect all finished work. Vandalized work will be rejected.

PART 2 - PRODUCTS

2.01 Concrete Mix:

Concrete mix shall be Class 5 (3/4), per WSDOT Specifications (most recent edition), Section 8-14, Cement Concrete Sidewalks, characteristics as follows:

28 day compressive strength	2,300 psi
94# Sacks Cement per Cubic Yard (see "Cement", below)	5
dry Fine Aggregate #2 per Sack (see "Aggregates", below)	291 lb.
dry Coarse Aggregate #5 per Sack (see "Aggregates", below)	387 lb.
Max. Water	6.5 Gal./Sack
Fibrous Reinforcing	1.5 lb/cy
Slump (per ASTM C143)	2 - 3.5 inches

2.02 Portland Cement:

Use only Type II Portland Cement, as specified in WSDOT Standard Specifications (most recent edition), Section 9-01.2(1), and AASHTO M 85.

2.03 Aggregates:

A. Fine Aggregates:

Fine Aggregate #2 per WSDOT Standard Specifications (most recent edition), Section 9-03.1(2) C. Fine Aggregates shall consist of sand or other inert materials, or combinations thereof, having hard, strong, durable particles free from an adherent coating. Fine Aggregate shall be washed thoroughly to remove clay, loam, alkali, organic matter, or other deleterious matter. Fine Aggregate #2 Particle Gradation shall be as follows:

<u>Sieve Size</u>	<u>% Passing</u>
#4	95 - 100
#8	68 - 86
#16	47 - 65
#30	27 - 42
#50	9 - 20
#100	0 - 7
#200 (wet)	0 - 2.5

B. Coarse Aggregates:

Coarse Aggregate #5 per, WSDOT Standard Specifications (most recent edition), Section 9-03.1(5)A. Coarse Aggregate shall consist of gravel, crushed stone, or other inert material or combination thereof having hard, strong, and durable pieces free from adherent coatings. Coarse Aggregate shall be washed to thoroughly remove clay, silt, bark, sticks, alkali, organic matter, or other deleterious material. Coarse Aggregate Particle Gradation shall be as follows:

<u>Sieve Size</u>	<u>% Passing</u>
1" Square	100
3/4" Square	80 - 100
3/8" Square	10 - 40
#4	0 - 4
#200	0 - 0.5

2.04 Forms:

Steel, wood, or other suitable material of size and strength to resist movement during concrete placement. Use straight forms, free of defects. Use flexible spring steel forms or laminated boards to form curved edges if specified.

2.05 Steel Reinforcement:

- A. Welded wire mesh to be furnished in flat sheets not rolls, unless otherwise specified or approved.
- B. Reinforcing bars to be deformed steel bars, ASTM A 615, Grade 60, sized per the Drawings.
- C. Concrete Engineered Reinforcing Fibers (Optional for slabs only instead of or in conjunction with steel reinforcement where vehicle traffic is anticipated):

Fibermesh Company, 4019 industry Drive, Chattanooga, Tennessee 37416, per ASTM C1116-89, or approved equal.

2.06 Expansion Joint Materials:

- A. Joint Filler: Pre-formed non-extruding resilient material; ASTM D1752, Type I, 3/8 inch wide by depth required to bring top surface within 1/2 inch of slab surface.
- B. Joint Sealer: Self-leveling polyurethane; ASTM C920, Type M, Grade SL, Class 25 (color shall match concrete color).

2.07 Curing Materials:

Curing shall be per WSDOT Standard Specifications (most recent edition), section 5-05.3(13), or as approved by the Landscape Architect/ Owner.

PART 3 - EXECUTION

3.01 Barriers:

The Contractor shall erect and maintain barricades, canopies, guards, lights and warning signs to the extent required by law and as is prudent for the protection of the public and protection of the work.

3.02 Form Construction:

- A. Set forms to required grades and alignments rigidly braced and secured. Install sufficient quantity of forms to allow continuous progress of work and so that forms can remain in place at least 24 hours after concrete placement.
- B. Check completed formwork for grade and alignment to following tolerances:
 - 1. Top of forms not more than 1/8 inch in 10 feet.
 - 2. Vertical face, on longitudinal axis, not more than 1/4" in 10 feet.
- C. Clean forms after each use and coat with form release agent as often as required to ensure separation from concrete without damage.

3.03 Reinforcement:

- A. Locate and place reinforcement as indicated on the contract drawings. Support reinforcing steel or wire fabric with pre-cast concrete blocks at spacing that will ensure minimum deflection of the reinforcement.

3.04 Concrete Placement:

- A. Do not place concrete until sub-base, forms, and reinforcement have been checked for line and grade. Moisten sub-base if required to provide a uniform dampened condition at time concrete is placed.

- B. The concrete shall be placed and spread uniformly between the forms and thoroughly compacted with a steel shod strike-board.
- C. After the concrete has been thoroughly compacted and leveled, it shall be floated with wood floats and finished at the proper time with a metal float.

3.05 Joints:

- A. Joints shall be edged with a quarter-inch (1/4") radius edger, and sidewalk edges with a half-inch (1/2") radius edger.
 - B. Expansion Joint placement shall be 10' to 15' spacing, with Control Joint spacing equal and alternating. Provide Joints as shown on the Contract Drawings.
 - C. Provide Control Joints, dividing the concrete areas as indicated on the Drawings.
 - 1. Form Control Joints in fresh concrete by grooving the top portion with a recommended cutting tool and finishing the edges with a jointer.
 - 2. Saw Control Joints into hardened concrete using power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut joints into concrete as soon as the surface is not torn, abraded, or otherwise damaged by cutting action.
- C. Expansion Joints:
- 1. Provide pre-molded 3/8" joint filler for expansion joints abutting concrete curbs, catch basins, manholes, inlets, structures, walks and other fixed objects as applicable or as indicated in the Contract Drawings.
 - 2. Expansion Joints shall be located and placed according to the Contract Drawings, and sufficiently supported to ensure final placement perpendicular to the finished surface of the pavement.
 - 3. Extend joint fillers full width and depth of joint and not less than 1/2 inch or more than 1 inch below finished surface where joint sealer is indicated. Furnish joint fillers in one-piece lengths for full width being placed, wherever possible. Where more than one length is required, lace or clip joint filler sections together. Protect top edge of joint filler during concrete placement with a metal or plastic temporary strip. Remove protection after concrete has been placed on both sides of joint before sealant is applied.

3.06 Concrete Finishing:

- A. After striking off and consolidating concrete, smooth surface by screening and floating. Use hand methods only where mechanical floating is not possible. Adjust floating to compact surface irregularities, and refloat repaired area to provide a continuous smooth finish.

- B. After completion of floating and trowelling when excess moisture or surface sheen has disappeared, complete finishing as follows:

Broom finish, by drawing fine hair broom across concrete surface, perpendicular to line of traffic after the tooled grid is installed. The Engineer's decision will be final on acceptance of joint finishing details and surface finishes.

3.07 Curing:

Protect and cure finished concrete paving, complying with applicable requirements of the References specified in paragraph 1.03 of this Section. Use only pre-approved curing and sealing compound or moisture curing method.

3.08 Clean-up:

- A. Repair and replace broken or defective concrete as directed by Engineer.
- B. Protect concrete from damage until acceptance of work. Exclude traffic from pavement for at least fourteen (14) days after placement. When construction traffic is permitted, maintain pavement as clean as possible by removing surface stains and spillage of materials as they occur.
- C. Sweep concrete pavement and wash free of stains, discoloration, dirt and other foreign material just prior to final inspection.

END OF SECTION