Project Specifications and Plans

For Construction of:

CHEHALIS RECREATION PARK IMPROVEMENT PROJECT

City of Chehalis
Public Works Department

May 2019

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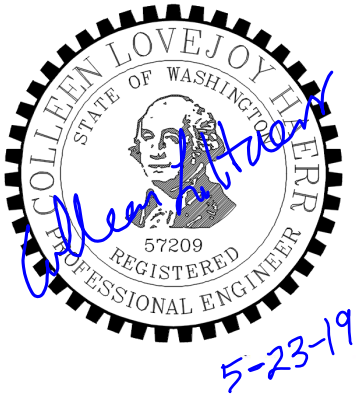
DIVISION 33 – UTILITIES



I hereby certify that the portion of this technical submission described above was prepared by me or under my direct supervision and that I am a duly registered Professional Engineer under the laws of the State of Washington.

Colleen L. Haerr, PE

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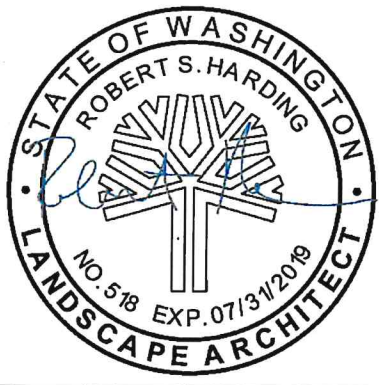
BALLFIELD SPECIFICATIONS



I hereby certify that the portion of this technical submission described above was prepared by me or under my direct supervision and that I am a duly registered Professional Landscape Architect under the laws of the State of Washington.

Robert Harding

SECTION 00 11 13

ADVERTISEMENT FOR BIDS

CITY OF CHEHALIS
Recreation Park Improvement Project

PLEASE READ FULLY AND CAREFULLY. BIDS SHALL BE COMPLETE UPON SUBMISSION, INCLUDING ALL FORMS AND ATTACHMENTS REQUIRED HEREIN. FAILURE TO STRICTLY COMPLY WITH THESE STATED TERMS OF SUBMISSION MAY RESULT IN REJECTION OF THE BID.

Sealed proposals for furnishing all materials, labor and equipment for the following described work will be received by Caryn Foley, City Clerk of the City of Chehalis, 350 N. Market Blvd., Room 101, Chehalis, Washington 98532 at or before **2:00 pm on June 20, 2019**. Each Bid must be submitted in a sealed envelope clearly identified as "Chehalis Recreation Park" . All Bids shall be submitted on the regular form furnished within the project specifications. Faxed or emailed Bids and/or late submissions will not be accepted.

Each Bid must be accompanied by a cashier's check, postal money order, or surety bond by a bonding company licensed to do business in the State of Washington, made payable to the City of Chehalis in an amount not less than five percent (5%) of the total bid.

Bid documents for informational purposes and inspection shall be on file at the Parks and Recreation Office, 1321 S. Market Blvd., Chehalis, WA 98532, from 8:00 am to 5:00 pm, Monday through Friday, and at the Skillings Connolly office in Lacey, WA at 5016 Lacey Blvd. SE, and the City's website at www.ci.chehalis.wa.us .

Electronic or hard copies of the Bid Documents may be obtained by contacting Skillings Connolly at (360) 491-3399 or chaerr@skillings.com . A non-refundable fee of $150.00 is required for hard copies. Bidders are required to register as plan holders with Skillings Connolly. A copy of the plan holders list for this project will be available on the City's website. Failure to register may result in Bidder not being informed of addenda.

Addenda will be issued if necessary and posted on the City's website at www.ci. chehalis.wa.us and emailed to those bidders on the plan holders list.
The City of Chehalis reserves the right to reject any or all bids, waive informalities, or to accept that bid which appears to serve the best interests of the City.

During the pendency of this Advertisement for Bids, Bidder shall not contact any City staff except those designated in this Bid document or subsequent addendums or correspondence. Any questions or concerns should be addressed in writing to Colleen Haerr, project engineer for the City at 360-491-3399 or chaerr@skillings.com five business days prior to the due date outlined herein. Non-compliance with this provision may result in rejection of the Bid.

A non-mandatory pre-bid meeting will be held at the Project Site Ballfields, on **June 10, 2019, at 10:00 am**. The ballfields can be accessed from 401 SW Parkland Drive, Chehalis, WA 98532.

General Work Description

The project provides for the improvement of Recreation Park, in the City of Chehalis, including but not limited to ballfield improvements, ballfield artificial turf grass, a new stormwater conveyance system, new pathways and walkways, new irrigation system and a new "promenade" walkway through the center of the four ballfields.

Bids cannot be altered or amended after the deadline. Alterations made before opening must be signed by the Bidder or Bidder's agent. No Bid may be withdrawn after the date and time of opening without approval of the City.

Bidders are expected to examine all documents that comprise this invitation to Bid. Bidders shall promptly notify the City of any omission, ambiguity, inconsistency, or error that they may discover upon examination of the Bid documents. The City assumes no responsibility for errors or misrepresentations that result from the use of incomplete Bids.

Contractor Training

Beginning July 1, 2019, businesses not listed on the WA State Department of Labor & Industries "*Public Works Training Exemption List*" are required to have training before submitting a bid and/or performing work on public works projects. Awarding agencies are required to verify all contractors submitting bids meet this new requirement before awarding the contract. Businesses that have been in business with an active Unified Business Identifier (UBI) number for three (3) or more years, AND have performed work on three (3) or more public works projects, are exempt from these training requirements. Training options are available at https://www.lni.wa.gov/TradesLicensing/PrevWage/Contractors/Training.asp.

Prevailing Wages

All Bids are subject to Washington State prevailing wages. The State of Washington prevailing wage rates applicable for this public works project, which is located in Lewis County, may be found at the following website address of the Department of Labor and Industries:

https://fortress.wa.gov/lni/wagelookup/prvWagelookup.aspx

E-Verify Compliance

All contracts with a value greater than $1,000 and lasting 60 days shall require that the awarded contractor register with the Department of Homeland Security E-Verify program. Contractors shall have 30 calendar days after the execution of the contract to register and enter into a Memorandum of Understanding (MOU) with the Department of Homeland Security (DHS) E-Verify program. After completing the MOU the contractor shall have up to 90 calendars days to begin using E-Verify and provide a written record on the authorized employment status of their employees and those of any subcontractor(s) currently assigned to the contract.

Bidder agrees not to discriminate against any employee or applicant for employment because of race, religion, color, sex, age, disability, or national origin. Bidder agrees to comply with the Immigration Reform and Control Act of 1986 and the Americans with Disabilities Act of 1990, and

Title VI of the Civil Rights Act of 1964. Bidder will indemnify and hold City harmless for any failure to so comply and any discrimination for which Bidder may be charged.

The City of Chehalis is an equal opportunity employer and invites responsive bids from all qualified responsible bidders.

Time for completion of this project is 60 working days.

The Engineer's base estimate is approximately $1,500,000 to $2,000,000.

BASIS FOR SELECTION

Bids received by the City shall be evaluated based on the following criteria:

1. Bid amount. It is the intent of the Owner to award a contract to the lowest responsible Contractor.

2. The Contractor shall have, at the time of bidding and throughout the period of the Contract, all required licenses to perform the work required in the Contract. The selected Contractor shall submit, prior to contract award, project relevant certifications, licenses, and proof of insurance.

The decision of the City to award a contract shall not be subject to legal challenge or appeal in any form. Whenever it is deemed to be in the best interest of the City, the City Council shall waive informalities in any and all Bids. The right is reserved to reject any Bid or any part of any Bid when such action is deemed to be in the best interest of the City of Chehalis. Bids must be submitted complete in every detail and, when requested, supporting or supplemental information shall be provided. If a Bid involves any exception from stated requirements, they must be clearly noted as exceptions and listed in the Bid. The reason for any exception shall also be stated.

Prior to award of contract, the Bidder shall submit a list of all subcontractors and/or suppliers performing work on this project for acceptance by the City. Specific qualification and submittal requirements are stated in the project contract provisions and specifications.

The successful Bidder shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, fuel, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start up, and completion of the work.

SIGNING OF THE AGREEMENT

When the City submits to the Successful Bidder the "Notice of Award" and Agreement for execution, it will be in the number of copies necessary, all of which shall be signed and shall constitute an original Agreement. Within five days thereafter, the Successful Bidder shall sign and deliver all copies of the Agreement to the City, accompanied by a certificate of insurance. The City, within three days thereafter, shall return to the Successful Bidder a fully executed copy of the agreement.

The City of Chehalis reserves the right to reject any and all Bids, to waive technical or legal deficiencies, to make such investigation as it deems necessary to evaluate Contractor's qualifications, to accept any Bid that may be deemed in the best interest of the City and to

negotiate terms and conditions of any Bid leading to acceptance and final execution of a contract for services.

PUBLISH DATES:

May 25, 2019 in *The Chronicle*

May 25, 2019 in the Seattle Daily Journal of Commerce

END OF SECTION 00 11 13

SECTION 00 21 13

INSTRUCTIONS TO BIDDERS

CITY OF CHEHALIS
Recreation Park Improvement Project

1.1 DEFINED TERMS:

A. Certain terms used in these Instructions to Bidders have the meanings indicated below which are applicable to both the singular and plural thereof.

1. Bidder: One who submits a Bid directly to Owner as distinct from a sub-bidder, who submits a Bid to a Bidder.

2. Successful Bidder: The lowest responsive, responsible Bidder to whom Owner (on the basis of Owner's evaluation) makes an award.

3. Contracting Agency: The City of Chehalis.

1.2 COPIES OF CONTRACT DOCUMENTS:

A. Complete sets of Contract Documents must be used in preparing Bids; neither Owner nor Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Contract Documents.

B. Owner and Engineer, in making copies of Contract Documents available on the above terms, do so only for the purpose of obtaining Bids for the Work and do not confer a license or grant permission for any other use.

1.3 EXAMINATION OF BIDDING AND CONTRACT DOCUMENTS, OTHER RELATED DATA, AND SITE:

A. It is the responsibility of each Bidder before submitting a Bid to:

1. Examine thoroughly the Contract Documents and other related data identified in the Contract Documents (including technical data referred to in Paragraph 1.3-B below).

2. Visit the site to become familiar with and satisfy Bidder as to the general, local and site conditions that may affect cost, progress, performance, or furnishing of the Work.

3. Attend pre-bid meeting on the date and at the location listed in the Advertisement for Bids.

4. Consider federal, state and local laws and regulations that may affect cost, progress, performance or furnishing of the Work.

5. Carefully study all reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site.

6. Consider the information known to Bidder; information commonly known to contractors doing business in the locality of the Project; information and observations obtained from visits to the Site; the Contract Documents; and the Site-related reports and drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on

    a. The cost, progress, and performance of the Work;

    b. The means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Contract Documents; and

    c. Bidder's safety precautions and programs.

7. Agree at the time of submitting its Bid that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of Bid for performance of the Work at the price(s) bid and within the times required, and in accordance with the other terms and conditions of the Contract Documents.

8. Become aware of the general nature of the work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.

9. Study and carefully correlate Bidder's knowledge and observations with the Contract Documents and such other related data.

10. Promptly notify Engineer of all conflicts, errors, ambiguities or discrepancies in or between the Contract Documents and such other related documents.

11. When conflicts, errors, ambiguities or discrepancies are discovered in or between Contract Documents and/or other related documents, and when said conflicts, etc., have not been resolved through the interpretations by Engineer as described in Paragraph 1.3-A10, Bidder shall include in the Bid the greater quantity or better quality of Work, or compliance with the more stringent requirement resulting in a greater cost. Such greater cost shall be included in the Bid.

B. During the progress of the Work, if preexisting subsurface or latent physical conditions are encountered at the site, different materially from those indicated in the Contract, or if preexisting unknown physical conditions of an unusual nature, differing materially from the Contract, are encountered at the site, the party discovering such conditions shall promptly notify the other party in writing of the specific differing site conditions before they are disturbed and before the affected Work is performed.

Upon written notification, the Engineer will investigate the conditions and if he/she determines that the conditions materially differ and cause an increase or decrease in the cost or time required for the performance of any Work under the Contract, an adjustment, excluding loss of anticipated profits, will be made and the Contract modified in writing accordingly. The Engineer will notify the Contractor of his/her determination whether or not an adjustment of the Contract is warranted.

No Contract adjustment which results in a benefit to the Contractor will be allowed unless the Contractor has provided the required written notice.

The equitable adjustment will be by agreement with the Contractor. However, if the parties are unable to agree, the Engineer will determine the amount of the equitable adjustment using unit prices or other means to establish the costs. Extension of time will be evaluated in accordance with Paragraph 1.9 of the General Conditions.

If the Engineer determines that differing site conditions do not exist and no adjustment in costs or time is warranted, such determination shall be final as provided unless the Contractor makes a claim, as provided for in Paragraphs 1.30 and 1.31 in the General Conditions.

If there is a decrease in the costs or time required to perform the Work, failure of the Contractor to notify the Engineer of the differing site conditions shall not affect the Contracting Agency's right to make an adjustment in the costs or time.

No claim by the Contractor shall be allowed unless the Contractor has followed the procedures provided in the General Conditions.

C. Before submitting a Bid, each Bidder will be responsible to obtain such additional or supplementary examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface and Underground Facilities) at or contiguous to the site or otherwise, which may affect cost, progress, performance or furnishing of the Work or which relate to any aspect of the means, methods, techniques, sequences or procedures of construction to be employed by Bidder and safety precautions and programs incident thereto or which Bidder deems necessary to determine its Bid for performing and furnishing the Work in accordance with the time, price and other terms and conditions of the Contract Documents.

D. The submission of a Bid will constitute an incontrovertible representation by Bidder

1. That Bidder has complied with every requirement of this Paragraph 1.3,
2. That without exception the Bid is premised upon performing and furnishing the Work required by the Contract Documents and applying the specific means, methods, techniques, sequences or procedures of construction (if any) that may be shown or indicated or expressly required by the Contract Documents,
3. That Bidder has given Engineer written notice of all conflicts, errors, ambiguities and discrepancies in the Contract Documents and the written resolutions thereof by Engineer are acceptable to Bidder, and when said conflicts, etc., have not been resolved through the interpretations by Engineer as described in Paragraph 1.3-A10, Bidder has included in the Bid the greater quantity or better quality of Work, or compliance with the more stringent requirement resulting in a greater cost, and
4. That the Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work.

1.4 INTENT OF DRAWINGS AND SPECIFICATIONS

A. The Drawings and Specifications shall be considered and used together, and anything appearing as a requirement of either shall be accepted as applicable to both even though not so stated therein or shown. The Engineer may furnish supplemental Drawings and Specifications to define more clearly any requirement of the original

Contract Documents. In case of any conflict between the listed and the supplemental Drawings and Specifications, the latter shall govern. The Contractor shall not be entitled to extra compensation because of his compliance with the requirements of such supplemental Drawings and Specifications unless they contain new requirements involving costs which clearly could not have been anticipated by an experienced Contractor in his examination of the original listed Drawings and Specifications or could not reasonably be inferred there from as requirements of the Contract.

B. All Specifications and Notes appearing on the Drawings shall have the same force and effect as though they were repeated herein.

1.5 COMPETENCY OF BIDDERS

A. To demonstrate qualifications to perform the work, each Bidder must be prepared to submit within three (3) days after bid opening, upon owner's request, detailed written evidence, such as financial data, previous experience, present commitments, and other such data as may be called for. Each bid must contain evidence of Bidder's qualification to do business in the state of Washington

1.6 AVAILABILITY OF LANDS FOR WORK, ETC.

A. The lands upon which the Work is to be performed, rights-of-way and easements for access thereto, and other lands designated for use by the Contractor in performing are identified in the Contract Documents. All additional lands and access thereto required for temporary construction facilities, staging of construction equipment or storage of materials and equipment to be incorporated in the Work are to be obtained and paid for by the Contractor.

1.7 INTERPRETATIONS AND ADDENDA :

A. All questions about the meaning or intent of the Bidding Documents are to be directed to Owner in writing, including questions from the pre-bid meeting. Interpretations or clarifications considered necessary by Owner in response to such questions will be issued by Addenda via the Builders Exchange web site for the Project. Requests for such interpretation shall be submitted in writing and to be given consideration shall be received at least seven (7) calendar days prior to the date fixed for opening of Bids. Only questions answered by formal written Addenda will be binding. Failure of any Bidder to receive any such Addenda shall not relieve such Bidder from any obligation under his Bid as submitted. All Addenda so issued shall become a part of the Contract Documents. No Addenda will be issued within five (5) calendar days prior to the date fixed for opening Bids, except to extend the date for the Bid opening. Oral and other interpretations or clarifications will be without legal effect.

Address questions in accordance with specification section 00 21 14.

B. Addenda may also be issued to modify the Contract Documents as deemed advisable by Owner or Engineer.

1.8 BID SECURITY

A. Each Bid must be accompanied by Bid security made payable to Owner in an amount of five percent (5%) of Bidder's maximum Bid price and in the form of a certified or bank check or a Surety Bid Bond Form attached, issued by a surety.

B. The Bid security of Successful Bidder will be retained until such Bidder has executed the Contract, furnished the required Contract security and met the other conditions of the Notice of Award, whereupon the Bid security will be returned. If the Successful Bidder fails to execute and deliver the Contract and furnish the required Contract security and certificates of insurance within ten (10) calendar days after the Notice of Award, Owner may annul the Notice of Award and the Bid security of that Bidder will be forfeited. When Proposals have been examined and corrected as necessary, Bid security with Bids which are not competitive will be returned within seven (7) days after the Bid opening. All other proposal bonds and deposits will be held until the Contract has been properly executed. When the Contract has been properly executed, all remaining deposits or bonds, except those subject to forfeiture, will be returned.

1.9 CONTRACT TIME

A. The number of days within which, or the dates by which, the Work is to be substantially completed and also completed and ready for final payment is set forth in the Contract.

1.10 LIQUIDATED DAMAGES

A. Provisions for liquidated damages are set forth in the General Conditions

1.11 SUBSTITUTE AND "OR-EQUAL" ITEMS:

A. The Contract, if awarded, will be on the basis of materials and equipment described in the Drawings or Specifications without consideration of possible substitute or "or-equal" items. Whenever it is indicated in the Drawings or Specifications that a "substitute" or "or-equal" item of material or equipment may be furnished or used by Contractor if acceptable to Engineer, application for such acceptance will not be considered by Engineer until after the Effective Date of the Agreement.

1.12 SUBCONTRACTORS, SUPPLIERS AND OTHERS:

A. The Contractor shall not be required to employ any Subcontractor, Supplier, other person or organization against whom Contractor has reasonable objection.

1.13 PROPOSAL FORM

A. The Proposal Form is included with the Bidding Documents.

B. All blanks on the Proposal Form must be completed by printing in black ink or by typewriter.

C. Bids by corporations must be executed in the corporate name by the president or a vice-president or other corporate officer, accompanied by evidence of authority to sign and the corporate seal must be affixed. The corporate address and state of incorporation must be shown below the signature.

D. Bids by partnerships must be executed in the partnership name and signed by a partner, accompanied by evidence of authority to sign, whose title must appear under the signature, and the official address of the partnership must be shown below the signature.

E. All names must be typed or printed in black ink below the signature.

F. The Bid shall contain an acknowledgement of receipt of all Addenda (the numbers of which must be filled in on the Proposal Form).

G. The address and telephone number for communications regarding the Bid must be shown.

H. Evidence of authority to conduct business as an out-of-state corporation in the state where the Work is to be performed shall be provided in accordance with Paragraph 1.5 above. State Contractor license number, if any, must also be shown.

I. Comply with RCW 39.30.060 – Bids on public works – identification, substitution of subcontractors.

1.14 SUBMISSION OF BIDS

A. Bids shall be submitted on the prescribed Proposal Form contained in the Contract Documents, at the time and place indicated in the Advertisement for Bid. Bids shall be enclosed in an opaque sealed envelope, marked "City of Chehalis" and with the Project title "Chehalis Recreation Park Improvement Project" and the name and address of Bidder, and accompanied by the Bid security and other required documents. If the Bid is sent through the mail or other delivery system, the sealed envelope shall be enclosed in a separate envelope with the notation "BID ENCLOSED" on the face of it.

1.15 MODIFICATION AND WITHDRAWAL OF BIDS:

A. Bids may be modified or withdrawn by an appropriate document duly executed in the manner that a Bid must be executed and delivered to the place where Bids are to be submitted at any time prior to the opening of Bids. A Bid may be withdrawn at any time prior to the scheduled time for opening Bids. This may be done by the Bidder in person or as a facsimile or written request. A telephoned request for withdrawal of a Bid will not be recognized. If withdrawal is made personally, a written acknowledgment thereof will be required.

B. After the scheduled time for opening Bids, no Bidder will be permitted to withdraw their Bid unless no Award of Contract has been made prior to the expiration of sixty (60) days immediately following the date when Bids are opened. Bids received after the scheduled bid opening time will be returned to the Bidder unopened.

C. If, within twenty-four (24) hours after Bids are opened, any Bidder files a duly signed, notarized, written notice with the Owner and promptly thereafter demonstrates to the reasonable satisfaction of the Owner that there was a material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid and the Bid security will be returned. Thereafter, that Bidder will be disqualified from further bidding on the Work to be provided under the Contract Documents.

1.16 OPENING OF BIDS:

A. Bids will be opened and read aloud publicly at the place where Bids are to be submitted. A tabulation of the amounts of the base Bids and major alternates (if any) will be made available to Bidders after the opening of Bids by posting on the Builders Exchange website.

B. The Owner reserves the right to postpone the date and time last announced for opening Bids and such postponement may be made at any time prior to the time last announced for opening Bids. The Owner will give written or facsimile notice of any such postponement to each party to whom Contract Documents have been issued, followed by issuance of an Addendum confirming the changing of the announced time for opening Bids.

1.17 BIDS TO REMAIN SUBJECT TO ACCEPTANCE:

A. All Bids will remain subject to acceptance for the time period specified for Notice of Award and execution and delivery of Agreement and required Contract security and certificate of insurance by Successful Bidder. Owner may, at Owner's sole discretion, release any Bid and return the Bid security prior to that date.

1.18 AWARD OF CONTRACT:

A. Owner reserves the right to reject any or all Bids, including without limitation the right to reject any or all nonconforming, nonresponsive, unbalanced or conditional Bids and to reject the Bid of any Bidder if Owner believes that it would not be in the best interest of the Project to make an award to that Bidder, whether because the Bid is not responsive or the Bidder is unqualified or of doubtful financial ability or fails to meet any other pertinent standard or criteria established by Owner. Owner also reserves the right to waive any minor irregularities in the Bid or to cancel the Project in whole or in part. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

B. Within sixty (60) days after the opening of all accepted Bids, the Owner may act either to issue a Notice of Award or to reject all Bids. Failure of the Owner to issue a Notice of Award within the said time, or such additional time as the apparent lowest responsive, responsible Bidder shall agree to extend its Bid, shall constitute rejection of all Bids.

C. Any or all bids will be rejected if Owner has reason to believe that collusion exists among the Bidders. The firm or individual submitting this proposal has not by or through any of

its officers, partners, Owners, or any other person associated therewith, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with this project, and is not financially interested in or otherwise affiliated in a business way with any other Bidder on this project.

D. In evaluating Bids, Owner will consider the qualifications of Bidders, whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices and other data, as may be requested in the Proposal Form or prior to the Notice of Award.

E. Owner may consider the qualifications and experience of Subcontractors, Suppliers, and other persons and organizations proposed for those portions of the Work. Owner may also consider the operating costs, maintenance requirements, performance data and guarantees of major items of materials and equipment proposed for incorporation in the Work when such data is required to be submitted prior to the Notice of Award.

F. If the Contract is to be awarded, it will be awarded to lowest responsive, responsible Bidder whose evaluation by Owner indicates to Owner that the award will be in the best interests of the Project.

G. If the Contract is to be awarded, Owner will give Successful Bidder a Notice of Award within sixty (60) days after the day of the Bid opening. No other act of Owner or others will constitute acceptance of a Bid.

H. The Notice of Award will be signed by a duly authorized official of the Owner and delivered to the Bidder in the manner provided for written notices. Delivery of a Notice of Award shall obligate the Bidder who receives such notice to furnish the necessary bond(s), insurance policies and to execute the Contract and furnish Statement of Intent to Pay Prevailing Wages.

I. Within ten (10) days after delivery of Notice of Award, or such additional time as is allowed by the Owner, the Bidder shall furnish in triplicate satisfactory bond(s), insurance certificate or insurance policies, a copy of their Washington State Contractors License, Statement of Intent to Pay Prevailing Wages, and shall execute the Contract. Failure, neglect, or refusal by the Bidder to do so shall constitute a breach of agreement to furnish the required documents and to enter into the Contract. The damages to the Owner for such a breach of agreement will include monetary loss from, among other things, interference with the Owner's construction program and normal operations. The amount of such damage is difficult or impossible to compute. The Owner has estimated, and each Bidder by submitting its Bid agrees that, reasonable compensation for damages resulting from such breach of agreement shall be the amount of the bid security and promises to pay that amount as liquidated damages for such breach.

J. Any Bidder receiving a Notice of Award, who fails, neglects or refuses to furnish the bond(s), insurance certificate or insurance policies and executes the Contract as herein provided, shall not be the lowest responsive, responsible bidder. The Owner may then select the next lowest responsive, responsible bidder and deliver a Notice of Award to that Bidder.

1.19 CONTRACT SECURITY

A. When the Successful Bidder delivers the executed Agreement to Owner, it must be accompanied by the required bond(s).

1.20 SIGNING OF CONTRACT

A. When Owner gives a Notice of Award to the Successful Bidder, it will be accompanied by three (3) unsigned counterparts of the Contract. Within ten (10) days thereafter Contractor shall sign and deliver the three (3) counterparts of the Contract to Owner with the required bond(s) and insurance. Within ten (10) days thereafter Owner shall deliver one fully signed counterpart to Contractor.

1.21 RETAINAGE

A. Provisions concerning retainage and Contractor's rights to deposit securities in lieu of retainage are set forth in the General Conditions.

1.22 CONTRACTOR'S RESPONSIBILITIES

A. It is understood that the Drawings, Specifications, and other Contract Documents do not purport to control the method of performing the Work, but only the requirements as to the nature of the completed work. The Contractor assumes the entire responsibility for the method of performing and installing the Work. Suggestions as to the method included in the Contract Documents shall be deemed advisory only, and the feasibility of such methods or the lack thereof, shall not affect the Contractor's liability or status as an independent Contractor under this Contract.

1.23 PERMITS

A. The successful Bidder shall be responsible for obtaining all necessary permits associated with the actual construction activities, including but not limited to, permits to haul oversize equipment on state highways and local roads, and solid waste disposal permits.

1.24 LAWS AND REGULATIONS:

A. The Bidder is assumed to be familiar with all federal, state, county and city laws or regulations, which in any manner affect those engaged or employed in the Work, materials or equipment used in the proposed construction, or which in any way affect the conduct of the Work; and no plea of misunderstanding will be considered on account of ignorance thereof. If the Bidder shall discover any provisions in these Drawings, Specifications, or other Contract Documents contrary to any laws or regulations, he shall report it to the Owner in writing.

1.25 CITY OF CHEHALIS BUSINESS LICENSE REQUIREMENTS:

A. Any contractor or subcontractor bidding work in the City of Chehalis will be required to obtain, and furnish evidence thereof, a City of Chehalis business license prior to contract award.

1.26 BIDDER'S CHECKLIST

A. The following forms must be completed in full and executed by all bidders and submitted with the bid:

1. Signed Proposal Form including acknowledgement of Addenda
2. Proposal Signature Page
3. Bid Bond
4. Non-collusion Declaration
5. Subcontractor List

B. The following will be executed after the Contract is awarded:

1. Contract: To be executed by the successful Bidder in triplicate.
2. Contract Bond.
3. Certificate of Insurance: To be submitted in triplicate.
4. Statement of Intent to Pay Prevailing Wages.
5. Powers-of-Attorney: Attorneys-in-fact who sign bonds must file with each bond a certified and effective dated copy of their power-of-attorney.

END OF SECTION 00 21 13

SECTION 00 21 14

NOTICE TO PROSPECTIVE BIDDERS

CITY OF CHEHALIS
Recreation Park Improvement Project

The City of Chehalis's policy for this project is that no contact with prospective bidders occurs during the bidding process. Questions that are pertinent to bidding the contract that are not answered by information contained in the contract documents, will be responded to by submitting them via fax (360) 491-3857 to the office of Skillings Connolly, 5016 Lacey Blvd. SE, Lacey, WA 98503, Attn: Nicholas Taylor, PE.

All faxes must be received at least seven (7) calendar days prior to the bid opening for a response. The City's response will be sent by fax approximately five (5) days prior to bid opening, if possible, to everyone who has purchased plans.

If you believe the Contract Plans or Specifications contain an error(s), it would be appreciated if you would also provide us with that information via fax. If there is an error(s) that requires remedial action, an addendum will be issued to all prospective bidders.

I have the following question(s):

_____

_____

I believe the Plans and/or Specifications are erroneous at:

_____

_____

Please respond to:

_____

Name

_____

Representing

_____

Address

_____

Fax Number

END OF SECTION 00 21 14

SECTION 00 35 00

STATE WAGE RATES

CITY OF CHEHALIS
Recreation Park Improvement Project

The State of Washington prevailing wage rates applicable for this public works project, which is located in Lewis County, may be found at the following website address of the Department of Labor and Industries:

https://fortress.wa.gov/lni/wagelookup/prvWagelookup.aspx

Record Keeping and Access to Payroll Records

ADMINISTRATIVE POLICY

STATE OF WASHINGTON
DEPARTMENT OF LABOR AND INDUSTRIES
EMPLOYMENT STANDARDS

TITLE:	**RECORD KEEPING AND ACCESS TO PAYROLL RECORDS (NON-AGRICULTURAL EMPLOYMENT)**	**NUMBER:**	**ES.D.1**
CHAPTER:	**RCW 49.12.050** **RCW 49.46.040 and 070** **WAC 296-126** **WAC 296-128**	**ISSUED:** **REVISED:**	**1/2/2002** **5/7/2004**

ADMINISTRATIVE POLICY DISCLAIMER

This policy is designed to provide general information in regard to the current opinions of the Department of Labor & Industries on the subject matter covered. This policy is intended as a guide in the interpretation and application of the relevant statutes, regulations, and policies, and may not be applicable to all situations. This policy does not replace applicable RCW or WAC standards. If additional clarification is required, the Program Manager for Employment Standards should be consulted.

This document is effective as of the date of print and supersedes all previous interpretations and guidelines. Changes may occur after the date of print due to subsequent legislation, administrative rule, or judicial proceedings. The user is encouraged to notify the Program Manager to provide or receive updated information. This document will remain in effect until rescinded, modified, or withdrawn by the Director or his or her designee.

Recordkeeping requirements, Industrial Welfare Act, RCW 49.12

This policy addresses non-agricultural employer record keeping responsibilities for under the Industrial Welfare Act and the Minimum Wage Act. In most cases the requirements are essentially identical. **See ES.D.2** for agricultural employer requirements.

Employers bound by RCW 49.12 must keep records of the names of all employees, the address and occupation of each employee, dates of employment, rate or rates of pay, amount paid each pay period and the hours worked. See RCW 49.12.050 and WAC 296-126-050.

Employees must be provided with itemized statements of pay at the time of payment of wages showing pay basis (hours or days worked), rate or rates of pay, gross wages and deductions taken from pay. See WAC 296-126-040.

Employers paying workers by direct deposit must provide a pay statement to workers on the established payday. The pay statement may be transmitted electronically, e.g., by

e-mail, as long as each employee has computer access to receive the information.

"An itemized statement" means a separate statement issued to employees on each payday. Pay periods shall be identified by month, day, year, and payment date.

The statement shall include the total of all actual hours worked, with regular and overtime hours shown separately, and all rate or rates of pay whether paid on hourly, salary, commission, piece rate or combination thereof or other basis during the pay period. Workers paid on rate other than hourly or salary are entitled to a detailed printed accounting of commissions, piece rate, or other methods of payment earned in the pay period.

1. Employees protected by the Industrial Welfare Act have the right to examine records kept by their employers. Employers must make the above records "available to the employee upon request at a reasonable time." See WAC 296-126-050(2).

a. "**Available to the employee**" means that the *originals* of the required records (name, address, occupation, dates of employment, rate of pay, amounts paid each pay period) are made available to the employee for inspection, review, transcription and/or photocopying. Records must be available to the employee for inspection at the employer's usual place of employment.

b. "**Upon request**" means an oral or written request by the employee.

c. "**At any reasonable time**" generally means within ten business days from date of request by employee.

2. Making records available. Employers must make records available for inspection by the department. The department may inspect the required records. See RCW 49.12.050.

The department can also require statements of employers relative to wages, hours and conditions of employment, and can inspect the books, records and physical facilities of those employers who are bound by the Industrial Welfare Act. See RCW 49.12.041.

The above means that the department has the authority to request reasonable production of an employer's records, i.e., can request the employer to provide copies or can request the employer to allow the Department to examine the requested records on the employer's premises and to copy or have copied the relevant materials.

The department is also entitled to request meetings with employers and employer's agents to obtain statements or other information.

3. Poster requirements. Employers are required to post a copy of the Industrial Welfare rules in a poster (Your rights as a Worker) provided by the department in a readily accessible location within plain view in each work site where one or more employee is located. See WAC 296-126-080.

4. Records must be kept for three years. All records required must be kept for at least three years. See WAC 296-126-050(1).

a. "All records required" includes the original time records, including dates and hours worked, recorded on time sheets, time clocks, time cards, computer-generated time records, video camera (if used as a means of record keeping by the employer), or any other method of recording hours worked.

Upon discharge, employees have a further right to make a written request and receive from their employer within ten days, a written statement setting forth reasons for discharge and the effective date of discharge. See WAC 296-126-050(3).

Recordkeeping requirements of the Minimum Wage Act, RCW 49.46

The initial record keeping requirements of the Minimum Wage Act (MWA) are essentially identical to those under the Industrial Welfare Act. Employers subject to the MWA must keep a record of each employee's name, address, occupation, rate of pay, amount paid in each pay period and hours worked each day and each workweek. See RCW 49.46.070.

Additionally, under the provisions of the MWA, employers must keep the following records:

- Employee's date of birth, if under the age of 18.
- Time of day and day of the week that each employee's workweek begins.
- Total daily or weekly earnings at straight time rate.
- Total overtime earnings for weeks in which overtime was worked.
- Date of the wage payment and the dates of pay period covered.
- Total wages paid for each pay period.
- All additions or deductions to or from the wages for each pay period and a record of the additions or deductions from pay.

Definitions of terms:

b. The **"employee's name"** is his or her full name as used for social security purposes. The employee's address is his or her home address. Occupation is the occupation in which the employee is presently employed. An employer may use symbols or employee numbers in place of names but they must be uniform and defined.

c. A **"workweek"** is "a fixed and regularly recurring period of 168 hours or seven consecutive 24-hour periods." It can begin on any day or the week and at any hour of the day and need not coincide with the calendar week.

If all, or a defined group of employees have a workweek which begins on the same day, a single notation of the time of day and day of the week that each workweek begins is sufficient.

Separate notations must be made for employees or groups of employees who have a workweek beginning and ending at a different time.

d. A **"workday"** is "a fixed and regularly recurring period of 24 hours." It can begin at any hour of the day but must begin at the same time each day.

e. A **"place for keeping required records"** means the records must be kept on the premises where the employee is employed or at a central location and must be made available for inspection by an authorized representative of the department within a reasonable time. A "reasonable time" is determined to be within 10 business days of receipt of a written request.

Upon request from the department, employers subject to the MWA must provide the above information to the department. See RCW 49.46.070.

5. Required records must also be accessible to employees. An employee who is entitled to the protections of the Minimum Wage Act who requests "his or her work record" may inspect the records that his or her employer is required to keep "at any reasonable time." See WAC 296-128-025.

6. "Employee work record" means the original records and must include the name, address, and occupation of each employee; dates of employment; rate or rates of pay including regular and overtime rates; amount paid each pay period to each employee; all deductions from or additions to wages; and the hours and dates worked including regular and overtime hours.

7. Inspection of records. Such records shall be open upon request to inspection, review, transcription and/or photocopying by the employee and must be available at the employee's usual place of employment.

a. "Upon request" shall mean an oral or written request by the employee.

b. "At any reasonable time" generally means within 10 business days from date of request by employee.

8. All records required must be kept for three years. See WAC 296-128-020.

9. "All records required" shall include the original time records, including dates and hours worked, recorded on time sheets, time clocks, time cards, computer-generated time records, video camera (if used as a means of record keeping by the employer), or any other method of recording hours worked.

10. Time Clocks and Rounding Practices. Employers may use time clocks, sign- in/out sheets, electronic swipe cards, time cards, or other method of keeping track of employee's dates and hours worked. Employees must be paid for all time worked, which includes all preparatory and concluding activities. Employers may pay for all minutes on the time card,

or may use the rounding practices described below.

a. Differences between clock records and actual hours worked when rounding is not used: Time clocks are not required. When employer's use the time clock method, minor differences between the clock records and actual hours worked cannot ordinarily be avoided, but major discrepancies should be discouraged since they raise a doubt as to the accuracy of the records of the hours actually worked. The employer controls the workplace and to avoid potential pay issues surrounding time clock punches, should not

allow employees to arrive and clock in early for their own convenience. Should employees arrive before their scheduled starting time and begin their work, or continue to work after their closing time, they must be paid for that time unless as described in the following paragraphs.

When a time clock is used, an employee must be allowed to punch in at the time they are required to report for work and must be allowed to punch out only when they are finished performing tasks at the end of their shift. If a written time card is used, an employee or their supervisor must be allowed to record the actual time they are required to report for work and the time when they are finished performing tasks at the end of their shift.

b. Rounding practices: It has been found that in some industries, particularly where time clocks are used, there has been the practice for many years of recording the employees' starting time and stopping time by rounding the time to the nearest 5 minutes, or to the nearest one-tenth or quarter of an hour. Employers may not utilize recordkeeping systems in which 15- minute segments of work time are not recorded or paid. When rounding to the nearest quarter- hour, employers must round based on the 7-minute rule, i.e., when employees are 1 to 7 minutes late, they must be paid for the entire quarter-hour; if they are 8 to 14 minutes late, payment may begin at the nearest quarter-hour. If they clock out 7 minutes before the end of their shift, they must be paid to the end of that shift; if they clock out 8 minutes prior to the end of their shift, their payment may stop at the nearest quarter-hour.

A system where it is always rounded down is not appropriate. The rounding practice must work both ways so that sometimes it is rounded up and sometimes it is rounded down.

Presumably, this arrangement averages out so that the employees are fully compensated for all the time they actually work. For enforcement purposes, this practice of computing working time will be accepted, provided that it is used in such a manner that it will not result, over a period of time, in failure to compensate the employees properly for all the time they have actually worked.

Rounding practices may be used only with a time clock record keeping system or when a written record keeping system accurately reflects the actual time the employee signed in before and after the scheduled shift.

Examples of time clock rounding:

The following chart is provided as an example of rounding practices based on the 7- minute rule.

CLOCK IN TIME	**=**	7:52 a.m.	/ PAY AS	7:45 a.m.
		7:55 a.m.	/ PAY AS	8:00 a.m.
		8:07 a.m.	/ PAY AS	8:00 a.m.
		8:09 a.m.	/ PAY AS	8:15 a.m.
		8:21 a.m.	/ PAY AS	8:15 a.m.
		8:23 a.m.	/ PAY AS	8:30 a.m.
CLOCK OUT TIME	**=**	4:51 p.m.	/ PAY AS	4:45 p.m.
		4:54 p.m.	/ PAY AS	5:00 p.m.
		5:07 p.m.	/ PAY AS	5:00 p.m.
		5:09 p.m.	/ PAY AS	5:15 p.m.
		5:22 p.m.	/ PAY AS	5:15 p.m.
		5:24 p.m.	/ PAY AS	5:30 p.m.

Rounding is not permitted for meal and rest periods.

The Washington meal and rest period requirements found in WAC 296-126-092 require a 30-minute meal period no later than the end of the fifth working hour, and a 10-minute rest period in each four- hour working period. Employers cannot round**,** deduct, or average any time from a meal or rest period. Examples: 1) If the employee works four minutes into an unpaid 30-minute meal period, the employer must start the 30-minute meal period from the time the employee actually stops working; or

2) If an employee's meal period is from 12:00 p.m. to 12:30 p.m., and the employee does not start the meal period until 12:04, the employee does not have to return to work until 12:34 p.m. ***See Administrative Policy ES.C.6 Meal and Rest Periods.***

11. Employers of truck and bus drivers subject to the Federal Motor Carrier Act. In addition to the general record keeping requirements under the Minimum Wage Act and WACs, employers who employ truck and bus drivers subject to the Federal Motor Carrier Act are required to keep specific, additional records. Those records are described in WAC 296-128-011 and need not be further interpreted. Drivers who work for bus and truck employers have a specific right to obtain copies of such records.

12. Employers of minors and other employers who may be authorized to pay subminimum wage rates. Employers who may be subject to a special subminimum wage rate approved by the department are required to keep specific records with respect to the payment of subminimum wages, including the certificate granting the right to pay subminimum wage. See WAC 296-128-310. Educational institutions must keep special records regarding employment of "student workers."

13. Failure to comply with recordkeeping requirement. Compliance with record keeping requirements is the responsibility of the employer. In the event of an investigation by the department, an employer's failure to keep and produce the required records may result in the department's acceptance of personal records kept by employees to determine back wages owed.

END OF SECTION 00 35 00

SECTION 00 35 05

E-VERIFY COMPLIANCE

CITY OF CHEHALIS
Recreation Park Improvement Project

All contracts with a value greater than $1,000 and lasting 60 days shall require that the awarded contractor register with the Department of Homeland Security E-Verify program. Contractors shall have 30 calendar days after the execution of the contract to register and enter into a Memorandum of Understanding (MOU) with the Department of Homeland Security (DHS) E-Verify program. After completing the MOU the contractor shall have up to 90 calendars days to begin using E-Verify and provide a written record on the authorized employment status of their employees and those of any subcontractor(s) currently assigned to the contract.

END OF SECTION 00 35 05

SECTION 00 42 13

PROPOSAL FORM

CITY OF CHEHALIS
Recreation Park Improvement Project

Proposal to:

City of Chehalis
350 N. Market Blvd
Chehalis, WA 98532

This certifies that the undersigned has examined the location of the Recreation Park Improvement Project, City of Chehalis Project #16310 in Chehalis Washington, and that the plans, specifications and contract governing the work embraced in these improvements and the method by which payment will be made for said work is understood. The undersigned herby proposed to undertake and complete the work embraced in this improvement, or as much thereof as can be completed with the money available in accordance with the contract documents, and the following schedules of rate and prices.

Unit prices for all items, all extensions, and total amount of bid shall be shown. All entries must be typed or entered in ink.

ITEM NO.	ITEM DESCRIPTION	PLANNED QUANTITY	UNITS	LS	LS
1	Base Bid	1	LS	$	$
2	Trench Safety	1	LS	$	$
				Base Bid - Subtotal	$
				Trench Safety - Subtotal	$
				Tax	$
				Base Bid - Total	$
ADDITIVE ALTERNATIVE NO. 1					
1	Swirl Finish PCC Sidewalk	1	LS	$	$
2	Trench Safety	1	LS	$	$
				Additive Alternate No. 1 - Subtotal	$
				Tax	$
				Additive Alternate No. 1 - Total	$

ADDITIVE ALTERNATIVE NO. 2					
1	Install Artificial Turf on East Ballfield	1	LS	$	$
2	Trench Safety	1	LS	$	$
				Additive Alternate No. 2 - Subtotal	$
				Tax	$
				Additive Alternate No. 2 - Total	$
ADDITIVE ALTERNATIVE NO. 3					
1	HMA Walkway Along North and West Edge of Park	1	LS	$	$
2	Trench Safety	1	LS	$	$
				Additive Alternate No. 3 - Subtotal	$
				Tax	$
				Additive Alternate No. 3 - Total	$

PROPOSAL – SIGNATURE PAGE

The bidder is hereby advised that by signature of this proposal he/she is deemed to have acknowledged all requirements and signed all certificates contained herein.

A proposal guaranty in an amount of five percent (5%) of the total bid, based upon the approximate estimate of the quantities at the above prices and in the form as indicated below, is attached hereto:

CASH	☐	IN THE AMOUNT OF _____
CASHIER'S CHECK	☐	_____ DOLLARS
CERTIFIED CHECK	☐	($_____) PAYABLE TO THE CITY OF CHEHALIS
PROPOSAL BOND	☐	IN THE AMOUNT OF 5% OF THE BID

SIGNATURE OF AUTHORIZED OFFICIAL(S)

PROPOSAL MUST BE SIGNED

Firm Name _____

Address _____

_____

_____

State of Washington Contractor's License No _____

Unified Business Identifier (U.B.I) No. _____

Telephone Number _____

Federal ID No. _____

Note:
This proposal form is not transferable and any alteration of the firm's name entered hereon without prior permission from the City of Chehalis will be cause for considering the proposal irregular and subsequent rejection of the bid.

*Attach Power of Attorney

THE UNDERSIGNED BIDDER PROPOSES TO FURNISH ALL NECESSARY LABOR, TOOLS, MATERIALS, EQUIPMENT AND SERVICES REQUIRED FOR THE CONSTRUCTION OF THE “RECREATION PARK IMPROVEMENT PROJECT” FOR THE CITY OF CHEHALIS, IN ACCORDANCE WITH THIS BID AND WITH THE CONTRACT DOCUMENTS.

This Bid is submitted as an offer by the undersigned to enter into the Contract with the City of Chehalis, hereinafter referred to as Owner, for furnishing of materials, labor, tools, equipment and services required for construction of the "Recreation Park Improvement Project". Said improvements are described in this Bid and also by the Contract Documents, which are a part hereof with the same force and effect as though they were attached hereto. This offer is conditioned on the following declarations as to the acts, intentions and understanding of the undersigned and the agreement of the Owner to the terms and prices herein submitted.

Prices for this Bid are listed in the enclosed schedule of bid prices. The Bidder shall complete all bid items.

1. All of the Contract Documents have been examined by the undersigned and their terms and conditions are hereby accepted.
2. It is understood that the Contract Documents may be supplemented by additional Drawings or Specifications and it is agreed that such supplemental Drawings and Specifications, when not in conflict with those referred to in paragraph one (1) above, will have the same force and effect as if completed and attached hereto and that when received they will be considered a part of the Contract Documents.
3. It is understood that all the Work will be performed as a lump sum or unit price and that for said lump sum or unit price, all services, materials, labor, equipment and all work necessary to complete the Project in accordance with the Contract Documents shall be furnished for the said lump sum or unit price named. It is understood that the quantities stated in connection with the price schedule for the Contract submitted herein are approximate only and payment shall be made on the unit prices named for the actual quantities incorporated in the completed Work. If there shall be an increase in the amount of the Work covered by the lump sum price, it shall be computed on a basis of "extra work" for which an increase in payment will have been earned and if there is a decrease in the lump sum payment, it shall be made only as a result of negotiation between the undersigned and the Owner. Furthermore, it is understood that any estimate with respect to time, materials, equipment or service which may appear on the Drawings or in the Specifications is for the sole purpose of assisting the undersigned in checking his own independent calculations and at no time shall the undersigned attempt to hold the Owner, the Engineer or any other person, firm or corporation, responsible for any errors or omissions that may appear in any estimate.
4. The undersigned will furnish the Bonds required by the Contract Documents and comply with all the laws of the Federal Government, State of Washington, and the Owner which are pertinent to construction contracts of this nature even though such laws or municipal ordinances may not have been quoted or referred to in these Contract Documents.
5. The cash, certified check, or Surety Bid Bond accompanying this Bid shall be forfeited to the Owner to the extent of five percent (5%) of the amount of the Bid in case this Bid is accepted by the Owner and the undersigned shall fail or refuse to execute the Contract and furnish the bonds as required by the Contract Documents within the time limit named therein after notification that said Bid and Contract Documents, which are a part hereof have been accepted, all in accordance with the provisions of this Bid.

6. It is understood that a unit or lump sum price must be provided for each item of each schedule. The extensions in the column headed "Total Price" are made for the sole purpose of facilitating comparison of the bids. If there are any discrepancies between the unit price or lump sum price and the extensions, the unit price or lump sum price shall govern. The undersigned acknowledges that he has filled out all required forms in their entirety and accepts the sole responsibility for their accuracy and completion.
7. The undersigned agrees that the "Time of Completion" shall be as herein defined in the Contract.
8. Bidder accepts the provisions of the General Provisions as to liquidated damages in the event of failure to complete work on time.
9. The undersigned proposes to furnish all labor, materials, equipment and services for the above listed lump sum prices or unit prices as applicable. The foregoing prices shall include all labor, materials, equipment, overhead, profit, insurance and all other incidental expenses, including use and sales taxes, to cover the finished work of the several kinds called for.
10. The undersigned, as Bidder, acknowledges that Addenda Numbers _____ to _____have been received and have been examined as part of the Contract Documents.

Mandatory Information Required of Bidder

1) Washington State Contractor's License No. _____ Primary Classification _____
   Expiration Date_____ Specialty Classifications, if any _____
   Name of licensee, if different from above _____
2) Contractor's State Tax Registration No. _____

3) Certificate of registration in compliance with Chapter 18.27 RCW? **Circle one: YES NO**

4) Current Washington State Unified Business Identifier No._____

5) Bidder has industrial insurance coverage as required in Title 51 RCW? **Circle one: YES NO**

6) Employment Security Department No. _____

7) State Excise Tax Registration No. _____

8) Bidder has not been disqualified from bidding on any public works contract under RCW 30.06.010 or 39.12.065(3)?

   Circle one: YES NO

9) Bidder has not been found out of compliance by the Washington State Apprenticeship and Training Council for working apprentices out of ratio, without appropriate supervision, or outside their approved work processes as outlined in their standards of apprenticeship under chapter 49.04 RCW for the one-year period immediately preceding the date of the

bid solicitation? **Circle one: YES NO**

10) Bidder is not in the Federal Excluded Parties List System (EPLS) for Ineligible Professionals and Debarred Contractors? **Circle one: YES NO**

_____
(Firm Name of Bidder)

(Corporate Seal)

_____
(Name of Bidder) Title

_____
(Signature of Bidder)

_____
(State of Incorporation, if incorporated)

Signed this _____ day of _____, Year _____.

NOTE:

1. If the BIDDER is a co-partnership, so state, giving firm name under which business is transacted.
2. If the BIDDER is a corporation, this Bid must be executed by its duly authorized officials.

Local Agency Name
Local Agency Address

Local Agency Subcontractor List

Prepared in compliance with RCW 39.30.060 as amended

To Be Submitted with the Bid Proposal

Project Name _____

Failure to list subcontractors with whom the bidder, if awarded the contract, will directly subcontract for performance of the work of heating, ventilation and air conditioning, plumbing, as described in Chapter 18.106 RCW, and electrical, as described in Chapter 19.28 RCW or naming more than one subcontractor to perform the same work will result in your bid being non-responsive and therefore void.

Subcontractor(s) with whom the bidder will directly subcontract that are proposed to perform the work of heating, ventilation and air conditioning, plumbing, as described in Chapter 18.106 RCW, and electrical as described in Chapter 19.28 RCW **must** be listed below. The work to be performed is to be listed below the subcontractor(s) name.

To the extent the Project includes one or more categories of work referenced in RCW 39.30.060, and no subcontractor is listed below to perform such work, the bidder certifies that the work will either (i) be performed by the bidder itself, or (ii) be performed by a lower tier subcontractor who will not contract directly with the bidder.

Subcontractor Name _____
Work to be Performed _____

Subcontractor Name _____
Work to be Performed _____

Subcontractor Name _____
Work to be Performed _____

Subcontractor Name _____
Work to be Performed _____

Subcontractor Name _____
Work to be Performed _____

* Bidder's are notified that is the opinion of the enforcement agency that PVC or metal conduit, junction boxes, etc, are considered electrical equipment and therefore considered part of electrical work, even if the installation is for future use and no wiring or electrical current is connected during the project.

SR

DOT Form 271-015A EF
Revised 08/2012

SECTION 00 43 16

SURETY BID BOND FORM

CITY OF CHEHALIS
Recreation Park Improvement Project

Herewith find deposited in the form of a money order, cashier's check, cash, or surety bid bond in the amount of_____ which amount is not less than five percent (5%) of the total bid.

KNOW ALL MEN BY THESE PRESENTS:

THAT WE _____, as Principal, and _____as Surety, are held and firmly bound unto City of Chehalis as Obligee, in the penal sum of five percent (5%) of the attached bid, for the payment of which the Principal and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, by these presents. The condition of this obligation is such that if the Obligee shall make any award to the Principal for construction of the "Recreation Park Improvement Project" herein referred to as the Project, according to the terms of the proposal or bid made by the Principal therefore, and the Principal shall duly make and enter into a Contract with the Obligee in accordance with the terms of said proposal or bid and award and shall give bond for the faithful performance thereof, with Surety or Sureties approved by the Obligee; or if the Principal shall, in case of failure to do so, pay and forfeit to the Obligee the penal amount of the deposit specified in the Invitation to Bid, then this obligation shall be null and void; otherwise it shall be and remain in full force and effect and the Surety shall forthwith pay and forfeit to the Obligee, as penalty and liquidated damages, the amount of this bond.

SIGNED, SEALED, AND DATED this _____ day of _____, 20___.

_____ _____
Principal Surety

END OF SECTION 00 43 16

SECTION 00 45 19

NON-COLLUSION DECLARATION

CITY OF CHEHALIS
Recreation Park Improvement Project

NON-COLLUSION DECLARATION

I, by signing the proposal, hereby declare, under penalty of perjury under the laws of the United States that the following statements are true and correct:

1. That the undersigned person(s), firm, association or corporation has (have) not, either directly or indirectly, entered into any agreement, participation in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with the project for which this proposal is submitted.

2. **That by signing the signature page of this proposal, I am deemed to have signed and have agreed to the provisions of this declaration.**

NOTICE TO ALL BIDDERS

To report bid rigging activities:

1-800-424-9071

The U.S. Department of Transportation (USDOT) operates the above toll-free "hotline" Monday through Friday, 8:00 a.m. to 5:00 p.m., Eastern Time. Anyone with knowledge of possible bid rigging, bid collusion, or other fraudulent activities should use the "hotline" to report such activities.

The "hotline" is part of USDOT's continuing effort to identify and investigate highway construction contract fraud and abuse and is operated under the direction of the USDOT Inspector General. All information will be treated confidentially and caller anonymity will be respected.

DOT Form 272-036H
Revised
10/94

END OF SECTION 00 45 19

SECTION 00 52 13

CONTRACT AGREEMENT

CITY OF CHEHALIS
Recreation Park Improvement Project

Contract Agreement

THIS AGREEMENT is by and between: City of Chehalis (Owner)

_____ (Contractor)

Owner and Contractor, in consideration of the mutual covenants set forth herein, agree as follows:

WORK

Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:

Work will include, but is not limited to, ballfield improvements, a new drainage system to convey stormwater from the park, new concrete pathways and walkways, a new irrigation system, and a new “promenade” walkway through the center of the four ballfields.

ENGINEER

The Project has been designed by:

Skillings Connolly Inc.
5016 Lacey Blvd SE
Lacey, WA 98503
(360) 491-3399
(360) 491-3857 Fax

(Engineer), who is to act as Owner’s representative, assume all duties and responsibilities, and have the rights and authority assigned to Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

CONTRACT TIMES

Time of the Essence

A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

Days to Achieve Substantial Completion and Final Payment

A. The Work will be substantially completed within 60 working days after the date when the Contract Times commence to run, and completed and ready for final payment within 60 working days after the date of substantial completion is established.

Liquidated Damages

A. If the Work is not completed within the time specified, the Contractor agrees to pay to the Owner, as liquidated damages, the sum as outlined in Paragraph 1.29 of the General Conditions.

CONTRACT PRICE

The City of Chehalis hereby promises and agrees with the Contractor to employ, and does employ the Contractor to provide the materials and to do and cause to be done the above described work and to complete and finish the same according to the attached plans and specifications and the terms and conditions herein contained; and hereby contracts to pay for the same according to the attached specifications and the schedule of unit prices hereto attached, at the time and in the matter and upon the conditions provided for in this contract.

Bidder acknowledges that estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Bid items will be based on actual quantities, determined as provided in the Contract Documents.

Bond

The Bidder's special attention is directed to the attached bond form, which the successful bidder will be required to execute and furnish the City. **NO OTHER BOND FORMS WILL BE ACCEPTED.** The bond shall be for the full amount of the contract.

CONTRACTOR'S REPRESENTATIONS

In order to induce Owner to enter into this Agreement Contractor makes the following representations:

A. Contractor has examined and carefully studied the Contract Documents and the other related data identified in the Bidding Documents.

B. Contractor has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

C. Contractor is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, performance, and furnishing of the Work.

D. Contractor has carefully studied all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site.

E. Contractor has obtained and carefully studied (or assumes responsibility for doing so) all examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, including any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents, and safety precautions and programs incident thereto.

F. Contractor does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract Documents.

G. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.

H. Contractor has correlated the information known to Contractor, information and observations obtained from visits to the Site, reports, and drawings identified in the Contract Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Contract Documents.

I. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.

IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement in duplicate. One counterpart each has been delivered to Owner and Contractor. All portions of the Contract Documents have been signed or identified by Owner and Contractor or on their behalf.

This Agreement will be effective on _____, 2019 (which is the Effective Date of the Agreement).

OWNER:	**CONTRACTOR:**
City of Chehalis	_____
By: _____	By: _____
Title: City Manager- _____	Title: _____
Attest: _____	Attest: _____
Title: _____	Title: _____
Address: 350 N. Market Street _____	Address: _____
_____	_____
_	
	(If Contractor is a Corporation or a partnership attach evidence of authority to sign)

Contract Bond

FOR: Bond No.

_____

City of Chehalis, Washington

WE,_____ d/b/a_____
(Insert legal name of Contractor) (Insert trade name of Contractor, if any)
(hereinafter “Principal”), and_____(hereinafter "Surety"), are held and firmly bound unto **City of Chehalis, Washington** (hereinafter "City"), as Obligee, in an amount (in lawful money of the United States of America) equal to the total compensation and expense reimbursement payable to Principal for satisfactory completion of Principal’s work under Contract No. **16310, Recreation Park Improvement Project** between Principal and City of Chehalis, which total is ***initially*** _____Dollars ($_____), for the payment of which sum Principal and Surety bind themselves, their executors, administrators, legal representatives, successors and assigns, jointly and severally, firmly by these presents. Said contract (hereinafter referred to as "the Contract") is for the **Recreation Park Improvement Project** and is made a part hereof by this reference. The Contract includes the original agreement as well as all documents attached thereto or made a part thereof and amendments, change orders, and any other document modifying, adding to or deleting from said Contract any portion thereof.

This Bond is executed in accordance with the laws of the State of Washington, and is subject to all provisions thereof and the ordinances of City insofar as they are not in conflict therewith, and is entered into for the use and benefit of City, and all laborers, mechanics, subcontractors, and materialmen, and all persons who supply such person or persons, or subcontractors, with provisions or supplies for the carrying on of the work covered by Contract No. 16310 between the below-named Contractor and City for the **Recreation Park Improvement Project**, a copy of which Contract, by this reference is made a part hereof and is hereinafter referred to as "the Contract." (The Contract as defined herein includes the aforesaid agreement together with all of the Contract documents including addenda, exhibits, attachments, modifications, alterations, and additions thereto, deletions there from, amendments and any other document or provision attached to or incorporated into the Contract).

THE CONDITION OF THIS OBLIGATION is such that if Contractor shall promptly and faithfully perform the Contract, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

THE PARTIES FURTHER ACKNOWLEDGE & AGREE AS FOLLOWS:

(1) Surety hereby consents to, and waives notice of, any alteration, change order, or other modification of the Contract and any extension of time made by City, except that any single or cumulative change order amounting to more than twenty-five percent (25%) of the penal sum of this bond shall require Surety's written consent.

(2) Surety recognizes that the Contract includes provisions for additions, deletions, and modifications to the work or Contract Time and the amounts payable to Contractor. Subject to the limitations contained in paragraph (1) above, no such change or any combination thereof, shall void or impair Surety's obligation hereunder.

(3) The successful Bidder shall provide and execute Contract Bond for the full Contract amount. This Contract Bond shall:

a. Be on a Contracting Agency-furnished form;

b. Be signed by an approved Surety (or Sureties) that:

   i. Is registered with the Washington State Insurance Commissioner; and

   ii. Appears on the current Authorized Insurance list in the State of Washington published by the Office of the Insurance Commissioner,

c. Be conditioned upon the faithful performance of the Contract by the Contractor within the prescribed time;

d. Be conditioned upon the payment of taxes, increases, and penalties incurred on the project under titles 50, 51, and 82 RCW; and

e. Guarantee that the Surety shall indemnify, defend, and protect the Contracting Agency against any claim or direct or indirect loss resulting from the failure:

   i. Of the Contractor (or any of the employees, Subcontractors, or lower tier subcontractors of the Contractor) to faithfully perform the Contract; or

   ii. Of the Contractor (of the Subcontractors or lower tier subcontractors of the Contractor) to pay all laborers, mechanics, Subcontractors, lower tier subcontractors, material person, or any other person who provides supplies or provisions for carrying out the Work.

The Contracting Agency may require Sureties or Surety companies on the Contract Bond to appear and qualify themselves. Whenever the contracting Agency deems the Surety or Sureties to be inadequate, it may, upon written demand, require the Contractor to furnish additional Surety to cover any remaining Work. Until the added Surety is furnished, payments on the Contract will stop.

(4) Whenever City has declared Contractor to be in default and City has given Surety written notice of such declaration, Surety shall promptly (in no event more than thirty [30] days following receipt of such notice), specify, in written notice to City, which of the following actions Surety intends to take to remedy such default, and thereafter shall:

a. Remedy the default within fifteen (15) days after its notice to City, as stated in such notice; or

b. Assume within fifteen (15) days following its notice to City, full responsibility for the completion of the Contract in accordance with all of its provisions, as stated in such notice, and become entitled to payment of the balance of the Contract sum as provided in the Contract; or

c. Pay City upon completion of the Contract, in cash, the cost of completion together with all other reasonable costs and expenses incurred by City as a result of Contractor's default, including but not limited to those incurred by City to mitigate its losses, which may include but are not limited to attorneys' fees and the cost of efforts to complete the work prior to Surety's exercising any option available to it under this Bond; or

d. Obtain a bid or bids for completing the Contract in accordance with its terms and conditions, and upon a determination by City and Surety jointly of the lowest responsible bidder, arrange for one or more agreements between such bidder and City, and make available as work progresses (even though there is a default or a succession of defaults under such agreement(s) for completion arranged for

under this paragraph) sufficient funds to pay the cost of completion less the balance of the Contract price, but not exceeding, including other costs and damages for which Surety may be liable hereunder, the penal sum of this Bond. The term "balance of the Contract price," as used in this paragraph, shall mean the total amount payable by City to Contractor under the Contract, less the amount properly paid by City to Contractor.

(5) If City commences suit and obtains judgment against Surety for recovery hereunder, then Surety, in addition to such judgment, shall pay all costs and attorneys' fees incurred by City in enforcement of City's rights hereunder. The venue for any action arising out of or in connection with this bond shall be in City of Chehalis, Washington.

(6) No right or action shall accrue on this Bond to or for the use of any person or corporation other than City of Chehalis, except as herein provided.

(7) No rider, amendment or other document modifies this Bond except as follows, which by this reference is incorporated herein:

SURETY'S QUALIFICATIONS: Every Surety named on this bond must appear on the United States Treasury Department's most current list (Circular 570 as amended or superseded) and be authorized by the Washington State Insurance Commissioner to transact business as a surety in the State of Washington. In addition, the Surety must have a current rating of at least A-:VII in A.M. Best's Key Rating Guide.

INSTRUCTIONS FOR SIGNATURES: This bond must be signed by the president or a vice-president of a corporation; the managing general partner of a partnership; managing joint venture of a joint venture; manager of a limited liability company or, if no manager has been designated, a member of such LLC; a general partner of a limited liability partnership; or the owner(s) of a sole proprietorship. If the bond is signed by any other representative, the Principal must attach currently-dated, written proof of that signer's authority to bind the Principal, identifying and quoting the provision in the corporate articles of incorporation, bylaws, Board resolution, partnership agreement, certificate of formation, or other document authorizing delegation of signature authority to such signer, and confirmation acceptable to the County that such delegation was in effect on the date the bond was signed. **A NOTARY PUBLIC MUST ACKNOWLEDGE EACH SIGNATURE BELOW.**

FOR THE SURETY:	**FOR THE PRINCIPAL:**
By:_____ (Signature of Attorney-in-Fact)	By:_____ (Signature of authorized signer for contractor)
_____ (Type or print name of Attorney-in-Fact)	_____ (Type or print name of signer for contractor)
_____ (Type or print telephone number for Attorney-in-fact)	_____ (Type or print title of signer for contractor)

STATE OF_____)
) ss: **ACKNOWLEDGMENT FOR CONTRACTOR**
COUNTY OF_____)

On this___day of_____,___, before me a notary public in and for the State of____, duly commissioned and sworn, personally appeared_____, the person described in and who executed the foregoing bond, and acknowledged to me that _____signed and sealed said bond as the free and voluntary act and deed of the Contractor so identified in the foregoing bond for the uses and purposes therein mentioned, and on oath stated that_____is authorized to execute said bond for the Contractor named therein. WITNESS my hand and official seal hereto affixed the day and year in this certificate first above written.

_____
_____
(Signature of the Notary Public) (Print or type name of Notary Public)

Notary Public in and for the State of_____residing at _____
My commission expires_____. ***SEAL*** ➔

STATE OF_____)
) ss: **ACKNOWLEDGMENT FOR SURETY**
COUNTY OF_____)

On this___day of_____,____, before me a notary public in and for the State of____, duly commissioned and sworn, personally appeared_____, Attorney-in-Fact for the Surety that executed the foregoing bond, and acknowledged said bond to be the free and voluntary act and deed of the Surety for the uses and purposes therein mentioned, and on oath stated that_____is authorized to execute said bond on behalf of the Surety, and that the seal affixed on said bond or the annexed Power of Attorney is the corporate seal of said Surety. WITNESS my hand and official seal hereto affixed the day and year in this certificate first above written.

_____
_____
(Signature of the Notary Public) (Print or type name of Notary Public)

Notary Public in and for the State of_____residing at _____
My commission expires_____. ***SEAL*** ➔

END OF SECTION 00 52 13

SECTION 00 62 16

CERTIFICATE OF LIABILITY INSURANCE

CITY OF CHEHALIS
Recreation Park Improvement Project

ACORD **CERTIFICATE OF LIABILITY INSURANCE**

DATE (MM/DD/YYYY)

PRODUCER

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

INSURERS AFFORDING COVERAGE	NAIC #
INSURER A:	
INSURER B:	
INSURER C:	
INSURER D:	
INSURER E:	

INSURED

COVERAGES

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	ADD'L INSRD	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS	
		GENERAL LIABILITY				EACH OCCURRENCE	$
		☐ COMMERCIAL GENERAL LIABILITY				DAMAGE TO RENTED PREMISES (Ea occurrence)	$
		☐ CLAIMS MADE ☐ OCCUR				MED EXP (Any one person)	$
						PERSONAL & ADV INJURY	$
						GENERAL AGGREGATE	$
		GEN'L AGGREGATE LIMIT APPLIES PER:				PRODUCTS - COMP/OP AGG	$
		☐ POLICY ☐ PRO-JECT ☐ LOC					
		AUTOMOBILE LIABILITY				COMBINED SINGLE LIMIT (Ea accident)	$
		☐ ANY AUTO				BODILY INJURY (Per person)	$
		☐ ALL OWNED AUTOS				BODILY INJURY (Per accident)	$
		☐ SCHEDULED AUTOS				PROPERTY DAMAGE (Per accident)	$
		☐ HIRED AUTOS					
		☐ NON-OWNED AUTOS					
		GARAGE LIABILITY				AUTO ONLY - EA ACCIDENT	$
		☐ ANY AUTO				OTHER THAN AUTO ONLY: EA ACC	$
						AGG	$
		EXCESS/UMBRELLA LIABILITY				EACH OCCURRENCE	$
		☐ OCCUR ☐ CLAIMS MADE				AGGREGATE	$
							$
		☐ DEDUCTIBLE					$
		RETENTION $					$
		WORKERS COMPENSATION AND EMPLOYERS' LIABILITY				☐ WC STATU-TORY LIMITS ☐ OTH-ER	
		ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED?				E.L. EACH ACCIDENT	$
		If yes, describe under SPECIAL PROVISIONS below				E.L. DISEASE - EA EMPLOYEE	$
						E.L. DISEASE - POLICY LIMIT	$
		OTHER					

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES / EXCLUSIONS ADDED BY ENDORSEMENT / SPECIAL PROVISIONS

CERTIFICATE HOLDER

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, ~~BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES.~~

AUTHORIZED REPRESENTATIVE

ACORD 25 (2001/08)

IMPORTANT

If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

DISCLAIMER

The Certificate of Insurance on the reverse side of this form does not constitute a contract between the issuing insurer(s), authorized representative or producer, and the certificate holder, nor does it affirmatively or negatively amend, extend or alter the coverage afforded by the policies listed thereon.

ACORD 25 (2001/08)

END OF SECTION 00 62 16

SECTION 00 65 20

RELEASE AND WAIVER OF LIENS

RELEASE AND WAIVER OF MECHANICS AND MATERIALS LIENS FOR SUBCONTRACTORS AND MATERIAL AND EQUIPMENT SUPPLIERS EMPLOYED BY THE CONTRACTOR

PROJECT TITLE: Recreation Park Improvement Project

OWNER NAME: City of Chehalis

STATE OF _____ COUNTY OF _____

_____ is _____
(Name) (Title)

of _____
(Company Name)

and is familiar with the facts herein stated;

That said person or Company (hereinafter referred to as subcontractor/supplier) performed work, labor, services and/or furnished material for the work as defined in the Contractor Documents, as defined in the agreement between the said Owner and _____ (hereinafter referred to as contractor) for the project.
(Name of General Contractor)

That said subcontractor/supplier, has been paid $_____ by the said Contractor under the terms and conditions of its contract and/or purchase orders including labor, material and equipment by it through _____, 20____, the receipt and sufficiency of which is hereby acknowledged, the undersigned does hereby waive all liens and claims which if may have against the above project/property through the aforesaid date, and further, the undersigned represents that no other person or party has any right to a lien on the above project/property on account of any work performed or materials furnished to said subcontractor/supplier, or person, under its contract and/or purchase orders.

Dated this _____ day of _____, 20____.

_____
(Name of Subcontractor/Supplier)

By: _____

Title: _____

Subscribed and sworn to before me, the undersigned Notary Public within and for the State of

_____ and the County of _____ this _____ day of

_____ 20____, in the City of _____.

My Commission Expires:

_____ _____
Notary Public with and for said County and State

END OF SECTION 00 65 20

SECTION 00 72 13

GENERAL CONDITIONS

CITY OF CHEHALIS
Recreation Park Improvement Project

PART 1 - GENERAL

1.1 SUMMARY

A. All Work included in the Project shall be done for the price set forth in the Bid of the successful Bidder (the "Contract Sum"), in accordance with the Project Manual. "Engineer", as used herein, refers to the City's Consulting Engineer. "Construction Manager" as used herein refers to the City's representative who administers the construction program for the City.

1.2 AWARD OF CONTRACT

A. A Contract will not be awarded until the City is satisfied that the successful Bidder is familiar with this type of Work and has the necessary capital and tools to satisfactorily complete the Project. The City specifically reserves the right to accept the Bid of the lowest responsive, responsible Bidder, to reject any and all Bids, to reissue the Invitation for Bids, to revise or cancel the Project, or to waive any irregularities in the Bids received.

1.3 CONTRACT DOCUMENTS

A. This Project Manual consists of the following Contract Documents and shall be a part of the Contract entered into by the City and the successful Bidder (the "Contractor"): Invitation for Bids, Instruction to Bidders, Bid Form, Contract, Payment and Performance Bonds, Prevailing Wage Rate, Contract Plans, and Specifications. In the event there is any conflict, ambiguity, or inconsistency between any of the foregoing Contract Documents, the following order of documents governs so that the former prevails over the latter:

1. Change Orders
2. Addenda,
3. Contract
4. Specifications
5. Contract Plans
6. Standard Plans
7. Proposal Form

8. Instructions to Bidders

9. Payment and Performance Bonds.

B. In the event there exists a conflict, inconsistency, or ambiguity within the terms or conditions of one of the Contract Document categories set forth above that is not resolved under subsection A, the more stringent or more costly requirements or greater quantity or quality shall be deemed to have been intended and to have been included in the original Contract Price.

1.4 FAILURE TO EXECUTE CONTRACT

A. Failure to execute the Contract in compliance with this Project Manual shall result in forfeiture of the Bidder's Deposit. If this should occur, the City may then award the Contract to the next lowest responsive, responsible Bidder, reject any or all Bids, reissue the Invitation for Bids, or revise or cancel the Project.

1.5 ALTERATION OF MODIFICATION

A. No alteration or modification of the Contract Documents will be binding unless set forth in writing signed by the City.

1.6 ADDITIONS OF DELETIONS

A. The City reserves the right to add or delete Work from the Contract, subject to appropriate adjustments to the Contract Sum.

1.7 NOTICE TO PROCEED

A. A Notice to Proceed will be given after the Contract has been executed by the City and the Contractor and, where applicable, by any State or Federal agencies responsible for funding any portion of the Project. The time allowed for Physical Completion of the Work shall begin as of the date specified in the Notice to Proceed, or if no date is specified, ten (10) calendar days after the date of issuance of the Notice to Proceed, or the date work commences, whichever is earlier. The Contractor shall not commence the Work until the Notice to Proceed has been given by the City.

B. The Notice to Proceed date will be mutually agreed between the Contractor and the City. Once work begins work shall be continuous with one winter shutdown allowed.

C. The intent of this specification is to allow the Contractor to schedule work on this Project to start in late summer 2019 and complete in early spring of 2020. At the time of bid, the Notice to Proceed date has not been determined.

1.8 CONSTRUCTION SCHEDULE AND TIME LIMIT

A. Within ten (10) calendar days after issuance of the Notice to Proceed, the Contractor shall submit a preliminary schedule for the orderly performance and completion of all parts of the Work in accordance with the Contract and within the Contract Time ("Construction Schedule"). The Construction Schedule shall be based upon a critical path method analysis of construction activities and sequence of operations, in the form of a precedence diagram and activity listing, shall be time scaled, and shall include the Notice to Proceed date, the date(s) of Substantial and Physical Completion, and the date(s) of Final Completion in accordance with the Contract Documents, along with clearly defined milestone completion dates. The Construction Schedule will be provided both as a document (network diagram) and electronically.

B. The network diagram shall show in detail and in order the sequence of all significant activities, their descriptions necessary to complete all parts of the Work, and shall show the following information for each activity:

1. Description,
2. Duration,
3. Craft,
4. Equipment,
5. Start and finish dates,
6. Total float time and free float time, and
7. Dates that work must be performed and completed by other contractors and subcontractors to support the Work.

C. The electronic schedule shall be unmodified from the Contractor's version and show all input parameters including, but not limited to, logic ties, constraints, and assumptions.

D. The Contractor shall perform the Work at all reasonable times so as to complete the Work in accordance with the Construction Schedule, and shall discontinue the Work only if delayed by inclement weather that could not have been reasonably anticipated at the time the Contractor submitted its Bid. Except for delays due to unanticipated inclement weather, the City shall be entitled to all float in the Construction Schedule and the Contractor shall not be entitled to any adjustment in the Contract Time, the Construction Schedule or the Contract Sum, or to any additional payment of any sort by reason of the loss or use of any float time, including time between the Contractor's anticipated completion date and the end of the Contract Time, whether or not the float time is described as such on the Construction Schedule.

E. Should the Contractor fail to meet any scheduled date as shown on the current Construction Schedule or if the sequence of the Work varies significantly from that shown on the Construction Schedule, the Contractor shall, at the Contractor's own expense, submit an updated Construction Schedule within ten (10) days after notice from the City. Should the Contractor fail to provide an updated Construction Schedule in the time required herein, the City may, in its sole discretion, withhold payment from Contractor until an updated Construction Schedule in compliance with Subsection 1.8-B is received. If the Contractor's progress indicates that the Work will not be

Physically Completed within the Contract Time, upon notice from the City, the Contractor shall, at the Contractor's own expense, increase its work force and working hours to bring the actual completion dates of the activities into conformance with the Construction Schedule and Physical Completion within the Contract Time.

F. NOT USED

G. During the period commencing with the issuance of Notice to Proceed and ending with the date of Physical Completion of the Work, the Contractor shall attend and participate in and ensure applicable Subcontractors of any tier and Suppliers attend and participate in:

1. A Pre-contract Meeting;
2. A Pre-construction Meeting;
3. Regular weekly Project status meetings as scheduled by the City to review progress of the Work, to discuss the Contractor's progress reports, and to obtain necessary City approvals, and generally to keep the City informed and involved in the progress of the Project; and
4. Regular on-site meetings as scheduled by the City to review progress of the Work and other pertinent matters.

H. In the event the Contractor fails to proceed with the Work for more than ten (10) working days, the Contractor shall be deemed to have abandoned the Project, and the City may, in its discretion, elect to terminate the Contract and thereafter proceed to complete the Project through its own forces or through an independent third party. In such event, the Contractor will be responsible for all expenses reasonably incurred by the City in completing the Work. The Contractor will also be responsible for all legal, engineering or other costs caused by the Contractor's abandonment of the Project, or the failure or refusal of the Contractor to complete the Work within the Contract Time.

1.9 DELAYS AND EXTENSION OF TIME

A. The Contractor shall notify the City in writing of any event which could delay performance of any part of the Work, of the anticipated effect of the delay on the Construction Schedule, of the action being taken to correct the delay situation, and of any proposed changes in the Construction Schedule or the Contract Time. The Contractor shall not recover damages, a monetary adjustment or an increase in the Contract Sum from the City for any disruption or delay where

1. The actions or inactions of the City were not the actual, substantial cause of the disruption or delay, or
2. The Contractor could have reasonably avoided the disruption or delay by the exercise of due diligence.

B. If a disruption or delay is not actually and substantially caused by the City, in lieu of damages, a monetary adjustment or an increase in the Contract Sum, the Contractor may be granted equitable changes in the Construction Schedule and/or extensions of the Contract Time under the following circumstances:

1. If a disruption or delay is caused by a suit or other legal action against the City, the Contractor will receive an equivalent extension of the Contract Time, unless the period of such delay exceeds ninety (90) calendar days. When such period is exceeded, the City will, upon request of the Contractor, in writing, either negotiate a termination of the Contract or grant a further extension of the Contract Time, whichever may at the time be in the best interests of the City.

2. If the disruption or delay is due to inclement weather which could not have been anticipated by the Contractor or reasonably avoided by the exercise of due diligence, subject to the approval of the City, the Contractor will receive an extension of the Contract Time equivalent to the total time lost, whether it be a single continuous period or the accumulated total of several periods.

3. Should a disruption or delay be caused by other unforeseen circumstances beyond the reasonable control of the Contractor which could not be avoided by the exercise of due diligence, or should performance of work under a Change Order make the Work more complex or difficult than originally set forth in the Contract Documents, and such work, in the Contractor's opinion, requires more time to execute than allowed by the Contract, the Contractor shall notify the City in writing prior to the performance of such work, setting forth in detail its estimate of the additional time required for such work. If such estimate is approved by the City, the Contractor will receive an equitable extension of the Contract Time.

C. In the event the Contractor (including any subcontractors or suppliers of any tier) is held to be entitled to damages from the City for disruption or delay, it is agreed that the total damages to the Contractor (including damages to any subcontractor or supplier of any tier) shall be limited to the lesser of

1. The time and materials costs associated with the impact of such disruption or delay, along with markups on the Contractor's own work and on that of its subcontractors and suppliers at the rates specified in the Contract, or

2. The daily liquidated damages rate specified in paragraph 1.29 of the General Conditions. No damages will be allowed and the Contractor waives any such damages or costs incurred for any time prior to ten (10) calendar days before receipt of a written notice of disruption or delay.

D. The Contractor will not in any event be entitled to damages, a monetary adjustment or an increase in the Contract Sum arising out of any actual or alleged loss of efficiency; morale, fatigue, attitude or labor rhythm; constructive acceleration; home office overhead; expectant underrun; trade stacking; reassignment of workers; concurrent operations; dilution of supervision; learning curve; beneficial or joint occupancy; logistics; ripple; season change; extended overhead; profit upon damages for delay; impact damages; or similar damages or other form of economic loss.

1.10 NOT USED

1.11 SAFETY MEASURES

A. All Work shall be performed in a safe manner, and the Contractor and all subcontractors shall observe the Federal Occupational Safety and Health Act, the Washington Industrial Safety and Health Act (WISHA), and all rules and regulations promulgated thereunder, all rules, regulations and orders of the Washington State Department of Labor and Industries and any other governmental authority, and all other applicable safety standards. In case of conflict between any such requirements, the more stringent regulation or requirement shall apply. There is no acceptable deviation from these safety requirements, regardless of practice in the construction industry. Any violation of OSHA, WISHA, or other safety requirements applicable to the work may, at the sole discretion of the City, be considered a material breach of this Contract. The Contractor shall be solely and completely responsible for conditions of the job site, including the safety of all persons and property during performance of the Work. This requirement shall apply continuously and not be limited to normal working hours.

B. Review by the Engineer of the Contractor's plan for the sequence, schedule and performance of the Work is not intended to and will not include any review or approval of the adequacy of the Contractor's safety measures in, on, or near the job site. The Engineer does not purport to be a safety expert, will not be so engaged in that capacity with respect to the Project, and has neither the authority nor the responsibility to enforce construction safety laws, rules, regulations or procedures, or to order a stoppage of the Work for claimed violations thereof.

C. The Contractor shall at all times exercise every precaution for the prevention of accidents and the protection of persons (including, without limitation, employees of the City, the Contractor and all subcontractors) and property (including, without limitation, property owned by the City or any third party). All exposed moving parts of equipment capable of inflicting injury by accidental contact shall be protected with sturdy removable guards in accordance with applicable safety regulations.

1.12 CHANGES IN THE WORK

A. The City may, at any time, without notice to the sureties, and without invalidating the Contract, by order designated or indicated to be a change order or directive, make any change, including modifications to, additions to or deletions from the Work within the general scope of the Contract ("Change"), including, but not limited to, changes:

1. In the Contract Plans and Specifications;
2. In the quantities or performance of the Work;
3. In any City-furnished facilities, equipment, materials, services or site; or
4. Directing acceleration or suspension of the performance of the Work.

B. If the Contractor intends to assert a Claim for any Change in the Work the Contractor shall, within ten (10) calendar days after receipt of a notice of a Change, submit to the City a written statement setting forth the general nature and monetary and other impact of such Change, unless this period is extended, in writing, by the City. All Claims must be made in strict accordance with the applicable provisions of the Contract Documents, including Paragraphs 1.30 - 1.32 hereto, or they will be waived.

C. The Contract Documents may be amended or supplemented by a Change Order, a Work Change Directive or a Field Order.

1. Change Orders:

a. If an amendment or supplement to the Contract Documents includes either a change in the Contract Price or a change in the Contract Time, such amendment or supplement must set forth in a Change Order.

b. A Change Order also may be used to establish amendments and supplements of the Contract Price or Contract Times.

c. The Owner and Contractor may without the recommendation of the Engineer amend those terms and conditions of the Contract Documents that do not involve the performance or acceptability of the Work, the design, as set forth in the Drawings, Specifications or otherwise or other engineering or technical matters. Such an amendment shall be set forth in a Change Order.

2. Work Change Directives:

a. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times.

3. Field Orders:

a. Minor changes in the Work may be authorized by the Engineer if the changes do not involve an adjustment to the Contract Price or Time and are compatible with the design concept of the completed Project.

b. Such minor changes will be accomplished by a Field Order and shall be binding on the Owner and on the Contractor, who shall perform the Work involved promptly.

c. If the Contractor believes that the Field Order justifies an adjustment in the Contract Price or Time, or both, then prior to performing the Work at issue, the Contractor shall submit a Change Order as specified herein.

D. Change orders and directives will be prepared and executed in triplicate; two (2) copies shall be retained by the City, and one (1) copy shall be delivered to the Contractor.

1.13 INCREASED OR DECREASED QUANTITIES

A. Payment to the Contractor will be made only for the actual quantities of work performed and accepted in conformance with the Contract. When the accepted quantity of Work performed under a unit item varies from the original Proposal quantity, payment will be at the unit Contract price for all Work unless the total accepted quantity of any Contract item, adjusted to exclude added or deleted amounts included in change orders accepted by both parties, increases or decreases by more than twenty-five percent (25%) from the original Proposal quantity. In that case, payment for Contract Work may be adjusted as described herein.

B. The adjusted final quantity shall be determined by starting with the final accepted quantity measured after all Work under an item has been completed. From this amount, subtract any quantities included in additive change orders accepted by both parties. Then, to the resulting amount, add any quantities included in deductive change orders accepted by both parties. The final result of this calculation shall become the adjusted final quantity and the basis for comparison to the original Proposal quantity.

1. Increased Quantities – Either party to the Contract will be entitled to renegotiate the price for that portion of the adjusted final quantity in excess of 1.25 times the original Proposal quantity. The price for excessive increased quantities will be determined by agreement of the parties, or, where the parties cannot agree, the price will be determined by the Engineer based upon the actual costs to perform the Work, including reasonable markup for overhead and profit.

2. Decreased Quantities- Either party to the Contract will be entitled to an equitable adjustment if the adjusted final quantity of Work performed is less than seventy-five percent (75%) of the original Bid quantity. The equitable adjustment shall be based upon and limited to three factors:

   a. Any increase or decrease in unit costs of labor, materials or equipment, utilized for Work actually performed, resulting solely from the reduction in quantity;

   b. Changes in production rates or methods of performing Work actually done to the extent that the nature of the Work actually performed differs from the nature of the Work included in the original plan; and

   c. An adjustment for the anticipated contribution to unavoidable fixed cost and overhead from the units representing the difference between the adjusted final quantity and seventy-five percent (75%) of the original Plan quantity.

C. The following limitations shall apply to renegotiated prices for increases and or equitable adjustments for decreases:

1. The equipment rates shall be actual cost but shall not exceed the rates set forth in the AGC/WSDOT Equipment Rental Agreement that is in effect at the time the Work is performed.

2. No payment will be made for extended or unabsorbed home office overhead and field overhead expenses to the extent that there is an unbalanced allocation of such expenses among the Contract Bid items.

3. No payment for consequential damages or loss of anticipated profits will be allowed because of any variance in quantities from those originally shown in the Proposal form, Contract Provisions, and Contract Plans.

D. The total payment (including the adjustment amount and unit prices for Work performed) for any item that experiences an equitable adjustment for decreased quantity shall not exceed seventy-five percent (75%) of the amount originally Bid for the item. If the adjusted final quantity of any item does not vary from the quantity shown in the Proposal by more than twenty-five percent (25%), then the Contractor and the Contracting Agency agree that all Work under that item will be performed at the original Contract unit price.

E. When ordered by the Engineer, the Contractor shall proceed with the Work pending determination of the cost or time adjustment for the variation in quantities.

F. The Contractor and the Contracting Agency agree that there will be no cost adjustment decreases if the Contracting Agency has entered the amount for the item in the Proposal from only to provide a common proposal for Bidders.

1.14 GUARANTEE

A. The Contractor hereby guarantees that all Work (including, without limitation, all labor, materials and equipment) furnished by the Contractor under the Contract will meet fully all requirements for quality of workmanship, materials, strength and any and all other requirements set forth in the Contract Documents (including, without limitation, the Contract Plans and Specifications).

1.15 PAYMENT AND PERFORMANCE BONDS

A. The Contractor shall furnish both a Payment Bond and a Performance Bond, each in the full amount of the Contract Sum, which shall guarantee the faithful performance of the Contract and the payment of all labor, mechanics, subcontractors, material and taxes. The Contractor shall maintain the Payment and Performance Bonds in full force and effect until Completion of the Project and acceptance by the City, and thereafter for a minimum of two (2) years with respect to the Performance Bond and for such period as the law allows for the filing or enforcement of liens with respect to the Payment Bond. The Payment and Performance Bonds shall be furnished by a corporate surety company or companies authorized to do business in the State of Washington and acceptable to the City in its discretion, in substantially the forms included in the Project Manual. Notwithstanding the foregoing, on contracts of $25,000 or less, at the option of the Contractor, the City may, in lieu of Payment and Performance Bonds, retain fifty percent (50%) of the Contract Sum for

1. A period of thirty (30) days after the City's final acceptance of the Project, or
2. Until receipt of all necessary releases from the Washington Department of Revenue and Department of Labor and Industries, and settlement of all liens filed against the Project, whichever is later.

1.16 LICENSES, PERMITS, AND TAXES

A. The Contractor shall procure, at Contractor's expense, all permits and licenses, pay all charges, fees and taxes, and give all notices necessary and incidental to the due and lawful prosecution of the Work.

1.17 HOLD HARMLESS

A. The Contractor agrees to indemnify, defend and hold harmless the City from and against any and all claims, damages, losses, liabilities and expenses, including reasonable attorney's and expert fees and costs, arising out of or relating to Contractor's performance of this Contract, including, without limitation, any and all claims, damages and liabilities:

1. Under workers' or workmen's compensation, disability benefit and other similar employee benefit acts which are applicable to the Work;
2. Because of bodily injury, occupational sickness or disease, or death of any employee of the Contractor;
3. Because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;
4. Sustained by a person as a result of a claim directly or indirectly related to employment of such person by the Contractor, or by another person;
5. Because of injury to or destruction of tangible property, including loss of use resulting therefrom;
6. Because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle and/or mobile equipment; or
7. Involving contractual liability insurance applicable to the Contractor's obligations hereunder. Contractor waives any right of contribution against the City.

B. For the purposes of RCW 4.24.115, the Contractor and City agree that the term "damages" applies only to the finding in a judicial proceeding and is exclusive of third party claims for damages preliminary thereto.

C. It is mutually negotiated and agreed that in any claim against the City or any of its agents or employees, by the Contractor, any subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, the Contractor's indemnification obligation hereunder shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any subcontractor under Workman's Compensation Acts, disability benefits acts or other employee's benefit acts. The City and the Contractor agree that all third party claims for damages against the City of which the Contractor's insurance carrier does not accept defense may be tendered by the City to the Contractor, who shall accept and undertake to defend or settle the same. Notwithstanding the foregoing, the City retains the right to approve claims investigations and legal counsel assigned to defend such claims. All investigation and legal work product regarding such claims shall be performed under a fiduciary relationship to the City. In the event that the City agrees or a court finds that any claim for bodily injury to persons or damage to property arises from the sole negligence of the City, or its agents or employees, this indemnification and duty to defend shall be void. In the event that the City and the Contractor agree or a court finds that any claim for bodily injury to persons or damage to property is caused by or resulting from the concurrent negligence of the Contractor, or its agents, employees, or subcontractors, and the City, or its agents or employees, the Contractor shall be responsible for all damages payable to the claimant, and, in addition thereto, the Contractor shall defend and indemnify the City for all damages paid or payable by the City, in an amount not to exceed the percentage of total fault attributable to the Contractor, its

agents, employees, or subcontractors. For example, where the Contractor (or its agents, employees, or subcontractors) is twenty-five percent (25%) negligent, the Contractor shall not be required to indemnify the City for any amount in excess of twenty-five percent (25%) of the claimant's total damages, and shall only be responsible for twenty-five percent (25%) of the costs to defend the claim. **Solely and expressly for the purpose of its duties to indemnify, defend, and hold harmless the City, the Contractor specifically waives any immunity it may have under the State Industrial Insurance Law, Title 51 RCW.**

1.18 WORKER'S BENEFITS

A. The Contractor shall make all payments required for unemployment compensation under Title 50 RCW and for industrial insurance and medical aid required under Title 51 RCW. If any such payment is not made when due, the City may retain such amount from any monies due the Contractor and may pay the same into the appropriate fund.

B. The Contractor shall include in the various items in the Bid all costs for payment of unemployment compensation and for providing all required insurance coverages. The Contractor will not be entitled to any additional payment for:

1. Failure to include such costs, or
2. Determinations made by the U.S. Department of Labor or the Washington State Department of Labor and Industries regarding such insurance coverages.

1.19 CONTRACTOR'S LIABILITY AND PROPERTY DAMAGE INSURANCE

A. The Contractor shall not commence the Work until the Contractor has furnished the City with an Acord 25 Insurance Certificate as evidence of the required policies, and upon request by the City, with evidence (in duplicate copy) of all policies of insurance required hereunder, and such insurance has been approved by the City; nor shall the Contractor allow any subcontractor to commence Work on its subcontract until such subcontractor has complied with such insurance requirements. Approval of any insurance by the City shall not relieve or decrease the liability of the Contractor for any damages arising from or related to the Contractor's performance of the Work. All insurance required shall be with insurers with a financial rating from A.M. Best Company of A(-) VII or better.

B. The Contractor shall procure and maintain, during the term of the Contract, Commercial General Liability and Commercial Automobile Liability Insurance, as set forth below. The insurance policies shall include the City, and others if required by the Contract Documents, as Additional Insureds for both ongoing and completed operations. Products and Completed Operations coverage shall be maintained for not less than three (3) years following completion of the project. There shall also be included contractual liability coverage sufficiently broad to insure the provisions of Section 1.17 above.

C. Contractor insurance policies shall include Chehalis as Additional Insured for both ongoing and completed operations, using Insurance Services Office forms CG 2010

(07-04) and CG2037(07-04) or the equivalent, on a Primary Basis and others if required by the Contract documents and such insurance shall not include a cross-claims or similar exclusion.

D. The Contractor shall provide the Contracting Agency and all Additional Insureds with written notice of any policy cancelation, within two (2) business days of their receipt of such notice.

E. A Certificate of Insurance including a copy of the Additional Insured Endorsement on Forms CG 2010 (07-04) and CG 2037(07-04) shall be filed with Chehalis after award, but prior to execution of the contract, for a primary policy of Commercial General Liability insurance and Commercial Automobile Liability insurance meeting the requirements herein.

F. The Commercial General Liability Insurance shall be written using Insurance Services Office form CG0001(12-07) or the equivalent with limits of liability in no case less than $1,000,000 each occurrence and $2,000,000 in the aggregate. Coverage shall include:

1. Premises & Operations;
2. Liability of the insured arising out of operations of subcontractors;
3. Products Liability, including Completed Operations Coverage; Products & Completed Operations coverage shall be maintained for not less than three (3) years following completion of the project;
4. Contractual Liability;
5. Broad Form Property Damage;
6. Employees as Additional Insured;
7. Explosion, Collapse & Underground Hazard;
8. Independent Contractors;
9. Personal Injury;
10. Stop Gap or Employer's Liability; and
11. Cross Liability Clause or Separation of Insureds Clause.

G. The Commercial Automobile Liability Insurance shall be written on Insurance Services Office form CA0001(03-10) or the equivalent with limits of liability but shall in no case be for limits less than $1,000,000 each accident. Coverage shall include:

1. All owned automobiles, if any;
2. Non–owned automobiles;
3. Hired automobiles.

H. The insurance coverages listed above shall protect the Contractor and the City from claims for damages for bodily injury, including death resulting therefrom, as well as claims for property damage, which may arise from operations under the Contract, whether such operations be by the Contractor or by any subcontractor or by anyone directly employed by any of them, it being understood that it is the Contractor's

obligation to enforce the requirements of this section in respect to any subcontractor employed for this Project.

I. Any Umbrella Liability Insurance or Excess Liability Insurance shall be written to provide limits in excess of the underlying Commercial General Liability, Commercial Automobile Liability and Employer's Liability (Stop Gap) with limits of not less than $2,000,000 each occurrence and $2,000,000 aggregate; HOWEVER, $5,000,000 Umbrella Liability insurance is required for contracts exceeding $200,000 and/or with a stated construction time for completion that is greater than one hundred twenty (120) days, and/ or for contracts that require roadway and/or trenching activity.

J. Commercial General Liability Bodily Injury Liability Insurance shall be written on an occurrence basis for bodily injury, sickness or disease, including death resulting therefrom.

K. Commercial General Liability Property Damage Liability Insurance shall be written on an occurrence basis for damage to or destruction of property, including loss of use thereof, and shall not exclude:

1. Injury to or destruction of any property arising out of blasting or explosion;
2. Injury to or destruction of any property arising out of the collapse or structural injury to any building or structure due to:
    a. Excavation, including borrowing, filling or backfilling in connection therewith, or tunneling, pile driving, cofferdam Work or caisson Work, or
    b. Moving, shoring, underpinning, raising or demolition of any building or structure or removal or rebuilding of any structural support thereof.
    c. Injury to or destruction of wires, conduits, pipes, mains, sewers or other similar property or any apparatus in connection therewith, below the surface of the ground, if such injury or destruction is caused by and occurs during the use of mechanical equipment for the purpose of excavating or drilling, or
    d. Injury to or destruction of property at any time resulting therefrom.

L. Nothing contained in these insurance requirements is to be construed as limiting the Contractor's liability for damages resulting from its operations under the Contract.

M. Prior to commencement of the Work, the Contractor shall furnish the City with certified copies of all insurance policy or policies, including all endorsements, required hereunder.

N. The City and Contractor waive all rights against each other and any of their subcontractors, sub-subcontractors, agents and employees for damages caused by fire or other perils to the extent covered by property insurance agreement or other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance.

O. The Contractor shall require its first tier subcontractors and subcontractor of any tier whose subcontract is for an amount greater than $50,000 to provide the scope and amount of insurance coverage and evidence of such coverage, including any

requirements to list and/or name the City or Contractor as additional insured, in accordance with the requirements of the Contract.

1.20 CONTRACTOR'S BUILDER'S RISK INSURANCE

A. Prior to commencement of the Work, when required by the special provisions, the Contractor shall submit written evidence that the Contractor has obtained and will maintain until the Project is accepted by the City as complete, Course of Construction Completed Value Insurance Coverage (including Earthquake, Flood, Landslide, Collapse and Damage resulting from Faulty Workmanship, Material or Design) upon the entire Work which is the subject of the Contract, and including completed Work and Work in progress. The insurance policies shall include the City, and others if required by the Contract Documents, as Additional Insureds. An Acord 24 Property Insurance Certificate shall be provided to the City as evidence of this coverage.

B. Such insurance may have a deductible clause, which shall not exceed $5,000, except that the deductible on Earthquake, Flood and Landslide may be in accordance with underwriters' requirements. Builders' Risk "All-Risk" Insurance shall include provisions for Flood and Earthquake, on a 100% completed value basis on the insurable portion of the Project. The Contractor shall be responsible for all deductible amounts.

1.21 COMPENSATION AND EMPLOYER'S LIABILITY INSURANCE

A. The Contractor shall maintain Worker's Compensation Insurance as required by State law for all of employees to be engaged in the Work. Should any Work be subcontracted, the Contractor shall require the subcontractors similarly to provide Worker's Compensation Insurance for all of the subcontractors' employees to be engaged in such Work. The Contractor's Labor and Industries account number shall be provided in the Bid in the space provided.

B. In the event any class of employees engaged in Work on the Project is not covered under the Worker's Compensation Insurance as required by the State law, the Contractor shall provide, and shall cause each subcontractor to provide, Employer's Liability Insurance with a private insurance company with limits of at least $1,000,000 each accident, $1,000,000 each employee and shall furnish the City with satisfactory evidence of the same prior to commencement of the Work.

1.22 CONTRACTOR RESPONSIBLE FOR WORK

A. The Contractor warrants to the City that:

1. The materials and equipment furnished under the Contract will be of good quality and new, unless otherwise required or permitted by the Contract Documents;
2. The Work will conform to the requirements of the Contract Documents; and
3. The Work will be free from defects in materials and workmanship for a period of not less than two (2) years after the Work has been completed and accepted

by the City in writing, or such longer period as specified in the Contract Documents. Any Work not conforming to these requirements, including substitutions or deviations not properly approved by the City, will be considered defective and will be repaired or replaced at the Contractor's sole expense. Deviations, alterations, variations, additions, or omissions from the Contract requirements without prior written consent shall preclude Contractor from bringing any Claim on the basis of an alleged defect or error in the Contract Documents.

1.23 POSSESSION

A. The City reserves the right to use and occupy any portion of the improvements which have been completed sufficiently to permit use and occupancy; provided that such use and occupancy shall not be construed as an acceptance of all or any portion of the Work. The City shall not be deemed to have waived any claims it may have against the Contractor by reason of such use and occupancy.

1.24 RISK OF LOSS

A. The Contractor shall assume all risk of loss of materials, equipment or other supplies through theft, fire, act of God, or any other cause until written acceptance of the Project by the City, at which time risk of loss shall transfer to the City. No partial payment or advance by the City shall change the foregoing allocation of risk of loss.

1.25 APPLICABLE LAW AND FORUM

A. Except as specifically provided herein, the Contract shall be governed by and construed according to the laws of the State of Washington. Any suit arising here from shall be brought in Lewis County (Washington) Superior Court, which shall have sole and exclusive jurisdiction and venue.

1.26 WAGE RATES

A. The Contractor and all subcontractors are required to abide by the State's Prevailing Wage Act, Chapter 39.12 RCW and Chapter 49.28 RCW. A copy of the current prevailing wage rates is available from the State of Washington, Department of Labor and Industries, Industrial Relations Division, General Administration Building, Olympia, WA 98501, ATTN: Industrial Statistician, as outlined Section 00 35 00 and shall be incorporated in and become a part of the Contract. No worker shall be paid less than the specified hourly rate. The Contractor and all subcontractors must submit a "Statement of Intent to Pay Prevailing Wages" approved by the Department of Labor and Industries to the City prior to any payments being made. All fees are the responsibility of the Contractor. The Contractor shall post a "Statement of Intent to Pay Prevailing Wages" and a copy of the current prevailing wage rates on the Project site.

B. It is the Contractor's responsibility to see that all subcontractors comply with the above. Progress payments will not be released until all subcontractors have complied.

C. Following Physical Completion of the Project, the Contractor and each subcontractor shall submit an "Affidavit of Wages Paid." The Completion date of the Contract will not be established until all affidavits have been received.

1.27 PAYMENT

A. Within seven (7) calendar days of the progress estimate cutoff date, the Contractor shall submit to the Engineer three (3) copies of an itemized application for payment, supported to the extent required by the Engineer by receipts or other vouchers showing payment for materials and labors, payments to subcontractors, and other such evidence of the Contractor's right to payment. The Contractor shall be entitled to monthly progress payments corresponding to the stage of work.

B. Progress estimates will be prepared by the Engineer not later than thirty (30) calendar days after commencing work, and every thirty (30) calendar days thereafter, if so entitled, for the duration of construction. These shall be based upon an approximate estimate of quantities or work completed and considered acceptable, as extended by the unit prices established in the contract or as provided by the schedule of lump sum payments.

C. The City shall also deduct or withhold from each monthly progress payment for any charges against the Contractor authorized by the Contract Documents.

D. Quantities used for progress estimates shall be considered only as approximate and provisional and shall be subject to recalculations, adjustment and correction by the Engineer, in its sole discretion, in subsequent progress estimates and in final estimates. Any disputes by Contractor of any amount or estimate in a progress estimate must be made in strict accordance with the applicable provisions of the Contract Documents, including Paragraphs 1.30 through 1.32 hereto, or they will be waived. Inclusion of any quantities in progress estimates, or failure to disapprove the work at the time of progress estimates, shall not be construed as acceptance of corresponding work or materials.

1.28 RETAINAGE

A. Five percent (5%) of the Contract Sum shall be retained by the City, in accordance with Chapter 60.28 RCW, for the protection and payment of the claims of any person arising under the Contract and the State of Washington with respect to taxes imposed pursuant to Title 82 RCW which may be due from the Contractor ("Retainage"). The Contractor acknowledges that the City shall release the Retainage only in accordance with Chapter 60.28 RCW, which requires, among other things, that the City receive from the Washington State Department of Revenue a certificate that all taxes, increases and penalties due from the Contractor and all taxes due and to become due with respect to the Contract have been paid in full or that they are, in

the opinion of the Department of Revenue, readily collectible without recourse to the State's lien on the Retainage.

B. The Contractor shall also comply, and shall cause all of the Contractor's subcontractors to comply, with Chapter 60.28 RCW with respect to Retainage of amounts earned by any subcontractor or sub-subcontractor or supplier contracted with to provide labor, materials or equipment for the Project. Progress payments will not be released until the Contractor and all subcontractors have complied.

C. If the Contractor wishes to set up an escrow account for the Retainage, an escrow agreement must be submitted to the City on a City provided form for review at least thirty (30) days prior to the first deposit.

D. If the Contractor wishes to submit a bond for all or any portion of the Retainage, the form of bond and surety must be acceptable to the City in its reasonable discretion and must be submitted to the City for review at least thirty (30) days prior to the intended effective date.

1.29 LIQUIDATED DAMAGES

A. Time is of the essence of the Contract. The Contracting Agency has adopted the following formula to calculate liquidated damages for failure to complete the physical Work of a Contract on time.

Accordingly, the Contractor agrees:

1. To pay (according to the following formula) liquidated damages for each calendar day beyond the number of working days established for Physical Completion, and
2. To authorize the Engineer to deduct these liquidated damages from any money due or coming due to the Contractor.

Liquidated Damages Formula

LD = 0.15C/T

Where:

LD = liquidated damages per calendar day (rounded to the nearest dollar)

C = Original Contract Amount

T = Original time for Physical Completion

When the Contract Work has progressed to the extent that the Contracting Agency has full use and benefit of the facilities, both from the operational and safety standpoint, all the initial plantings are completed and only minor incidental Work, replacement of temporary substitute facilities, plant establishment periods, or correction or repair remains to physically complete the total Contract, the Engineer may determine the Contract Work is substantially complete. The Engineer will notify the Contractor in writing of the Substantial Completion Date. For overruns in Contract time occurring after the date so established, the formula for liquidated damages shown above will not apply. For overruns in Contract time

occurring after the Substantial Completion Date, liquidated damages shall be assessed on the basis of direct engineering and related costs assignable to the project until the actual Physical Completion Date of all the Contract Work. The Contractor shall complete the remaining work as promptly as possible. Upon request by the Engineer, the Contractor shall furnish a written schedule for completing the physical Work of the Contract.

Liquidated damages will not be assessed for any days for which an extension of time is granted. No deduction or payment of liquidated damages will, in any degree, release the Contractor from further obligations and liabilities to complete the entire Contract.

1.30 CLAIMS

A. Definition:

1. A Claim is a demand or assertion by one of the parties seeking, as a matter of right, adjustment of Contract terms, payment of money, extension of time or other relief with respect to the terms of the Contract. The term “Claim” also includes other disputes and matters in question between the City and Contractor arising out of or relating to the Contract or the Work. Claims must be made in writing and include the information and substantiation required by the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. A notice of a potential or future Claim does not constitute a Claim.

B. Any Claim of the Contractor against the City for damages, additional payment for any reason, or extension of time, whether under the Contract or otherwise, must be made pursuant to and in strict accordance with the applicable provisions of the Contract. No act, omission, or knowledge, actual or constructive, of the City or the Engineer shall in any way be deemed to be a waiver of the requirement for timely written notice and a timely written Claim unless the City provides the Contractor with an explicit, unequivocal written waiver.

C. All Claims shall be addressed to:

The City of Chehalis Parks Department
1321 Market Blvd.
Chehalis, WA 98532

A copy should be submitted to the Construction Manager.

1.31 PROCEDURES AND PROTESTS BY THE CONTRACTOR

A. Waiver of Claims:

1. The execution of a Change Order shall constitute a waiver of Claims by the Contractor arising out of the Work to be performed or deleted pursuant to the Change Order and related to all prior Work on the Project, except as specifically described in the Change Order. General reservations of rights will be deemed waived and void.

B. Claim for Additional Costs:

1. All Claims for additional cost must be made according to Paragraph 1.32 Dispute Resolution, or they will be waived. In the event that work is shown on the Drawings but not contained in Specifications, it will be assumed the work as shown shall be provided at no change in the Contact Sum or Time. The Contractor shall not be entitled to an increase in the Contract Sum or Time arising out of an error or conflict where the Contractor failed adequately to review the Contract Documents and timely to report the error or conflict to the Engineer. In no event shall a Total Cost Method or a modified Total Cost Method be used by the Contractor to calculate any adjustments to the Contract Price.

C. Claims for Additional Time:

1. A timely, written Claim, as provided herein, shall be required for any Claim for an increase in the Contract Time. The Contractor's Claim shall include an estimate of cost and probable effect of delay on progress of the Work. In the case of a continuing delay only one Claim is necessary.

2. If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time and could not have been reasonably anticipated, and that weather conditions had an adverse effect on the scheduled construction.

3. In no event shall the Contractor be allowed to bring a Claim based upon a cumulative impact.

D. Injury or Damage to Person or Property:

1. If the Contractor suffers injury or damage to person or property because of an act or omission of the City, of any of the City's employees or agents, or of others for whose acts the City is legally liable, written notice of such injury or damage, whether or not insured, shall be given to the City within a reasonable time not exceeding twenty-one (21) days after first observance. The notice shall provide sufficient detail to enable the other party to investigate the matter. This Subparagraph does not apply to Claims, damages for additional costs, acceleration, or delay.

E. Timely Notice:

1. Without timely written notice and protest as required by the Contract Documents, the Contractor shall conclusively be deemed to have accepted any order, direction, change, instruction, interpretation, determination or adjustment by the City. The Contractor's disagreement shall in no way relieve the Contractor of its obligation to comply promptly with any written notice issued by the Director or his/her designee.

2. Contractor acknowledges that the City is entitled to timely notice as set forth in the Contract Documents so as to enable the City to exercise its rightful control over the Project budget and schedule. Failure to properly provide such information shall constitute a complete waiver of the Contractor's right to additional time or cost, or any other equitable adjustment or requested relief.

F. Requirements:

1. If in disagreement with anything required in a Change Order, another written order, or oral order (including directions, instructions, interpretations, and determinations) by the City and where timely written notice has been made, Contractor shall follow the protest requirements set forth in the Contract Documents and immediately initiate and maintain detailed, accurate daily records of the effect on the Work, additional labor, material or equipment required, all costs and/or delays. Upon request, the Contractor shall submit to the City, in such form as the Engineer may prescribe, an itemized accounting together with supporting data and copies of the daily records being maintained.

2. If the act or event giving rise to the protest is continuing in nature, or the impacts are continuing, the Contractor shall update its submittal not less often than every thirty (30) days.

3. In order to facilitate checking of such quotations, all proposals, except those so minor that their propriety can be seen by inspection, shall be accompanied by complete itemization of costs, including labor, materials, and subcontract costs. Labor and materials shall be itemized in the manner described in Subparagraph 1.31-I below. When major cost items arise from Subcontractors or Suppliers of any tier, these items shall also be itemized. Approval may not be given without such itemization. Failure to provide data within twenty-one (21) days of the Engineer's request shall constitute waiver of any Claim for changes in the Contract Time or Contract Sum.

4. The City shall have the right to audit the books and records of the Contractor and of any Subcontractor or Supplier of any tier seeking a change in the Contract Sum. The total cost of any change, including a Claim, shall be limited to the reasonable value, as determined by the Engineer (subject to appeal through the dispute resolution procedure of the items in Subparagraph 1.31-I below). Unless otherwise agreed in writing by the City, the cost shall not exceed the lower of the prevailing cost for the work in the locality of the Project or the cost of the work in the current edition of R.S. Means Company, Inc., Building Construction Cost Data.

G. Amounts Not in Dispute:

1. Pending final determination of cost to the City, amounts not in dispute may be included in Applications for Payment. The amount of credit to be allowed by the Contractor to the City for a deletion or change which results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Engineer. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

   a. If the City and Contractor do not agree with the adjustment in Contract Time or the method for determining it, the adjustment or the method shall be referred to the Engineer for determination. Any adjustment in the Contract Time arising from a Change or Claim shall be limited to the change in the actual critical path of the Contractor's most recently updated and accepted Construction Schedule directly caused thereby. The adjustment shall be determined by the Engineer on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, in strict

accordance with this Paragraph and other applicable provisions of the Contract Documents.

b. When the City and Contractor agree with the determination made by the Engineer concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and shall be recorded by preparation and execution of an appropriate Change Order.

H. Minor Changes in the Work.

1. When provided for in the Contract Documents, the Engineer will have the authority to order Minor Changes in the Work not involving extension of the Contract Time, and not inconsistent with the intent of the Contract Documents. Such changes shall be effected by written order and shall be binding on the City and Contractor. The Contractor shall carry out such written orders promptly. Any protest by the Contractor of any such written order must be made in strict accordance with the applicable provisions of the Contract Documents, including Paragraphs 1.31 through 1.33 hereto, or they will be waived.

I. Pricing Components.

1. The value of any Claim for an increase or decrease in the Contract Sum shall be limited to the following components and Contractor shall contemporaneously segregate and separately record at the time incurred all costs associated with any Claim. Any work performed for which the Contractor intends to seek an adjustment in Contract Price, Contract Time, and/or other alleged damages shall be recorded on the same day the work is performed and kept separate so as to distinguish it from Contract Work:

a. Direct Labor Costs: These are labor costs determined by either the estimated or actual number of additional craft hours and the hourly cost necessary to perform the change in the Work or the unit labor costs applied to the material quantities and extended, provided the unit labor costs are developed from the above craft hour cost, whichever is applicable, according to industry practice.

The hourly cost shall be based upon the following:

1) Basic Wages: Current Washington Department of Labor & Industries prevailing hourly wage for laborers, apprentices, journeyman, and foreman performing and/or directly supervising the changed Work on the site. The premium portion of overtime wages is not included unless pre-approved by the City.

2) Fringe Benefits: Fringe benefits paid by the Contractor as established by the Washington Department of Labor and Industries or contracted to labor trust funds as itemized fringe benefits, whichever is applicable.

3) Worker's Insurance: Direct contributions to the State of Washington as industrial insurance; medical aid; and supplemental pension by class and rates established by the Washington Department of Labor and Industries.

4) Federal Insurance: Direct contributions required by the Federal Insurance Compensation Act (FICA); Federal Unemployment Tax Act (FUTA); and State Unemployment Compensation Act (SUCA).

b. Direct Material Costs: This is an itemization of the quantity and cost of additional materials necessary to perform the change in the Work. These costs shall be by the unit cost applied to the quantity and extended. The unit cost shall be based upon the net cost after all discounts or rebates, freight costs, express charges, or special delivery costs, when applicable. No lump sum costs will be allowed except when approved in advance by the Engineer.

c. Construction Equipment Usage Costs: This in an itemization of the actual length of time construction equipment appropriate for the Work will be used solely on the change in the Work at the site times the applicable rental cost as established by the lower of the prevailing rate published in The Rental Rate Blue Book by Data Quest, San Jose, California, or the actual rate paid as evidenced by rental receipts. Actual, reasonable mobilization costs are permitted if the equipment is brought to the Site solely for the change in the Work and if approved in writing in advance by the Engineer.

If more than one rate is applicable, the lowest rate will be utilized. The rates in effect at the time of the performance of the Change work are the maximum rates allowable for equipment of modern design and in good working condition and include full compensation for furnishing all fuel, oil, lubricants, repairs, maintenance, and insurance. Equipment not of modern design and/or not in good working condition will have lower rates. Hourly, weekly, and/or monthly rates, as appropriate, will be applied to yield the lowest total cost. After eight (8) hours of equipment use in a twenty-four (24) hour period, and after forty (40) hours of equipment use in a week, the equipment usage cost shall be fifty percent (50%) of the rate established above.

The rate for equipment necessarily standing by for future use on the Work shall be fifty percent (50%) of the rate established above. The total standby hours per day will be a maximum of eight (8) hours less the operating hours paid as a result of the change in the Work and less the hours that the item of equipment was or could have been used on other changed or non-changed Work and less any hours that the equipment was in a "non-operational" condition, as determined and approved by the City. The total standby hours per week will be a maximum of forty (40) hours less the operating hours paid for the change in Work and less the hours that the item of equipment was or could have been used on other changed or non-changed Work and less any hours that the equipment was in a "non-operational" condition, as determined and approved by the City.

If equipment is required for which a rental rate is not established by The Rental Rate Blue Book an agreed rental rate shall be established for that equipment, which rate and use must be approved by the Engineer prior to performing the work. Failure by the Contractor to obtain written approval of any rental rate not established by The Rental Rate Blue Book prior to performing the work shall be a waiver of all such costs.

d. Cost of Change in Insurance or Bond Premium - This is defined as:

1) Contractor's liability insurance: The costs (expressed as a percentage) of any changes in the contractor's liability insurance arising directly from the changed Work; and

2) Public Works bond: The cost (expressed as a percentage) of the additional premium for the contractor's bond arising directly from the changed Work.

Upon request, the Contractor shall provide the City with supporting documentation from its insurer or surety.

e. Subcontractor Costs:

1) These are payments the Contractor makes to Subcontractors for changed Work performed by Subcontractors. The Subcontractors' cost of Work shall be determined in the same manner as prescribed in this Subparagraph 1.31-I.

f. Fee:

1) This is the allowance for all combined overhead, profit and other costs, including all office, home office and site overhead (including contractor's project manager, project engineer, and superintendent's time), and includes delay and impact costs of any kind, added to the total cost to the City of any Change Order, Construction Change Directive, Claim or any other claim of any kind on this Project. It shall be limited in all cases to the following schedule:

a) The Contractor shall receive ten percent (10%) of the cost of any materials supplied or work performed by the Contractor's own forces.

b) The Contractor shall receive eight percent (8%) of the amount owed directly to a Subcontractor or its Supplier for materials supplied or work performed by that Subcontractor or its Supplier.

c) Each Subcontractor (including lower tier subcontractors involved) shall receive ten percent (10%) of the costs of any materials supplied or work performed by its own forces.

d) Each Subcontractor of any tier shall receive eight percent (8%) of the amount it owes for materials supplied or work performed by its suppliers or subcontractors of any lower tier.

e) The cost to which this Fee is to be applied shall be determined in accordance with Subparagraph 1.31-I (a) - (d).

If a change in the Work involves both additive and deductive items, the appropriate Fee allowed will be added to the net difference of the items. If the net difference is negative, no Fee will be added to the negative figure as a further deduction.

The costs and allowances for overhead and profit as calculated in accordance with the paragraphs and the Contract Documents shall constitute the Contractor's full and sole entitlement to compensation or equitable adjustment for any changed work, Change Order, Construction Change Directive, Claim or any other claim of any kind on this Project, relating thereto, or resulting therefrom. No additional compensation shall be allowed for items including, but not limited to, direct, indirect or impact damages, costs of delay, acceleration inefficiency, and home office overhead.

1.32 DISPUTE RESOLUTION

A. All Claims, direct or indirect, arising out of, or relating to, the Work or the Contract Documents or the breach thereof shall be decided exclusively by the following dispute resolution procedure. Claims that have been waived under the terms of the Contract Documents are barred, including those waived due to Contractor's failure to timely comply with this Paragraph 1.32 or failure to comply with the timing and notice procedures set forth in the Contract Documents. As a condition precedent to submitting a Claim, the Contractor must comply with the requirements of Paragraph 3.31 above, and all other timing and notice requirements set forth in the Contract Documents.

B. The Contractor shall submit in writing to the Engineer all Claims within ten (10) calendar days of the event giving rise to them, signed by the Contractor under penalty of perjury. The submission shall include a clear description of the Claim, the proposed change in the Contract Sum and/or Time of the Claim, or other relief sought by the Contractor, in addition to providing sufficient data and information supporting the Claim to enable the City to conduct its own investigation of the event, including all information required in Paragraph 1.31 above. The Claim shall be deemed to include all changes, direct and indirect, in cost and in time to which the Contractor (and Subcontractors and Suppliers of any tier) is or may be entitled. If the act or event is continuing in nature, or the impacts are continuing, the Claim shall so state and the Contractor shall update its claim not less often than every thirty (30) days.

C. The claims of a Subcontractor or Supplier of any tier may be brought only through the Contractor and only after the Contractor notifies the City in writing and signed by the Contractor under penalty of perjury that the Contractor has reviewed the Claim and believe it to meritorious.

1. Level I: Within seven (7) days of receipt of the written notice and all required information and data, the senior site representative of the Contractor and the Engineer shall meet, confer, and attempt to resolve the claim. The senior site representative of the Contractor shall have the authority to resolve and settle the claim. Either the Contractor or the City will be entitled to give the other written notice to delay the start of a properly requested Level I meeting for up to fourteen (14) days in order to review the supporting data or to assemble more accurate or complete data to support the Claim.

2. Level II. If the Claim is not resolved within seven (7) days of the close of the Level I meeting, the Contractor may require that an officer of the Contractor (who did not attend the Level I meeting), the Construction Manager, and the Engineer meet, confer, and attempt to resolve the Claim within fourteen (14) days thereafter. Other City personnel may also attend the Level II meeting. Prior to being obligated to attend the Level II meeting, the City or its representatives shall have the right to audit and copy the Claim-related books and records of the Contractor and of any Subcontractor or Supplier of any tier making a Claim.

3. The terms of the resolution of any Claims concluded in Level I or Level II meetings shall be memorialized in writing and signed by each party.

D. Mediation:

1. If the Claim is not resolved in the dispute resolution procedure, neither the Contractor nor any Subcontractor or Supplier of any tier may bring a Claim against the City in litigation unless the Claim is first subject to nonbinding mediation before a single mediator under the Voluntary Construction Mediation Rules of the American Arbitration Association. Contractor waives all Claims by failing to provide written notice to the Engineer of the Contractor's intent to mediate within twenty-one (21) days of the Level II meeting. This requirement cannot be waived except by an explicit written waiver signed by the City and the Contractor. An officer of the Contractor and the Director, both having full authority to settle the Claim, must attend the mediation session. To the extent there are other parties in interest, such as the Engineer, Subcontractors, or Suppliers of any tier, their representatives with full authority to settle the Claim, shall also attend the mediation session. Unless the City and the Contractor mutually agree in writing otherwise and only in the event Contractor provides timely notice of intent to mediate, all unresolved Claims on the Project shall be considered at a single mediation session which shall occur after Physical Completion, but prior to Final Acceptance by the City. The Contractor is responsible for initiating the mediation procedure.

E. Litigation.

1. The Contractor may not initiate litigation on any Claim unless each such Claim was properly and timely raised and considered in the Procedures of Subparagraphs 1.32-A through 1.32-C above. All unresolved Claims of the Contractor shall be waived and released unless the Contractor has complied with the time limits of the Contract Documents, and litigation is served and filed within the earlier of

   a. One hundred eighty (180) days after the Date of Physical Completion designated in writing by the City (provided that a mediation session has occurred) or

   b. Sixty (60) days after Final Acceptance. This requirement cannot be waived except by an explicit written waiver signed by the City.

F. The Contractor agrees that the City may join the Contractor as a party to any litigation/arbitration involving the alleged fault of the Contractor.

G. The Contractor shall diligently carry on the Work and maintain the Contractor's Construction Schedule during any dispute resolution proceedings, unless otherwise agreed by it and the City in writing.

1.33 NONDISCRIMINATION AND AFFIRMATIVE ACTION

A. Unless the Contractor is exempt by Federal Executive Order 11246, as amended by Executive Order 11375, the Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, age or national origin. The Contractor will take affirmative action to ensure that applicants are employed and that employees are treated during employment without regard to their race, color, religion, sex, age or national origin. Such action shall include, but not be limited to, the following: employment; upgrading; demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of

compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the requirements of these nondiscrimination provisions.

B. The Contractor further agrees to comply with all applicable non-discrimination laws and affirmative action programs, including, without limitation, Sections 503 and 504 of the Vocational Rehabilitation Act of 1973 and Sections 2012 and 2014 of the Vietnam Era Veterans Readjustment Act of 1984, and acknowledges that, should the Contractor be in violation of this paragraph or any applicable laws or affirmative action programs, the Contractor shall be barred forthwith from receiving award of any purchase order from the City unless a satisfactory showing is made that such noncompliance or discriminatory practices have terminated and that a recurrence of such acts is unlikely.

1.34 MINORITY AND WOMEN BUSINESS ENTERPRISE

A. The Contractor agrees that the Contractor shall actively solicit the employment of minority group members. The Contractor further agrees that the Contractor shall actively solicit bids for the subcontracting of goods or services from qualified minority businesses. The Contractor shall furnish evidence of the Contractor's compliance with these requirements of minority employment and solicitation. The Contractor further agrees to consider the grant of subcontracts to said minority bidders on the basis of substantially equal proposals in the light most favorable to said minority businesses. The Contractor shall be required to submit evidence of compliance with this paragraph as part of the Contract.

1.35 NOTICES

A. Any notice or communication under the Contract will be effective only if in writing and delivered in person, by overnight courier service, by facsimile transmission, by electronic mail transmission, or mailed by registered or certified mail return receipt requested postage prepaid to the City at the address set forth in the Invitation for Bids or to the Contractor at the address set forth in the Bid, or to any other address the addressee may have notified the sender beforehand referring to the Contract. All notices and communications will be deemed given, made and received:

1. Upon delivery, if personally delivered;
2. When sent by facsimile or electronic email transmission if confirmation is received;
3. One (1) business day after the deposit, if delivered by a nationally recognized courier service offering guaranteed overnight delivery; or
4. Three (3) business days after deposit in the United States mail.

1.36 PATENT, PATENT ROYALTIES, AND PROCESS FEES

A. The Contractor shall furnish the City a license or licenses for the use of any equipment process or processes in connection with this Project that is the subject of any patent. The Contractor shall include in the unit prices bid any patent royalties or license fees for equipment installed or construction methods used. The Contractor shall provide at the request of the City a patent attorney's opinion letter acceptable to the City, advising that any process or equipment used by Contractor does not infringe on any patent.

1.37 LAWS AND REGULATIONS

A. All applicable State laws and municipal ordinances, and the rules and regulations of all authorities having jurisdiction over the construction of the project, shall apply to the Contract throughout and they will be deemed to be included in the Contract the same as if written therein in full. This Contract is also subject to regulations for projects receiving Federal funding.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 00 72 13

SECTION 01 11 00

SUMMARY OF WORK

PART 1 - GENERAL

1.1 SUMMARY

A. This Section contains a summary of the work in this Contract.

1. The work to be performed under this Contract consists of furnishing all tools, equipment, materials, supplies, and manufactured articles; furnishing all labor, transportation, and services, including fuel, power, water, and essential communications; and performing all work or other operations required for the fulfillment of the Contract, in strict accordance with the Contract Documents. Provide all work, materials, and services not expressly indicated in the Contract Documents which may be necessary for the complete and proper construction of the work and administration of the contract.

1.2 WORK COVERED BY CONTRACT

A. The work includes, but is not limited to the furnishing of the labor, materials, and equipment for construction of the following:

1. The project includes the ballfield improvements, grading, drainage, irrigation and walkway improvements. The work consists of the following:
    a. A new drainage system with stubouts for future improvements
    b. Improvements to the four (4) existing ballfields
        i. Irrigation
        ii. Minor grading
        iii. New underdrain system
        iv. Subgrade establishment
        v. Natural turf establishment
        vi. Infilled Synthetic turf
    c. New concrete pathways and walkways
    d. Promenade walkway through the center of the ballfield complex
    e. Minor site grading
    f. Construction Staking
2. The above description is not intended to be complete. The work to be completed is provided for in the Contract Documents.
3. Federal, state and local laws, statutes and regulations are not individually referenced. This provision incorporates by reference the latest version of statutes, laws and regulations. The Contractor shall bring to the attention of the Engineer any conflicts between the requirements of the specifications and requirements of the statutes and regulations. The more stringent between the statutes and regulations and the specifications shall apply unless specifically directed otherwise by the Engineer. In no case shall it be interpreted that the contract overrides statues and regulations of governing authorities.

1.3 WORK SEQUENCE

A. The proposed Work sequence shall be submitted to the Engineer in the Construction Schedule.

1.4 UNDERGROUND UTILITIES

A. In general, the approximate locations of City's and other utility providers' existing major piping/utilities, whether aboveground or underground, are indicated on the Contract Plans. This information has been obtained from utility records and field surveys. The City does not guarantee the accuracy or completeness of this information, and it is to be understood that other aboveground or underground facilities not shown on the Contract Plans may be encountered during the performance of the work.

B. Existing aboveground utilities, whether shown on the Contract Plans or not, shall be maintained, relocated, rerouted, removed and restored, at least to original condition, as necessary to perform the work.

C. Any underground utility which is damaged or destroyed by the Contractor shall be restored to original condition or better.

1.5 TRAFFIC CONVENIENCE AND SAFETY

A. The Contractor shall conduct the work so as to insure the least possible obstruction to traffic and normal commercial pursuits. The convenience of the general public and residents along the work, and the protection of persons and property is of prime importance and shall be provided for in an adequate and satisfactory manner.

B. The Contractor will note the requirements for maintaining traffic access in Standard Specification Sections 1-07.23 and 1-10 in addition to all other requirements in these contract documents. The Contractor shall keep existing roads and streets adjacent to or within the limits of the project open to and maintained in a good and safe condition for traffic at all times unless otherwise allowed or directed by Owner. At least 10 days prior to the start of construction, the Contractor shall submit to the Owner a proposed plan for maintaining traffic flows. The Owner reserves the right to restrict the Contractor to various streets and times of construction during the entire project.

C. The Contractor shall furnish all flagging and shall provide, erect and maintain all temporary traffic control devices required during construction. The Contractor shall delineate all obstructions and excavations with appropriate barricades. The Contractor shall provide a Traffic control Drawing to the Engineer for approval prior to beginning work. The Contractor may utilize WSDOT Standard "K" drawings which best meets the needs for Traffic Control as applicable. Flagmen, barricades, signs and traffic control shall conform to the Standards established in the latest edition of the "Manual on Uniform Traffic Control Devices", published by the U.S. Department of Transportation.

Vehicle delays of more than 15 minutes is not allowed. Contractor shall post informational signs indicating general working periods and times when delays are anticipated.

All cost and expenses in connection with the handling and protection of traffic as herein specified shall be considered as incidental to and included in the applicable bid items, unless there are specific bid items for traffic control work.

1.6 WATER

A. Water at hydrants will be made available to the Contractor for work under this Contract at no charge. Water necessary for, pipe testing and flushing will be made available from existing water mains by the Owner at no charge to the Contractor, provided the water is conserved and not used unnecessarily or wastefully.

1.7 CONSTRUCTION STAKING

A. Construction stakes shall be provided by the Contractor for this project. An electronic file of the project survey data will be provided to the Contractor. Construction stakes establishing horizontal and vertical alignment will be provided by the Contractor. The Engineer will be available to answer all questions regarding alignment, grade of the work and the information contained in the electronic survey file.

B. The Contractor shall set such supplemental stakes and references as required for the accurate construction of the project. No work shall start until such time as the Engineer has had the opportunity to inspect such stakes.

C. Prior to any construction, the Contractor shall carefully examine the survey stakes, benchmarks, etc., for any noticeable errors. In the event the Contractor finds a discrepancy, he shall immediately notify the Engineer in writing. Once construction begins, the Contractor assumes full responsibility for the accuracy of all construction stakes.

D. The Contractor's supplemental construction stakes shall be sufficient in number and spacing to provide for good line and grade on all features of work.

E. All cost and expenses in connection with construction staking as herein specified shall be included in the bid item Construction Staking.

PART 2 - PRODUCTS (NOT USED)

2.1 EXECUTION (NOT USED)

END SECTION 01 11 00

SECTION 01 22 00

MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Defines how work items are measured and paid for on Lump Sum Contracts.
2. The Contractor shall receive payment for work after it is installed. Payment for material on hand can only be paid for if allowed by the Agreement, the General and/or Special Conditions.
3. Partial payment may be requested for items partially installed when agreed to by the Owner.

B. Cumulative Alternates Bidding

The Bid Proposal for this contract requires the Bidder to bid cumulative Alternates as part of the bid. As such the Bidder is required to submit a base bid for each of the Alternate(s).

Bid Proposal

The Bid Proposal includes the following:

1. Base Bid

The Base Bid shall include constructing all items included in the Proposal except those items contained in the Alternate(s).

2. Alternate(s)

i. Alternate No. 1
Based on constructing Swirl Finish PCC sidewalk instead of broom finish concrete.
The Bid items for Alternate No. 1 are listed in the Bid Proposal.

ii. Alternate No. 2
Based on constructing Artificial turf on the two east ballfield infields in lieu of work shown on East Field Base Bid sheets.
The Bid items for Alternate No. 2 are listed in the Bid Proposal.

iii. Alternate No.3
Based on constructing Asphalt walkway along north and west edge of park.
The Bid items for Alternate No. 3 are listed in the Bid Proposal.

1.2 LUMP SUM ITEMS

A. Progress payments for Lump Sum items in the Bid Schedule will be based on the breakdown prepared by the Contractor and approved by the Engineer and Owner before acceptance of the Application for Payment for the Lump Sum item.

B. Lump Sum payment will be for the entire item as specified and as indicated in the Contract Documents. Payment for all bid items indicated as Lump Sums shall include the cost of all labor, materials, equipment, and incidentals necessary to furnish, install, clean, test, and place each bid item into operation; including permitting, general conditions, overhead and profit.

1.3 BIDDING PROCEDURES

To be considered responsive the Bidder shall submit a lump sum price on the Base Bid and all Alternate(s).

The successful Bidder will be the Bidder submitting the lowest responsible Bid for the highest order preference that is within the amount of available funds for the project. Available construction funds will be announced immediately prior to the opening of Bids. The following are Listed in order from highest to lowest Preference:

1. Preference 1: Lowest total Base Bid.

2. Preference 2: Lowest Base Bid plus Alternate No. 2

3. Preference 3: Lowest total for Base Bid plus Alternate No. 2 plus Alternate No. 3

4. Preference 4: Lowest total for Base Bid plus Alternate No. 2 plus Alternate No. 3 plus Alternate No.1,

The Contracting Agency may, at their discretion, award a Contract for the Base Bid, without any additional Alternates, in the event that all bids exceed the available funds.

END SECTION 01 22 00

SECTION 01 25 13

PRODUCT SUBSTITUTIONS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. The procedure for requesting the approval or substitution of a product that is equivalent to a product which is specified by descriptive or performance criteria or defined by reference to one or more of the following:
    a. Name of manufacturer.
    b. Name of vendor.
    c. Trade name.
    d. Catalog number.

B. Request for Substitution - General:

1. Base all bids on materials, equipment, and procedures specified.
2. Certain types of equipment and kinds of material are described in specifications by means of references to names of manufacturers and vendors, trade names, or catalog numbers.
    a. When this method of specifying is used, it is not intended to exclude from consideration other products bearing other manufacturer's or vendor's names, trade names, or catalog numbers, provided said products are "or-equals," as determined by Engineer.
3. Other types of equipment and kinds of material may be acceptable substitutions under the following conditions
    a. Or-equals are unavailable due to strike, discontinued production of products meeting specified requirements, or other factors beyond control of Contractor; or,
    b. Contractor proposes a cost and/or time reduction incentive to the City.

1.2 QUALITY ASSURANCE

A. In making request for substitution or in using an approved product, Contractor represents Contractor:

1. Has investigated proposed product, and has determined that it is equal or superior in all respects to that specified, and that it will perform the function for which it is intended.
2. Will provide same guarantee for substitute item as for product specified.
3. Will coordinate installation of accepted substitution into Work, to include building modifications if necessary, making such changes as may be required for Work to be complete in all respects.
4. Waives all claims for additional costs related to substitution which subsequently arise.

5. Will provide a credit, in an amount to be approved by owner or owner's representative, to the contract for the cost and/or time reduction associated with said substitution.

1.3 DEFINITIONS

A. Product: Manufactured material or equipment.

1.4 PROCEDURE FOR REQUESTING SUBSTITUTION

A. Substitution shall be considered only:
   1. After Award of Contract.
   2. Under the conditions stated herein.

B. Written request through Contractor only.

1.5 SUBMITTAL PROCEDURES:

A. Follow the submittal procedures per Specification Section 01 33 00.
   1. Describe the substitution and justifications on the transmittal form. Include in the transmittal letter, either directly or as a clearly marked attachment, the items listed in Paragraph B below.

B. Transmittal Contents:
   1. Product identification:
      a. Manufacturer's name.
      b. Telephone number and representative contact name.
      c. Specification Section or Drawing reference of originally specified product, including discrete name or tag number assigned to original product in the Contract Documents.
   2. Manufacturer's literature clearly marked to show compliance of proposed product with Contract Documents.
   3. Itemized comparison of original and proposed product addressing product characteristics including but not necessarily limited to:
      a. Size.
      b. Composition or materials of construction.
      c. Weight.
      d. Electrical or mechanical requirements.
   4. Product experience:
      a. Location of past projects utilizing product.
      b. Name and telephone number of persons associated with referenced projects knowledgeable concerning proposed product.
      c. Available field data and reports associated with proposed product.
   5. Data relating to changes in construction schedule.
   6. Data relating to changes in cost.
   7. Samples:

a. At request of Engineer.

b. Full size if requested by Engineer.

c. Held until substantial completion. To be released only upon contractor's written request to be submitted to Engineer prior to substantial completion.

d. Engineer not responsible for loss or damage to samples.

1.6 APPROVAL OR REJECTION

A. Written approval or rejection of substitution given by the Engineer.

B. Engineer reserves the right to require proposed product to comply with color and pattern of specified product if necessary to secure design intent.

C. In the event the substitution is approved, the resulting cost and/or time reduction will be documented by Change Order in accordance with the Section 00 72 13, General Conditions (See Paragraph 1.12, Changes in the Work).

D. Substitution will be rejected if:

1. Submittal is not through the Contractor with his stamp of approval.
2. Request is not made in accordance with this Specification Section.
3. In the Engineer's opinion, acceptance will require substantial revision of the original design.
4. In the Engineer's opinion, substitution will not perform adequately the function consistent with the design intent.

E. Contractor shall reimburse City for the cost of Engineer's evaluation whether or not substitution is approved.

PART 2 - PRODUCTS – (NOT USED)

PART 3 - EXECUTION – (NOT USED)

END SECTION 01 25 13

SECTION 01 26 13

REQUESTS FOR INFORMATION

REQUEST FOR INFORMATION FORM

Contractor's RFI No. _____ Engineer's RFI No. _____

Contract:

_____

Owner:_____ Owner's Contract No. _____

Engineer: Skillings Connolly, Inc._____ Engineer's Contract No. _____

THIS REQUEST BY:_____ cc to: _____
(Name of the Contractor's Representative)

Reference: DIVISION _____ SECTION _____ PLAN SHEET NO. _____

_____

_____

_____

_____

_____

ATTACHMENTS _____

INTERPRETATION BY: _____ Date:_____, 2018
(Name of the Engineer's Representative)

_____

_____

_____

_____

_____

ATTACHMENTS _____

Once the Engineer provides a response to a Contractor's RFI, that determination shall be final and binding on the Contractor unless the Contractor delivers to the City written notice of a change in the work within a certain period of time of receipt of that determination.

cc to: _____

_____

END OF SECTION 01 26 13

SECTION 01 30 00

ADMINISTRATIVE REQUIREMENTS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Coordination and project conditions.

B. Preconstruction meeting.

1.2 COORDINATION AND PROJECT CONDITIONS

A. Verify that existing conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.

B. Verify that existing substrate is capable of structural support or attachment of the work being applied or attached.

C. Examine and verify specific conditions described in the project plans and individual specification sections.

1.3 PRECONSTRUCTION MEETING

A. Engineer will schedule meeting after Notice of Award.

B. Attendance Required: City's Representative, Engineer and Contractor.

C. Agenda:

1. Introduction of Personnel
    a. City's Representative
    b. Contractor
    c. Engineer
2. Project Overview
3. Communication
4. Scheduling
5. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures
6. Legal loads on public streets and roads
7. Testing (see Section 01 40 00 Part 1.5)
8. Safety
9. Emergency Contact List
10. Materials delivery/staging area

D. Engineer shall record minutes and distribute copies within two days after meeting to participants and those affected by decisions made.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END SECTION 01 30 00

SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Mechanics and administration of the submittal process for:
    a. Action submittals.
    b. Informational submittals.

B. Definitions

1. Action Submittals: Information that requires Engineer's or Owner’s responsive action. Includes mock-ups and shop drawings.
2. Informational Submittals: Information that does not require Engineer's approval.
    a. Examples include but are not limited to:
        i. Installed equipment and systems performance test reports.
        ii. Manufacturer’s Installation Certification Letters.
        iii. Warranties.
        iv. Construction photographs.

1.2 ACCEPTANCE: Non-rejection of submittals shall in no way relieve the Contractor from safety and performance requirements specified in the contract documents.

1.3 PROCEDURES

A. Electronic copies of digital data files of the Contract Plans will not be provided by Engineer for Contractor's use.

B. Processing Time:

1. Initial Review: 15 days.
2. Resubmittal Review: 15 days.

C. Transmittal Form: Form acceptable to the City and Engineer.

D. Submittal Procedures:

1. Electronic Transmission of Submittals.
    a. Transmittals can be made electronically.
        i. Use email.
        ii. Protocols and processes will be discussed at the preconstruction meeting.
2. Submittals by mail:
    a. Action Submittals: Submit three paper copies.

b. Informational Submittals: Submit two paper copies.

3. Certificates and Certifications Submittals: Includes signature of entity responsible for preparing certification. Provide a digital signature on electronically submitted certificates and certifications where indicated.

4. Requests for reviews of mock-up submittals shall be made to Engineer electronically 15 days prior to Contractor's scheduled implementation of the associated construction activities.

E. Delegated-Design Services Certification: In addition to other required submittals, submit digitally signed PDF electronic file copies of certificate, signed and sealed by the responsible design professional.

F. Contractor's Review:

1. Submittals: Marked with Contractor's approval stamp before submitting to Engineer.

G. Engineer's Action:

1. Action Submittals including mock-ups: Stamped with an action stamp and returned.

2. Informational Submittals: Reviewed but not returned, or rejected if they do not comply with requirements.

3. Incomplete submittals will be returned without review.

4. Submittals Not Required: May not be reviewed and may be discarded.

H. Contractor shall be responsible for cost of Engineer's repeat review of submittals.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END SECTION 01 33 00

SECTION 01 35 05

ENVIRONMENTAL PROTECTION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Minimizing the pollution of air, water, or land; control of noise, the disposal of solid waste materials, and protection of deposits of historical or archaeological interest.

1.2 SUBMITTALS

A. Shop Drawings:

1. Submit in accordance with Specification Section 01 33 00.
2. Prior to the start of any construction activities complete and submit:
   a. A detailed proposal of all methods of control and preventive measures to be utilized for environmental protection.
   b. A drawing of the work area, haul routes, storage areas, access routes and current land conditions including trees and vegetation.
   c. A copy of the approved Stormwater Pollution Prevention Plan (SWPPP) plan and Notice of Intent (NOI).

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 INSTALLATION

A. Employ and utilize environmental protection methods, obtain all necessary permits, and fully observe all local, state, and federal regulations. Comply with all conditions of the current Washington Department of Ecology Construction Stormwater general permit.

B. Land Protection

1. Except for any work or storage area and access routes specifically assigned for the use of the Contractor, the land areas outside the limits of construction shall be preserved in their present condition.
   a. Contractor shall confine his construction activities to areas defined for work within the Contract Documents.
2. Manage and control all borrow areas, work or storage areas, access routes and embankments to prevent sediment from entering nearby water or land adjacent to the work site.
3. Restore all disturbed areas including borrow and haul areas and establish permanent type of locally adaptable vegetative cover.
4. Unless earthwork is immediately paved or surfaced, protect all side slopes and backslopes immediately upon completion of final grading.

5. Plan and execute earthwork in a manner to minimize duration of exposure of unprotected soils.
6. Except for areas designated by the Contract Documents to be cleared and grubbed, the Contractor shall not deface, injure or destroy trees and vegetation, nor remove, cut, or disturb them without approval of the Engineer.
    a. Any damage caused by the Contractor's equipment or operations shall be restored as nearly as possible to its original condition at the Contractor's expense.

C. Surface Water Protection:

1. Utilize, as necessary, erosion control methods to protect side and backslopes, and minimize the discharge of sediment to the surface water leaving the construction.
    a. These controls shall be maintained until the site is ready for final grading and landscaping or until they are no longer warranted and concurrence is received from the Engineer.
    b. Physically retard the rate and volume of run-on and runoff by:
        i. Implementing structural practices such as diversion swales, terraces, straw bales, silt fences, berms, storm drain inlet protection, rocked outlet protection, sediment traps and temporary basins.
        ii. Implementing vegetative practices such as temporary seeding, permanent seeding, mulching, sod stabilization, vegetative buffers, hydroseeding, anchored erosion control blankets, sodding, vegetated swales or a combination of these methods.
        iii. Providing Construction sites with graveled or rocked access entrance and exit drives and parking areas to reduce the tracking of sediment onto public or private roads.
2. Discharges from the construction site shall not contain pollutants at concentrations that produce objectionable films, colors, turbidity, deposits or noxious odors in the receiving stream or waterway.

D. Solid Waste Disposal:

1. Collect solid waste on a daily basis.
2. Provide disposal of degradable solid waste to an approved solid waste disposal site.
3. Provide disposal of nondegradable solid waste to an approved solid waste disposal site or in an alternate manner approved by Engineer and regulatory agencies.
4. No building materials wastes or unused building materials shall be buried, dumped, or disposed of on the site.

E. Fuel and Chemical Handling:

1. Store and dispose of chemical wastes in a manner approved by regulatory agencies.
2. Take special measures to prevent chemicals, fuels, oils, greases, herbicides, and insecticides from entering drainage ways.
3. Do not allow water used in onsite material processing, concrete curing, cleanup, and other waste waters to enter a drainage way(s) or stream.

4. The Contractor shall provide containment around fueling and chemical storage areas to ensure that spills in these areas do not reach waters of the state.
5. The Contractor shall provide a spill, prevention, control, and countermeasure plan per WSDOT Standard Specification 1-07.15(1).

F. Control of Dust:

1. The control of dust shall mean that no construction activity shall take place without applying all such reasonable measures as may be required to prevent particulate matter from becoming airborne so that it remains visible beyond the limits of construction.
    a. Reasonable measures may include paving, frequent road cleaning, planting vegetative groundcover, application of water or application of chemical dust suppressants.
2. Utilize methods and practices of construction to eliminate dust in full observance of agency regulations.
    a. The Engineer will determine the effectiveness of the dust control program and may request the Contractor to provide additional measures, at no additional cost to the City.

G. Burning:

1. Do not burn material on the site.

H. Control of Noise:

1. Control noise by fitting equipment with appropriate mufflers.
2. Comply with City requirements for allowed hours and days of construction.

I. Completion of Work:

1. Upon completion of work, leave area in a clean, natural looking condition.
2. Ensure all signs of temporary construction and activities incidental to construction of required permanent work are removed.

J. Historical protection:

1. If during the course of construction, evidence of deposits of historical or archaeological interests is found, cease work affecting the find and notify Engineer.
    a. Do not disturb deposits until written notice from Engineer is given to proceed.
2. The Contractor may be compensated for lost time or changes in construction to avoid the find based upon normal change order procedures.

END SECTION 01 35 05

SECTION 01 40 00

QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Quality control and control of installation
2. Tolerances
3. References
4. Testing and inspection services
5. Manufacturers' field services
6. Labeling
7. Examination
8. Preparation

1.2 QUALITY CONTROL AND CONTROL OF INSTALLATION

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

B. Contractor shall comply with manufacturers' instructions, including each step in sequence.

C. When manufacturers' instructions conflict with Contract Documents, Contractor shall request clarification from Engineer before proceeding.

D. Contractor shall comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

E. Contractor shall perform Work by persons qualified to produce required and specified quality.

F. Contractor shall verify field measurements are as indicated on Shop Drawings or as instructed by manufacturer.

G. Contractor shall secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.

1.3 TOLERANCES

A. Contractor shall monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.

B. Contractor shall comply with manufacturers' tolerances. When manufacturers' tolerances conflict with Contract Documents, Contractor shall request clarification from Engineer before proceeding.

C. Contractor shall adjust products to appropriate dimensions; position before securing products in place.

1.4 REFERENCES

A. For products or Work specified by association, trades, or other consensus standards, Contractor shall comply with requirements of standard, except when more rigid requirements are specified or are required by applicable codes.

B. The Work shall conform to reference standard by date of issue current on date for receiving Bids, except where specific date is established by code.

C. The Contractor shall obtain copies of standards where required by product specification sections.

D. When specified reference standards conflict with Contract Documents, Contractor shall request clarification from Engineer before proceeding.

E. Contractual relationships, duties, and responsibilities of parties in Contract and those of Engineer shall not be altered from Contract Documents by mention or inference otherwise in reference documents.

1.5 TESTING AND INSPECTION SERVICES

A. The Contractor shall employ and pay for services of a state certified independent and third-party firm acceptable to the City to perform specified testing and inspection.

1. Prior to start of Work, submit testing laboratory name, address, and telephone number, and names of full time registered Engineer, specialists and responsible officer.
2. Submit copy of report of laboratory facilities inspection made by Materials Reference Laboratory of National Bureau of Standards during most recent inspection, with memorandum of remedies of deficiencies reported by inspection.

B. Independent firm will perform tests, inspections and other services specified in individual specification sections and as required by Engineer.

1. Laboratory: Authorized to operate in State of Washington
2. Laboratory Staff: Maintain full time registered Engineer and necessary specialists on staff to review services.
3. Testing Equipment: Calibrated at reasonable intervals with devices of accuracy traceable to National Bureau of Standards or accepted values of natural physical constants.

C. Testing and inspections may occur on or off project site. Perform off-site testing as required by Engineer.

D. Reports will be submitted by independent firm to Engineer, Contractor, and in triplicate, indicating observations and results of tests and indicating compliance or non-compliance with Contract Documents.

1. Submit final report indicating correction of Work previously reported as non-compliant.

E. The Contractor shall cooperate with independent firm; furnish samples of materials, design mix, equipment, tools, storage, safe access, and assistance by incidental labor as requested.

1. Notify Engineer and independent firm twenty-four (24) hours prior to expected time for operations requiring services.
2. Make arrangements with independent firm and pay for additional samples and tests required for Contractor's use.

F. Testing and employment of independent firm does not relieve Contractor of obligation to perform Work in accordance with requirements of Contract Documents.

G. Re-testing or re-inspection required because of non-conformance to specified requirements shall be performed by same independent firm on instructions by Engineer.

1. Payment for re-testing or re-inspection will be charged to Contractor by deducting testing charges from Contract Sum/Price.
2. Submit final report indicating correction of Work previously reported as non-compliant.

H. Independent Firm Responsibilities:

1. Test samples of mixes submitted by Contractor.
2. Provide qualified personnel at site. Cooperate with Engineer and Contractor in performance of services.
3. Perform specified sampling and testing of products in accordance with specified standards.
4. Ascertain compliance of materials and mixes with requirements of Contract Documents.
5. Promptly notify Engineer and Contractor of observed irregularities or non-conformance of Work or products.
6. Perform additional tests required by Engineer.
7. Attend preconstruction meetings and progress meetings.

I. Independent Firm Reports: After each test, promptly submit one (1) copy of report to Engineer and the City; and two (2) copies to Contractor. Provide in reports the interpretation of test results. Include the following:

1. Date issued.
2. Project title and number.
3. Name of inspector.
4. Date and time of sampling or inspection.
5. Identification of product and specifications section.
6. Location in Project.
7. Type of inspection or test.
8. Date of test.
9. Results of tests.
10. Conformance with Contract Documents.

J. Limits On Independent Firm:

1. May not release, revoke, alter, or enlarge on requirements of Contract Documents.
2. May not approve or accept any portion of the Work.
3. May not assume duties of Contractor.

4. Has no authority to stop the Work.

1.6 MANUFACTURERS' FIELD SERVICES

A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to:

1. Observe site conditions.
2. Observe conditions of surfaces.
3. Review installation and quality of Work.
4. Review start-up of equipment.
5. Review testing, adjusting and balancing of equipment.
6. Initiate instructions when necessary.

B. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

1.7 LABELING

A. Attach label from agency approved by authority having jurisdiction for products, assemblies, and systems required to be labeled by applicable code.

B. Label Information: Include manufacturer's or fabricator's identification, approved agency identification, and the following information, as applicable, on each label.

1. Model number.
2. Serial number.
3. Performance characteristics.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 EXAMINATION

A. The Contractor shall verify existing site conditions and substrate surfaces are acceptable for subsequent Work. Beginning new Work means acceptance of existing conditions.

B. The Contractor shall verify substrate is capable of structural support or attachment of new Work being applied or attached.

C. The Contractor shall examine and verify specific conditions described in individual specification sections.

D. The Contractor shall verify utility services are available, of correct characteristics, and in correct locations.

3.2 PREPARATION

A. The Contractor shall clean substrate surfaces prior to applying next material or substance.

B. The Contractor shall seal cracks or openings of substrate prior to applying next material or substance.

C. The Contractor shall apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying new material or substance in contact or bond.

3.3 GENERAL INSTALLATION REQUIREMENTS

A. The Contractor shall install products specified in individual section, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.

3.4 PROTECTION OF INSTALLED WORK

A. Contractor shall protect installed work from damage by construction operations

END SECTION 01 40 00

SECTION 01 60 00

PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Products.

B. Product delivery requirements.

C. Product warranties.

D. Product selection process.

E. Product substitution procedures.

F. Comparable products

PART 2 - PRODUCTS

2.1 PRODUCTS

A. Furnish products of qualified manufacturers suitable for intended use. Furnish products of each type by single manufacturer unless specified otherwise.

2.2 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Comply with the provision of Section 01 65 50, Product Delivery, Storage, and Handling.

2.3 PRODUCT WARRANTIES

A. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.

2.4 PRODUCT SELECTION PROCESS

A. Product: Product named that complies with requirements.

B. Manufacturer/Source: Product by manufacturer or from source named that complies with requirements.

C. Products: One of the products listed that complies with requirements, or approved equal.

D. Manufacturers: Product by one of the manufacturers listed that complies with requirements, or approved equal.

E. Basis-of-Design Product: Either the specified product or a comparable product by one of the other named manufacturers.

F. Visual Matching Specification: Product that matches Engineer’s sample. Engineer’s decision will be final.

G. Visual Selection Specification: Product (and manufacturer) that complies with other specified requirements. Engineer will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.5 PRODUCT SUBSTITUTION PROCESS

A. Comply with the provisions of Section 01 25 13, Product Substitution.

2.6 COMPARABLE PRODUCTS

A. Conditions for Consideration:

1. Product does not require revisions to the Contract Documents, is consistent with the Contract Documents and will produce the indicated results, and is compatible with other portions of the Work.
2. Comparison of proposed product with those named in the Specifications.
3. Product provides specified warranty.
4. Similar installations, if requested.
5. Samples, if requested.

PART 3 - EXECUTION (NOT USED)

END SECTION 01 60 00

SECTION 01 65 50

PRODUCT DELIVERY, STORAGE, AND HANDLING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Scheduling of product delivery.
2. Packaging of products for delivery.
3. Protection of products against damage from:
    a. Handling.
    b. Exposure to elements or harsh environments.

B. Payment:

1. No payment will be made to Contractor for equipment or materials not properly stored and insured or without approved submittals.
    a. Previous payments for items will be deducted from subsequent progress estimate(s) if proper storage procedures are not observed.

1.2 DELIVERY

A. Scheduling: Schedule delivery of products or equipment as required to allow timely installation and to avoid prolonged storage.

B. Packaging: Deliver products or equipment in manufacturer's original unbroken cartons or other containers designed and constructed to protect the contents from physical or environmental damage.

C. Identification: Clearly and fully mark and identify as to manufacturer, item, and installation location.

D. Protection and Handling: Provide manufacturer's instructions for storage and handling.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 PROTECTION, STORAGE, AND HANDLING

A. Manufacturer’s Instruction:

1. Protect all products or equipment in accordance with manufacturer’s written directions.
    a. Store products or equipment in location to avoid physical damage to items while in storage.
    b. Handle products or equipment in accordance with manufacturer's recommendations and instructions.
2. Protect equipment from exposure to elements and keep thoroughly dry.

3. Provide site security as necessary to ensure no occurrence of theft or damage to stored materials.

3.2 FIELD QUALITY CONTROL

A. Inspect Deliveries

1. Inspect all products or equipment delivered to the site prior to unloading.
    a. Reject all products or equipment that are damaged, used, or in any other way unsatisfactory for use on Project.

B. Monitor Storage Area: Monitor storage area to ensure suitable temperature and moisture conditions are maintained as required by manufacturer or as appropriate for particular items.

END SECTION 01 65 50

SECTION 01 70 00

CLOSEOUT REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section specifies administrative and procedural requirements for project closeout, including but not limited to:

1. Examination, preparation, and general installation procedures.
2. Substantial Completion.
3. Final Acceptance.
4. Record Documents Submittal.
5. Warrantees and Guarantees.
6. Cleaning and protection.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION

3.1 SUBSTANTIAL COMPLETION:

A. Preliminary Procedures: Before requesting inspection for certification of Substantial Completion complete the following:

1. Complete all construction activities as required by contract documents.
2. Submit specific warranties, workmanship bonds, final certifications and similar documents.
3. Deliver tools, spare parts, extra stock, and similar items.
4. Complete final clean up requirements.

B. Inspection Procedures: On receipt of request for inspection, the Engineer will either proceed with inspection or advise the Contractor of any unfilled requirements. The Engineer will prepare the Certificate of Substantial Completion following inspection, or advise the Contractor of construction that must be completed or corrected before the certificate will be issued.

1. The Engineer will repeat inspection when requested and has been assured that the Work has been substantially completed.
2. Results of the completed inspection will form the basis of requirements for final acceptance of the work.

3.2 FINAL ACCEPTANCE

A. Preliminary Procedures: Before requesting final inspection for certification of final acceptance and final payment the Contractor shall complete the following. Any exceptions shall be listed in the request.

1. Contractors Affidavit of Payments, Debts and Claims.

2. Submit Contractor's Affidavit of Release of Liens.
3. Submit consent of surety to final payment.
4. Submit the final payment request with releases and supporting documentation not previously submitted and accepted.
5. Submit a copy of the Engineer's final inspection list (punch list) of items to be completed or corrected stating that each item has been completed or otherwise resolved for acceptance.
6. Submit Contractor's statement that his final application, as presented, is the final bill and no other claims will be presented.

B. Re-inspection Procedure: The Engineer will re-inspect the Work upon receipt of notice that the Work, including inspection list items from earlier inspections, has been completed, except items whose completion has been delayed because of circumstances acceptable to the Engineer.

1. Upon completion of re-inspection, the Engineer will prepare a certificate of final acceptance or advise the Contractor of Work that is incomplete or of obligations that have not been fulfilled but are required for final acceptance.
2. If necessary, re-inspection will be repeated, but at the expense of the Contractor who will reimburse the City for the re-inspection by the Engineer.

3.3 RECORD DOCUMENT SUBMITTALS

A. Record documents shall not be used for construction purposes; they shall be protected from deterioration and loss in a secure, fire-resistive location; the Contractor shall provide access to record documents for the Engineers reference during normal working hours.

B. The Contractor shall maintain and provide to Engineer a clean, undamaged set of prints of Contract Plans and Shop Drawings. The Contractor shall mark the set to show the actual installation where the installation varies from the Work as originally shown. The plans and drawings that will most clearly show the condition fully and accurately shall be used. If Shop Drawings are used a cross-reference to the corresponding location on the Contract Plans shall be provided. Particular attention shall be paid to concealed elements that would be difficult to measure and record at a later date.

1. Record sets shall be marked with red erasable pencil.
2. New information that is important to the City, but that was not shown on the Contract Plans or Shop Drawings shall be marked.
3. Reference to Change Order numbers will be shown where applicable.

C. One complete copy of the Project Manual, including addenda, and one copy of other written construction documents such as Change Orders and modifications issued in printed form during construction shall be maintained. These documents shall be marked to show variations in actual Work performed in comparison with the text of the Specifications and modifications. Give particular attention to substitutions, selection of options and similar information on elements that are concealed or cannot otherwise be readily discerned later by direct observation. Note related record drawing information and Product Data.

1. Upon completion of the Work, submit record Specifications to the Engineer for the City's records.

D. Maintain one copy of each Product Data submittal. These documents shall be marked to show significant variations in actual Work performed in comparison with information submitted. Variations in products delivered to the site, and from the manufacturer's installation instructions and recommendations shall be included. Give particular attention to concealed products and portions of the Work which cannot otherwise be readily discerned later by direct observation. Note related Change Orders and mark-up of record drawings and Specifications.

1. Upon completion of mark-up, submit complete set of record Product Data to the Engineer for the City's records.

E. Refer to other Specification Sections for requirements of miscellaneous record-keeping and submittals in connection with actual performance of the Work. Immediately prior to the date or dates of Substantial Completion, complete miscellaneous records and place in good order, properly identified and bound or filed, ready for continued use and reference. Submit to the Engineer for the City's records.

3.4 WARRANTIES & GUARANTEES

A. In addition to guarantees otherwise specified in other sections of the Specifications, the Contractor and each individual Subcontractor shall guarantee and warrant, in writing, the work to be performed, and all materials to be furnished under this Contract against the defects in materials or workmanship and to pay for the value of repair of any damage to other work resulting there from for a period of one (1) year from date of Substantial Completion All guarantees and warranties required by the Specifications shall be in writing in requisite legal form, and delivered to the Engineer at the time of submission of requisition for final payment. All Subcontractor's guarantees and warrantees shall be underwritten by the Contractor, who shall obtain and deliver same to the Engineer before the Work shall be deemed finished and accepted.

B. The Contractor shall, at its own expense and without cost to the City, within a reasonable time after receipt of written notice thereof, make good any defects in material or workmanship which may develop during stipulated guarantee periods, as well as any damage to other work caused by such defects or by their repairs. Any other defects in material or workmanship, not reasonably observable or discovered during the guarantee period, shall be repaired and/or replaced at the Contractor's expense and such shall be completed within a reasonable time after written notice is given to the Contractor.

3.5 CLOSE-OUT COORDINATION

A. Coordinate scheduling submittals and work of the various sections for the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.

B. Coordinate completion and clean-up of work of separate sections.

3.6 LIST OF INCOMPLETE ITEMS (CONTRACTOR'S PUNCH LIST)

A. General: The Contractor shall prepare and submit to Engineer a single list of items to be completed and corrected. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.

1. Organize items applying to each space by major element.
2. Include the following information at the top of each page:
    a. Project name.
    b. Date.
    c. City's Spec Number.
    d. City's Work Order Number.
    e. Name of Engineer.
    f. Name of Contractor.
    g. Page number.

3.7 FINAL CLEANING

A. General:

1. Provide final cleaning.
2. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

B. Cleaning:

1. Comply with manufacturer's written instructions.
2. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:
    a. Clean Project site and surrounding area disturbed by construction activities of rubbish, waste material, litter, and other foreign substances.
    b. Remove tools, construction equipment, machinery, and surplus material from Project site.
    c. Leave Project clean and ready for use.
    d. Strictly adhere to product manufacturer’s written recommendations for proper cleaning of product and material surfaces.

C. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on City's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

3.8 Prior to demobilization, complete and submit the Washington State Department of Ecology Notice of Termination as required by the Construction Stormwater General Permit.

END SECTION 01 70 00

SECTION 01 74 23

FINAL CLEANING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Trimming and Cleanup

1.2 REFERENCES

A. Washington State Department of Transportation Standard Specifications for Road, Bridge and Municipal Construction 2018 (WSDOT Publication M41-10).

1.3 DESCRIPTION OF REQUIREMENTS

A. Pollution Control Conduct clean-up and disposal operations to comply with local ordinances and anti-pollution laws.

1. Burning or burying of rubbish and waste materials on the project site is not permitted.
2. Disposal of volatile fluid wastes (such as mineral spirits, oil, or paint thinner) in storm or sanitary sewer systems or into streams or waterways is not permitted.

B. Additional Requirements

1. Maintain all spaces and facilities customarily used by the public in safe and clean condition at all times.
2. Maintain corridors and any other spaces or facilities providing required egress in safe, usable condition at all times.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 DURING CONSTRUCTION

A. Oversee cleaning and ensure that building, grounds and adjoining streets are maintained free from accumulation of waste materials and rubbish.

B. Do not allow waste materials, rubbish, and debris to accumulate and become an unsightly or hazardous condition.

C. Remove waste materials, rubbish and debris from the site and legally dispose of at public or private dumping areas off the City’s property.

3.2 FINAL CLEANUP

A. Upon completion of all other work under the Contract, and prior to Final Acceptance, the Contractor shall be responsible for final cleanup of all work under this Contract.

B. Contractor to perform the following cleaning operations after all trades have completed their work under this Contract.

1. Leave entire project perfectly clean and ready for occupancy. All finishes shall be turned over to the City in a new condition, free of all damage.
2. Clean dirt and debris from drainage system.
3. Clean site; sweep paved areas, rake clean landscaped surfaces.
4. Remove waste and surplus materials, rubbish, and construction facilities from the site.

C. Contractor shall continue Final Cleaning Up as may be required by the punch list or cleaning required due to punch list corrective work until such work is complete.

3.3 CONTRACTOR OBLIGATION TO CLEAN UP

A. If a dispute arises between the contractor and separate contractors as to their responsibility for clean up resulting from project work, the City reserves the right to clean up and charge the cost to the contractor or contractors it deems responsible for the conditions.

END SECTION 01 74 23

SECTION 01 78 23

OPERATION AND MAINTENANCE MANUALS

PART 1 - GENERAL

1.1 GENERAL

A. Contractor shall submit complete Operation and Maintenance (O&M) Manuals covering all equipment furnished under the plans and specifications.

B. The information supplied shall be prepared for use by the City's personnel in the form of an instructional manual.

C. The O&M Manual shall include all installation, operation, maintenance, handling, storage, assembly, erection and other pertinent information for all equipment, systems, and materials furnished and installed on or at the project.

D. Comb bound manufacturer's literature will not be accepted.

1.2 SUBMITTALS

A. Submit in accordance with Section 01 33 00.

B. The Contractor shall submit to the City three (3) copies of the proposed O&M Manual for review by the City. After reviewing the manual for compliance with the drawings and the specifications, the City's comments, if any, will be returned with the Manuals to the Contractor for revision.

C. The Contractor shall submit to the City three (3) copies of the revised manual for review by the City. After reviewing the manual for compliance with the drawings, specifications, and previous comments, the City's comments, if any, will be returned to the Contractor for revision.

D. Near completion of the project, but prior to Final Completion of the work the Contractor shall submit to the City three (3) copies of the updated O&M Manual that reflect the as-built project for review by the City. After reviewing the manual for compliance with the specifications and the drawings, the City's comments, if any, will be returned with the Manuals to the Contractor for final revisions.

E. The Contractor shall provide three (3) copies of the manual and one (1) electronic copy of the final manual.

1.3 BINDERS

A. All O&M information shall be bound in a binder with durable cleanable plastic covers. Each binder shall have:

1. 3-inch material capacity.
2. D-ring style.
3. 2 interior pockets.
4. Lever ring operators.
5. Clear vinyl extended view front and back pockets.
6. Vinyl cover shall be white.

B. Binder Cover and Spine

1. The cover of the binder shall include the following in order from top to bottom:
   a. PROJECT NAME
   b. “OPERATIONS AND MAINTENANCE MANUAL”
   c. “VOLUME ____ OF ____”
   d. OWNER:

1.4 TABLE OF CONTENTS

A. The table of contents shall be included in each volume. The table shall be arranged in a systematic order as follows:

1. Project Name
2. Year
3. City including name, address and phone number
4. Engineer including name, address and phone number
5. Contractor including name, address and phone number
6. List of each product or item included in each volume. The contents of all volumes shall be listed.

B. The table shall provide a breakdown of the contents found in each volume, if multiple volumes.

1.5 DIVIDERS

A. All dividers shall be white and have standard three ring punched holes with a reinforced binding edge. The divider tabs shall be integral to the divider with plastic coated colored tabs. Adhesive tabs will not be accepted. Each divider tab shall have the item description printed on the tab.

1.6 OPERATION AND MAINTENANCE MANUAL CONTENT FORMAT

A. General

1. Page size shall be 8.5 x 11 inch.
2. Paper shall be 20-pound minimum for typed pages.
3. Text: Type written, 10-point minimum point size or Manufacturer’s printed data sheets.
4. All data shall be three-hole punched for binding in three ring binders.
5. Each separate product or piece of operating equipment shall have its own fly-leaf. The fly leaf shall provide a description of the product and major component parts of the equipment.
6. The name, address and telephone number of the subcontractor, supplier or installer as appropriate and where possible the model or part number of the product shall be on each of the fly leafs.

B. Project Data and Information

1. Only those sheets that are pertinent to the specific equipment, product, device or system shall be included.

2. Each sheet of the product data literature shall be clearly annotated with the product or part(s) installed, identification of subassemblies, drawings and appropriate descriptive narratives. The annotation type shall be consistent throughout the manual.
3. All references to non-applicable information shall be deleted or marked out to indicate the information is not applicable to the project.
4. Product information including performance curves, recommended spare parts, handling, storage, maintenance, operation, assembly, erection, installation, adjusting, emergency shutdown, troubleshooting, and as may be otherwise required shall be included.
5. All testing and certification information and requirements identified within these Contract Documents or as required by local, state or federal codes or laws.
6. Where needed, supplemental text shall be included for all product data to further clarify any information or procedures.
7. Original manufacturer's literature shall be used in all instances where colored or black and white photos are a part of the product data literature or other information. Photocopying of original manufactures literature in all other instances will be acceptable provided the quality is equal to that of the original literature published by the manufacturer.
8. Electrical or electronic items or systems:
    a. Provide a description of the unit or component part which will include performance curves, engineering data, nameplate data, and test results (motor test data sheets, circuit tests, etc.).
    b. Interconnecting wiring diagrams, including all control and lighting systems.
    c. Listing of all panel board circuit directories.
    d. All manufacturer's printed operating and maintenance instructions for all electrical systems and components.
    e. List of recommended spare parts.
9. Materials and Finishes
    a. Manufacturer’s data including catalog number, size, and composition.
    b. Color and texture designations.
    c. Care and maintenance instructions including cleaning agents and methods, cleaning precautions and recommended cleaning and maintenance schedules.

C. Drawings

1. Drawings shall be used to clearly illustrate product data information and other structural materials supplied on the project. When appropriate drawings shall be included with the product data sheets and O&M Manual information or in individual sections if not applicable to other products. Drawings to be included shall be:
    a. Include individual product control, mechanical, and process flow diagrams for all products.

b. Be reduced to 8 1/2x 11 inches or 11 x 17 inches and folded to 8 1/2 x 11 inches when practicable. Drawing title blocks shall be visible without unfolding the drawing. All drawings so reduced must in the opinion of the City be completely legible. Drawings deemed not to be legible shall be replaced with full size drawings by the Contractor.

c. Full size drawings shall be folded and placed in 8 1/2-inch clear vinyl sheet protectors and bound in the manual with title blocks clearly displayed.

d. Drawings included with the manufacturer's literature shall be indexed by the manufacturer.

D. Electronic Format

1. The file and folder structure of the electronic copy of the O&M Manual is to be the same as the tabbed structure of the hardcopy.

2. Electronic documentation shall be provided on standard CD-ROM media capable of being read by standard PC CD-ROM drives. All documents shall be provided in Adobe Systems portable document format (PDF), viewable with Adobe Reader, latest version. Where possible, the PDF documents shall be produced using a print driver engine. Documents for which no electronic form exists may be scanned at 100 percent image scaling and resolution of 300 dpi or better.

3. Drawings generated in AutoCAD shall be provided as both DWG files and PDF files.

END SECTION 01 78 23

SECTION 02 41 00

SITE DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

A. Section applies to the following items:

1. Hot Mix Asphalt (HMA) sawcut and seal
2. Remove HMA
3. Remove tree

B. Section includes:

1. Locate existing utilities.
2. Protection of existing vegetation, landscaping materials, utilities, pavement and site improvements not scheduled for removal.
3. Protection of adjacent property, structures, benchmarks, and monuments.
4. Removal of sidewalk, fencing, storm drainage structures and drainage lines, pavement, and other items as required to install new improvements.
5. Removal and legal disposal off site of material resulting from these operations.

C. Demolition is to include all items indicated as well as those items and existing construction components which would interfere with the installation of any components of the new construction specified elsewhere in the Contract Documents.

1. Items noted to be salvaged and/or reused shall be carefully removed and protected by the Contractor.
2. Items noted to remain shall be protected by the Contractor for the duration of the construction activity.
3. Demolition of any and all existing construction components not indicated for removal shall be approved through the RFI process prior to demolition of said component.

1.2 REFERENCES

A. Washington State Department of Transportation Standard Specifications for Road, Bridge and Municipal Construction 2018 (WSDOT Publication M41-10).

B. City of Chehalis Engineering Design and Development Standards

1.3 DEFINITIONS

A. Remove: Contractor shall remove and legally dispose of items except those indicated otherwise.

B. Existing to Remain: Contractor shall protect construction indicated to remain against damage and soiling during demolition. When permitted by the Engineer, items may be removed to a suitable, protected storage location during demolition and then cleaned and reinstalled in their original locations.

C. Salvage: item to be carefully removed and protected to preserve condition for the intention of re-use.

1. Salvage for Reinstallation: Remove and protect items indicated as salvage. Avoid damage or soiling of such items during demolition. Retain in suitable protected storage until required in new construction.

1.4 MATERIAL OWNERSHIP

A. Except for items or materials directed to be reused, salvaged, reinstalled, or to remain the City's property, all demolished materials shall become the Contractor's property and shall be removed from the site and disposed of legally off site.

1.5 SUBMITTALS

A. Proposed dust-control measures.

B. Proposed noise-control measures.

C. Schedule of demolition activities indicating the following:

1. Detailed sequence of demolition and removal work, with starting and ending dates for each activity including abatement.
2. Interruption of utility services.
3. Coordination for shutoff capping, and continuation of utility services.

D. Photographs or videotape, sufficiently detailed, of existing conditions of adjoining construction and site improvements that might be misconstrued as damage caused by demolition operations.

E. Landfill records indicating receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

1.6 QUALITY ASSURANCE

A. Demolition Firm Qualifications: Engage an experienced firm that has successfully completed demolition work similar to that indicated for this Project.

B. Regulatory Requirements: Comply with governing EPA notification regulations before starting demolition. Comply with hauling and disposal regulations of authorities having jurisdiction. Comply with erosion control measures as required due to the scope of required work. Obtain Demolition Permit from City of Chehalis, at no additional cost to the City.

1.7 PROJECT CONDITIONS

A. The City assumes no responsibility for actual condition of structures to be demolished.

1.8 SCHEDULE

A. The Contractor shall notify the City seven (7) calendar days in advance of demolition activities.

B. Any items to be salvaged shall be carefully removed, processed, and protected from damage. The Contractor shall be responsible for storing materials to be reused by the project until used or removed from the site at no additional cost to the City.

PART 2 - PRODUCTS

2.1 REPAIR MATERIALS

A. Use repair materials identical to existing materials.

1. Where identical materials are unavailable or cannot be used for exposed surfaces, use materials that visually match existing adjacent surfaces to the full extent possible.

B. Use materials whose installed performance equals or surpasses that of existing materials.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Locate and pothole existing utilities to confirm the depths prior to excavation.

B. Survey existing conditions and correlate with requirements indicated to determine extent of demolition required.

C. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.

D. Perform surveys as the Work progresses to detect hazards resulting from demolition activities.

3.2 UTILITY SERVICES

A. Maintain in service existing utilities indicated to remain and protect them against damage during demolition operations.

1. Do not interrupt existing utilities serving adjacent occupied or operating facilities, except when authorized in writing by the City and authorities having jurisdiction. Provide temporary services during interruptions to existing utilities, as acceptable to the City.

a. Provide not less than 72 hours' notice to the City if shutdown of service is required during changeover.

3.3 PREPARATION

A. Drain, purge, or otherwise remove, collect, and dispose of chemicals, gases, flammables, or other dangerous materials before proceeding with demolition operations.

B. Conduct demolition operations and remove debris to ensure minimum interference with roads, streets, walks, and other adjacent occupied and used facilities.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from the City and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.

C. Conduct demolition operations to prevent injury to people and damage to adjacent buildings and facilities to remain. Ensure safe passage of people around demolition area.

1. Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by the City
2. Protect existing site improvements, appurtenances, and landscaping to remain.
3. Erect a plainly visible fence around drip line of individual trees or around perimeter drip line of groups of trees to remain.

3.4 POLLUTION CONTROLS

A. Use water mist, temporary enclosures, and other suitable methods to limit the spread of dust and dirt. Comply with governing environmental protection regulations.

1. Do not use water when it may damage existing construction or create hazardous or objectionable conditions, such as ice, flooding, and pollution.

B. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

C. Clean adjacent structures and improvements of dust, dirt, and debris caused by demolition operations. Return adjacent areas to condition existing before start of demolition.

3.5 DEMOLITION

A. Demolish and remove existing construction. Use methods required to complete Work within limitations of governing regulations and as follows:

1. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire suppression devices during flame-cutting operations.
2. Maintain adequate ventilation when using cutting torches.
3. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off
4. Dispose of demolished items and materials promptly.
5. Return elements of construction and surfaces to remain to condition existing before start of demolition operations.

3.6 DISPOSAL OF DEMOLISHED MATERIALS

A. General: Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.

B. Burning: Burning is prohibited.

C. Disposal: Transport all items, not wanted by the City or re-used by the project, off the City's property and legally dispose of them.

END SECTION 02 41 00

SECTION 31 05 16

AGGREGATES

PART 1 - GENERAL

1.1 SUMMARY

A. Section applies to the following items:

1. Crushed Surfacing Base Course
2. Crushed Surfacing Base Course Compaction
3. Bank Run Gravel for Trench Backfill
4. Pipe Zone Bedding Material
5. Gravel base
6. Quarry spalls

1.2 REFERENCES

A. Washington State Department of Transportation Standard Specifications for Road, Bridge and Municipal Construction 2018 (WSDOT Publication M41-10).

B. City of Chehalis Engineering Design and Development Standards

1.3 SUBMITTALS

A. Materials Source: Submit name of imported materials suppliers.

B. Import Aggregate Material Certifications: All imported aggregates shall be provided with certifications certifying that each aggregate does not contain of contaminated soils, petroleum products or dangerous wastes.

1. If the aggregate product consists of no recycled products and consists of only virgin soils, then the aggregate supplier shall provide certification stating that the aggregate products consist of virgin soils/rock and provide WSDOT source certification for all import materials. The supplier shall also provide a written description of the aggregate manufacturing process, from the mine source to project delivery. The description shall include stockpiling at the source, the source of wash water used if applicable, and chain of material custody.
2. If the aggregate products consist of recycled products, the products shall comply with following requirements:
    a. WSDOT 9-03.21 excepting recycled glass and slag. Recycled glass and slag products are prohibited.
    b. WAC 173-303 and RCW 70.105 requirements to certify that the soils do not contain dangerous waste. The products shall be chemically tested to determine the waste constituents and the levels found. Soils must have levels below published threshold limits.

3. Gradation Analysis. Submit gradation analysis certification documents from an independent qualified testing agency indicating and interpreting test results for compliance of specified aggregate materials. The testing, test results and documentation certificate shall be for this specific project. In the event that the documents are not project specific, provide certificates within one year of the submittal date and certify that the manufacturing processes performed for the other project are the same for the Chehalis Recreation Park Improvement Project. Certificates older than one year from the submittal date will not be acceptable.

C. Import Aggregate Material Certificates: One certificate shall be provided for each of the following:

1. Crushed Surfacing Base Course
2. Crushed Surfacing Base Course Compaction
3. Bank Run Gravel for Trench Backfill
4. Pipe Zone Bedding Material
5. Gravel base
6. Quarry spalls

1.4 QUALITY ASSURANCE

A. Furnish each aggregate material from single source throughout the Work.

1. Regional Materials: Furnish materials extracted, processed, and manufactured within 500 miles of Project site.
2. Perform Work in accordance with the WSDOT 2018 Standard Specifications.
3. Maintain one copy of document onsite.

PART 2 - PRODUCTS

2.1 AGGREGATE MATERIALS

A. Crushed Surfacing Top Course and Base Course: Shall conform to WSDOT Section 9-03.9(3) requirements.

B. Common Soils: Shall be existing native, naturally occurring soils. If excavated common soils are used on-site, they shall comply with the respective aggregate specification for the intended use.

C. Trench Backfill: Shall conform to WSDOT Section 9-03.19

D. Pipe Zone Bedding Material: Shall conform to WSDOT Section 9-03.12(3).

E. Gravel Base: Shall conform to WSDOT specification section 9-03.10.

F. Quarry Spalls: Shall conform to WSDOT specification section 9-13.1.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Do not place aggregates over frozen or spongy subgrade surfaces.

3.2 EXCAVATION

A. Excavate in accordance with Section 31 20 00

3.3 BEDDING, BACKFILL, AND FILL PLACEMENT

A. Place in accordance with Sections 31 20 00

END SECTION 31 05 16

SECTION 31 10 00

SITE CLEARING

PART 1 - GENERAL

1.1 SUMMARY

A. Section applies to the following items:

1. Clearing and grubbing
2. Stripping/stockpiling topsoil

B. Section includes:

1. Clearing and grubbing of trees, stumps, vegetation, debris, organic material and rubbish.
2. Stripping and stockpiling topsoil.
3. Protecting existing vegetation and landscaping materials not scheduled for removal.
4. Removal and legal disposal off site of material resulting from these operations.

1.2 REFERENCES

A. Washington State Department of Transportation Standard Specifications for Road, Bridge and Municipal Construction 2018 (WSDOT Publication M41-10).

B. City of Chehalis Engineering Design and Development Standards

1.3 DEFINITIONS

A. Subsoil: All soil beneath the topsoil layer of the soil profile and typified by the lack of organic matter and soil organisms.

B. Surface Soil: Soil that is present at the top layer of the existing soil profile at the Project site. In undisturbed areas, the surface soil is typically topsoil; but in disturbed areas such as urban environments, the surface soil can be subsoil.

C. Topsoil: Top layer of the soil profile consisting of existing native surface topsoil or existing in-place surface soil and is the zone where plant roots grow. Its appearance is generally friable, pervious, and black or a darker shade of brown, gray, or red than underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and other objects more than 2 inches in diameter; and free of subsoil and weeds, roots, toxic materials, or other non-soil materials.

D. Plant-Protection Zone: Area surrounding individual trees, groups of trees, shrubs, or other vegetation to be protected during construction.

E. Tree-Protection Zone: Area surrounding individual trees or groups of trees to be protected during construction.

F. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.

1.4 SUBMITTALS

A. Existing Conditions: Documentation of existing trees and plantings, adjoining construction, and site improvements that establishes preconstruction conditions that might be misconstrued as damage caused by site clearing.

1. Use sufficiently detailed photographs or videotape.
2. Include plans and notations to indicate specific wounds and damage conditions of each tree or other plants designated to remain.

1.5 QUALITY ASSURANCE

A. Pre-site Clearing Conference: Conduct conference at Project site.

1.6 PROJECT CONDITIONS

A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from the City and an approved and permitted traffic control and work zone protection plan.
2. Provide alternate routes around closed or obstructed traffic ways if required by the City.

B. Utility Locator Service: Notify utility locator service for area where Project is located before site clearing.

C. Do not commence site clearing operations until temporary erosion- and sedimentation-control and plant-protection measures are in place and until the project is covered under the current Washington State Department of Ecology Construction Stormwater General Permit.

D. The following practices are prohibited within protection zones:

1. Storage of construction materials, debris, or excavated material.
2. Parking vehicles or equipment.
3. Foot traffic.
4. Erection of sheds or structures.
5. Impoundment of water.
6. Excavation or other digging unless otherwise indicated.
7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.

E. Do not direct vehicle or equipment exhaust towards protection zones.

F. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones.

G. Soil Stripping, Handling, and Stockpiling: Perform only when the topsoil is dry or slightly moist.

PART 2 - PRODUCTS

2.1 MATERIALS

1. Obtain approved borrow soil material off-site when satisfactory soil material is not available on-site.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Protect and maintain benchmarks and survey control points from disturbance during construction.

B. Protect existing site improvements to remain from damage during construction.

1. Restore damaged improvements to their original condition, as acceptable to the City.

3.2 EXISTING UTILITIES

A. Locate and identify existing utilities. Notify the City and Engineer if existing utilities conflict with construction prior to proceeding with said construction.

3.3 CLEARING AND GRUBBING

A. Remove obstructions, trees, shrubs, and other vegetation to permit installation of new construction.

1. Do not remove trees, shrubs, and other vegetation indicated to remain or to be relocated.

B. All areas to be graded/excavated shall be cleared of deleterious matter including any existing structures, foundations, debris, and vegetation. Graded areas shall be stripped of any organic material.

C. The stripping materials may be stockpiled and later used for erosion control and landscaping as indicated on construction plans. Materials that cannot be used for landscaping shall be removed from the project site.

D. Stockpile topsoil away from edge of excavations without intermixing with subsoil. Grade and shape stockpiles to drain surface water. Cover to prevent windblown dust and erosion by water.

1. Limit height of topsoil stockpiles to 72 inches (1800 mm).
2. Do not stockpile topsoil within protection zones.
3. Dispose of surplus topsoil. Surplus topsoil is that which exceeds quantity indicated to be stockpiled or reused.
4. Stockpile surplus topsoil to allow for re-spreading deeper topsoil.

3.4 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Remove surplus soil material, unsuitable topsoil, obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of them off City property.

END SECTION 31 10 00

SECTION 31 20 00

EARTHWORK

PART 1 - GENERAL

1.1 SUMMARY

A. Section applies to the following items:

1. Place borrow
2. Grade borrow
3. Place topsoil
4. Fine grade topsoil

B. Section Includes:

1. Accomplishing indicated and required stripping, excavation, filling, compaction, sub-grade preparation, rough and finish grading, and the like.
2. Excavation and backfill of trenches as necessary for storm drain installation and other work as shown on plans.
3. Removing materials from the site which are either
   a. unsuitable for use, or;
   b. are in excess of that required.
4. Importing additional required materials.
5. Coordinating earthwork operations with other work of the project.
6. Dewatering requirements including providing, operating, maintaining and removing temporary dewatering systems for controlling surface water in the construction area.
7. Preparing subgrades for slabs-on-grade, walks, pavements, turf and grasses, and plants.
8. Subbase course for concrete walks and pavements.
9. Subbase course and base course for asphalt paving.

1.2 DEFINITIONS

A. Backfill: Soil material or controlled low-strength material used to fill an excavation.

1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches, to support sides of pipe.
2. Final Backfill: Backfill placed over initial backfill to fill a trench.

B. Base Course: Aggregate layer placed between the subbase course and concrete surfacing.

C. Bedding Course: Aggregate layer placed over the excavated subgrade in a trench before laying pipe.

D. Borrow Soil: Satisfactory material imported from off-site for use as fill or backfill.

E. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.

1. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by the City. Unauthorized excavation, as well as remedial work directed by the City, shall be without additional compensation.

F. Subgrade: Uppermost surface of an excavation or the top surface of a fill or backfill immediately below basecourse or topsoil materials.

G. Utilities: On-site underground pipes, conduits, ducts, and cables, as well as underground services within buildings.

1.3 REFERENCES

A. The publications listed below form a part of this specification to the extent referenced. Publications are referenced within the text by the basic designation only.

B. Washington State Department of Transportation Standard Specifications for Road, Bridge and Municipal Construction 2018 (WSDOT Publication M41-10).

C. City of Chehalis Engineering Design and Development Standards

1.4 SUBMITTALS

A. Submit Dewatering Plans upon request by the City.

B. Shop drawings or details pertaining to excavating and filling are not required unless otherwise shown on the Plans or if contrary procedures to Contract Documents are proposed.

C. Shop drawings or details pertaining to site utilities are not required unless required by regulatory authorities or unless uses of materials, methods, equipment, or procedures that are contrary to The Contract Documents are proposed. Do not perform work until the City has accepted required shop drawings.

PART 2 - MATERIALS

2.1 SOIL AND ROCK MATERIALS

A. Satisfactory Material: Soil and/or aggregate meeting the material specifications for said material's proposed use.

B. Unsatisfactory Material: Any material that is not satisfactory.

C. Aggregate meeting the requirements of Specification Section 31 05 16.

D. Topsoil: Topsoil shall consist of stripping material excavated from the site. Topsoil shall consist of organic surficial soil found in depth of not more than 6-inches and shall be free of grass and associated root mat.

E. Fill and Backfill: Satisfactory materials excavated from the site.

F. Imported Fill Material: Satisfactory material provided from offsite borrow areas when sufficient satisfactory materials are not available from required excavations.

2.2 EQUIPMENT

A. Transport off-site materials to project using well-maintained and operating vehicles. Once on site, transporting vehicles shall stay on designated haul roads and shall at no time endanger improvements by compacting, rutting, overloading, or pumping.

PART 3 - EXECUTION

3.1 PREPARATION

A. Pre-excavation Conference: Conduct conference at Project site prior to any excavation.

B. Identify required lines, levels, contours, datum, elevations, and grades necessary for construction as shown on the drawings.

C. Notify the City of any public utilities that are in conflict with proposed improvements.

D. Protect plant life, lawns, fences, existing structures, sidewalks, paving, and curbs, unless otherwise noted on the drawings from excavating equipment and vehicular traffic.

E. Protect benchmarks, property corners, and other survey monuments from damage or displacement. If marker needs to be removed it shall be recorded by a licensed land surveyor and replaced, as necessary, by same.

F. Remove from site, material encountered in grading operations that, in opinion of the Engineer is unsatisfactory material or undesirable for backfilling, subgrade, or foundation purposes. Dispose of in manner satisfactory to the City. Backfill areas with layers of satisfactory material and compact as specified herein.

G. Prior to placing fill in low areas, perform following procedures:

1. Drain water out of low areas with adequate pump.
2. After drainage of low area is complete, remove muck, mud, debris, and other unsatisfactory material by using acceptable equipment and methods that will keep natural soils underlying low area dry and undisturbed.

H. Locate and identify utilities that have previously been installed and protect from damage.

I. Locate and identify existing utilities that are to remain and protect from damage.

J. Maintain in operating condition existing utilities, previously installed utilities, and drainage systems encountered in utility installation. Repair surface or subsurface improvements shown on the Plans.

K. Verify location, size, elevation, and other pertinent data required making connections to existing utilities and drainage systems as indicated on the Plans.

3.2 DEWATERING

A. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.

B. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation.

1. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches.

3.3 TOPSOIL EXCAVATION

A. Cut heavy growths of grass from areas before stripping and remove cuttings with remainder of cleared vegetative material.

B. Strip topsoil to a depth of not less than 6 inches from areas that are to be filled, excavated, landscaped, or re-graded to such depth that it prevents intermingling with underlying subsoil or questionable material.

C. Stockpile topsoil in storage piles in areas shown on the Plans or where directed by the City. Construct storage piles to freely drain surface water. Cover storage piles as required to prevent windblown dust and sediment-laden runoff. Dispose of unsuitable topsoil as specified for waste material, unless otherwise specified by the City. Remove vegetative material and excess topsoil from site unless specifically noted otherwise on the Drawings.

3.4 GENERAL EXCAVATION

A. Unclassified Excavation: Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated materials may include rock, soil materials, and obstructions. No changes in the Contract Sum or the Contract Time will be authorized for rock excavation or removal of obstructions.

1. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials.

B. When performing grading operations during periods of wet weather, provide adequate dewatering, drainage, and ground water management to control moisture of soils.

C. Place satisfactory excavated material into project fill areas.

D. Unsatisfactory excavated material shall be legally disposed of offsite.

E. Perform excavation using capable, well-maintained equipment and methods acceptable to the City.

3.5 TRENCHING EXCAVATION FOR UTILITIES

A. Contact local utility companies before excavation begins. Dig trench at proper width and depth for laying pipe, conduit, or cable. Cut trench banks vertical, if possible, and remove stones from bottom of trench as necessary to avoid point-bearing. Over-excavate wet or unstable soil, if encountered, from trench bottom as necessary to provide suitable base for continuous and uniform bedding. Replace over-excavation with satisfactory material and dispose of unsatisfactory material.

B. Trench excavation sidewalls shall be sloped, shored, sheeted, braced, or otherwise supported by means of sufficient strength to protect workmen in accordance with applicable rules and regulations established for construction by the Department of Labor, Occupational Safety and Health Administration (OSHA), and by local ordinances.

C. Perform trench excavation as indicated on the Plans for specified depths. During excavation, stockpile materials suitable for backfilling in an orderly manner far enough from bank of trench to avoid overloading, slides, or cave-ins.

D. Remove excavated materials not required or not satisfactory as backfill or embankments and waste off-site or at on-site locations approved by the City.

E. Prevent surface water from flowing into trenches or other excavations by temporary grading or other methods, as required. Remove accumulated water in trenches and other excavations as specified.

F. Excavation by open cut with trenching machine or backhoe. Where machines other than ladder or wheel-type trenching machines are used, do not use clods for backfill.

G. Accurately grade trench bottom to provide uniform bearing and support for each section of pipe on bedding material at every point along entire length except where necessary to excavate for bell holes, proper sealing of pipe joints, or other required connections. Dig bell holes and depressions for joints after trench bottom has been graded. Dig no deeper, longer, or wider than needed to make joint connection properly.

H. Trench width shall be as shown on the Plans.

I. Trench depth requirements measured from finished grade or paved surface shall meet the following requirements or applicable codes and ordinances, whichever is more stringent:

1. Storm Sewer: Elevations and grades as indicated on the Plans.
2. Electrical Conduits: Elevations and grades as indicated on the Plans.

3.6 PIPE BEDDING

A. Excavate trenches for pipe or conduit to the depth and width shown on the Plans. Place bedding material, compact in bottom of trench, and shape to conform to lower portion of pipe barrel.

3.7 TRENCH BACKFILLING

A. Materials used for trench backfill shall comply with requirements as specified herein.

B. Backfill and compact in accordance with fill and compaction requirements in WSDOT Standard Specification 2-09.3(1)E, unless otherwise shown on the drawings.

C. Backfill trenches to contours and elevations shown on the Plans.

D. Do not backfill over porous, wet, frozen, or spongy subgrade surfaces.

3.8 COMPACTION

A. Compact as follows:

Percent of Maximum Laboratory Density

Location	ASTM D698	ASTM D1557
Subgrade & Fill below Structures, Pavement	98	95
Subgrade & Fill in All other Areas	95	92

B. Maintain moisture content of not less than 1 percent below and not more than 3 percent above optimum moisture content of fill materials to attain required compaction density.

C. Exercise proper caution when compacting immediately over top of pipes or conduits. Water jetting or flooding is not permitted as method of compaction.

D. Corrective Measures for Non-Complying Compaction: Remove and recompact deficient areas until proper compaction is obtained.

3.9 GRADING

A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.

1. Provide a smooth transition between adjacent existing grades and new grades.
2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.

B. Site Rough Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:

1. Turf or Unpaved Areas: Plus or minus 1 inch.
2. Walks: Plus or minus 1 inch.

C. Finish Grading

1. Correct, adjust and/or repair rough graded areas
   a. Cut off mounds and ridges
   b. Fill gullies and depressions
   c. Perform other necessary repairs
   d. Bring all sub-grades to specified contours, even and properly compacted
   e. Loosen surface to depth of 2 in. minimum
   f. Remove all stones and debris over 2 in. in any direction

3.10 BASE COURSES UNDER PAVEMENTS

A. On prepared subgrade, base course under pavement as follows:

1. Place base course 6 inches or less in compacted thickness in a single layer.

3.11 PROTECTION

A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.

B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.

1. Scarify or remove and replace soil material to depth as directed by the City; reshape and recompact.

C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.

1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.12 DISPOSAL OF SURPLUS AND WASTE MATERIALS

1. Remove surplus soil and waste materials, including satisfactory soil, unsatisfactory soil, trash, and debris, and legally dispose of them off City's property.

END SECTION 31 20 00

SECTION 31 23 33

TRENCH SAFETY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Excavation, trenching, backfilling and compacting of underground utilities.

1.2 QUALITY ASSURANCE

A. Referenced Standards:

1. Construction Standards: State of Washington Department of Transportation, “Standard Specification for Road, Bridge, and Municipal Construction – 2018 M41-10”.

1.3 DEFINITIONS

A. Excavation: All excavation will be defined as unclassified.

1.4 SUBMITTALS

A. Submit in accordance with Section 01 33 00.

B. Shop Drawings:

1. Product technical data including:

a. Acknowledgement that products submitted meet requirements of standards referenced.

b. Manufacturer’s installation instructions.

2. Submit respective pipe or conduit manufacturer’s data regarding bedding methods of installation and general recommendations.

3. Submit sieve analysis reports on all granular materials.

C. Information Submittals:

1. Trench shield (trench box) certification if employed:

a. Specific to Project conditions.

b. Re-certified if members become distressed.

c. Certification by registered professional structural engineer, registered in the state where the Project is located.

d. Engineer is not responsible to, and will not, review and approve.

1.5 SITE CONDTIONS

A. Avoid overloading or surcharging a sufficient distance back from edge of excavation to prevent slides or caving.

1. Maintain and trim excavated materials in such a manner to be as little inconvenience as possible to public and adjoining property owners.

B. Provide full access to public and private premises.

C. Protect and maintain bench marks, monuments or other established points and reference points and if disturbed or destroyed, replace items to the full satisfaction of Owner and controlling agency.

D. Verify location of existing underground utilities.

1.6 SAFETY AND PROTECTION

A. Contractor shall barricade open excavations occurring as part of this work and post warning lights. Operate warning lights during hours from dusk to dawn each day and as otherwise required by applicable safety regulations.

B. Contractor shall protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining washout, and other hazards created by all earthwork related projects.

C. Contractor shall be responsible for contracting utility companies to locate service lines prior to any excavation.

D. Contractor shall proceed with caution in the excavation so that damage to underground structures, both known and unknown, may be avoided.

E. Contractor shall take extreme precautions for the protection of utility lines and other subsurface improvements. Any improvements damaged by construction operations shall be repaired at the Contractor’s expense in compliance with the requirements of the utility owner and to the Engineer’s satisfaction.

F. Trenches and excavations shall be sheeted, shored, and braced where required in a manner consistent with established safe practices and in accordance with all applicable safety regulations.

G. Contractor shall comply with Chapter 49.17 RCW, the Washington State Industrial Safety and Health Act, if trench excavation exceeds 4 feet in depth. Contractor shall also include cost of required safety systems in all bid schedules and shall list as a separate Bid Item on the Bid Proposal Form.

H. The Contractor is solely responsible for outlining the safety procedures to be followed by his workmen. The Contractor shall provide for the safety of the public both day and night where they are exposed to the construction operation.

I. Neither the Owner, the Engineer, nor any representatives thereof shall be responsible for the procedures followed by the Contractor.

J. Contractor shall provide all sheeting, shoring, bracing, sloping and labor necessary to during excavation and backfilling.

K. Contractor shall provide private utility line location of area prior to excavation.

END OF SECTION 31 23 33

SECTION 31 25 00

EROSION AND SEDIMENTATION CONTROL

PART 1 - GENERAL

1.1 SUMMARY

A. Section applies to the following items:

1. Silt Fence
2. Inlet Protection
3. Stormwater Pollution Prevention Plan (SWPPP) Administration

B. Section includes:

1. Temporary erosion and sediment control measures for site, as shown on the plans and per the approved SWPPP.

1.2 REFERENCES

A. Washington State Department of Transportation Standard Specifications for Road, Bridge and Municipal Construction 2018 (WSDOT/WSDOT Publication M41-10)

B. Washington State Department of Ecology Stormwater Management Manual for the Puget Sound Basin

C. Temporary Erosion and Sedimentation Control Construction Stormwater General Permit (CSWGP)

D. Temporary Erosion and Sedimentation Control (TESC) plans

E. Stormwater Pollution Prevention Plan (SWPPP)

F. City of Chehalis Engineering Design and Development Standards

1.3 SUBMITTALS

A. Product Date: Manufacturer’s literature and test results on any necessary erosion and sedimentation control materials.

1.4 DURATION

A. Perform all work in accordance with CSWGP.

B. Maintain erosion and sediment control measures needed to perform the Work of this Contract, including periods when construction activities are reduced, suspended, or shut down.

C. Contractor shall maintain erosion and sediment control measures until hydroseeded grass, sod, and landscaped areas have become established and site soils are stabilized to prevent any site erosion or turbidity in site storm water runoff.

1.5 MAINTENANCE

A. Perform all work in accordance with CSWGP.

B. Monitor and maintain erosion and sediment control measures installed for the duration of the project.

1. Repair or replace any control measures that become damaged or ineffective.
2. Take measures to prevent any erosion or sediment control problems from occurring both on the project site and off site.

PART 2 - PRODUCTS

2.1 SILT FENCES

A. Filter fabric material and installation shall conform to WSDOT Standard Specification section 8-01.3(9)A2.

2.2 INLET PROTECTION

A. Inlet Protection material and installation shall conform to WSDOT Standard Specification section 8-01.3(9)D.

2.3 WATER

A. Provide water for dust control, including the following:

1. Water truck with provisions for uniformly spreading/spraying water.
2. Connections, fittings and equipment required for connection to water source.
3. Make all arrangements and pay any fees associated with connection to water source, cost of water, etc.

PART 3 - EXECUTION

3.1 COORDINATION

A. Review, coordinate and accommodate work of other Sections that interface with, affect, or are affected by the work of this Section so as to facilitate the execution of the overall work of this project in a coordinated and efficient manner.

B. Coordinate exact layout of erosion and sediment control structures to facilitate construction operations and work on the site.

C. The Contractor shall prepare the Stormwater Pollution Prevention Plan (SWPPP) for this project in compliance with the CSWGP requirements and submit copies of the SWPPP to the City and Engineer.

D. Contractor shall apply for and receive coverage under the CSWGP prior to any construction activity.

E. The Contractor shall perform all work in this Contract in compliance with the SWPPP requirements and shall use adaptive management practices to meet all water quality standards.

F. The cost of preparation and maintenance of the SWPPP and CSWGP coveage in accordance with Ecology's requirements shall be included in the Contractor's Mobilization, and therefore no additional compensation will be allowed.

3.2 GENERAL

A. Perform all work in accordance with the CSWGP.

B. During construction the runoff of stormwater and wastewater flows shall be controlled and treated to minimize water quality impacts. The Contractor shall plan and execute the work in a manner which protects the project, and downstream water ways. Runoff from undisturbed areas shall be diverted from areas of construction activity by utilizing drainage ways as much as possible. Where this is not possible, and as practicable, diversion dikes and swales shall be constructed, so runoff from undisturbed areas will not be deposited or stored in or alongside drainage ways where the materials can be eroded by storm runoff.

C. Stormwater from disturbed areas within the limits of construction shall be collected and treated before releasing. The extent of erosion control measures required will depend on the extent of the Contractor's earthwork and ground cover disturbance and resulting erosion potential. The Contractor is responsible for meeting water quality criteria.

3.3 GROUND COVER

A. Perform all work in accordance with the CSWGP.

B. Do not clear any areas until construction is ready to begin.

3.4 STOCKPILE PROTECTION

A. Perform all work in accordance with the CSWGP.

B. Temporary stockpile slopes shall not exceed 2:1.

C. Grade slopes of stockpile uniformly smooth with a slightly concave shape to prevent hollow spots that would allow the plastic sheeting cover to ripple and flap in the wind.

D. Cover stockpiles with plastic sheeting; install sheeting to fit tight to shape of stockpile free of wrinkles or loose areas; overlap seams two feet and tape down exposed edges continuously.

1. Install sheeting in largest sections possible with minimum number of seams.
2. Secure plastic sheet with stakes, rope and sandbags to prevent it from blowing away or from any seam from coming loose.
3. Space stakes and sandbags at no more than a 15 foot grid or as required to secure sheeting.
4. Secure each sandbag with a stake; run rope between each stake (under sandbags).
5. Place stakes and sandbags along all seams.
6. Entire installation shall withstand high winds for an entire winter without the plastic sheeting coming loose or blowing away.

3.5 EARTHWORK

A. Perform all work in accordance with the CSWGP.

B. Do not cause foreign or waste material to enter surface waters. Materials shall be carefully excavated and moved to an approved spoil or waste area.

C. Earthwork slopes shall be left in a condition that will minimize erosion during rainfall. This includes temporary erosion control as specified herein.

3.6 DUST CONTROL

A. Perform all work in accordance with the CSWGP.

B. Control and prevent the production of airborne dust due to wind or construction equipment traffic at any time during construction by watering the work area and site, comply with all local and State air quality regulations.

C. Do not permit conditions on the site that would allow airborne dust resulting from the work of this project to drift onto adjacent properties.

D. Wet down unpaved roadways used for construction traffic to prevent dust.

3.7 SITE RESTORATION

A. As soon as practical after completion of a portion of the Work, or when a work or waste area is no longer required, commence site restoration.

3.8 PROTECTION, MAINTENANCE AND REPAIR

A. Perform all work in accordance with the CSWGP.

B. Maintain and repair erosion control facilities and protective fencing throughout construction until Final Completion.

C. Protection:

1. Where possible, maintain natural/existing vegetation for silt control.
2. Prevent silt-laden water from leaving the site or from entering offsite storm sewer system.
3. Stabilize slope, cut or fill areas where work is stopped for more than 30 days by mulching, polyethylene sheeting or other method to prevent erosion and sediment transport.
4. Keep pavements, roadways, sidewalks, emergency access clean from construction activities. Keep paved areas clean using mechanical sweeping equipment and hand tools as applicable; pavement washing is not allowed.

D. Supplementary Measures: Provide additional silt and erosion control measures as required to protect soils and prevent silt-laden runoff from leaving the project site.

E. Maintenance: Monitor and maintain temporary silt and erosion control measures for the duration of the project.

F. Inspection: Inspect the entire system to ensure proper operation a minimum of once per week, during and after storms and prior to weekends and holidays.

3.9 REMOVAL

A. Perform all work in accordance with the CSWGP.

B. Remove temporary erosion control facilities only after site soils are stabilized to prevent any erosion or turbidity in storm water runoff from the site during a heavy rain storm event.

END SECTION 31 25 00

SECTION 32 12 16

HOT MIX ASPHALT PAVING

PART 1 - GENERAL

1.1 SUMMARY

A. Section applies to the following items:

1. Hot Mix Asphalt (HMA) Sidewalk
2. HMA Driveway

B. Section Includes:

1. Asphalt concrete binder and surface course.

1.2 REFERENCES

A. The publications listed below form a part of this specification to the extent referenced. Publications are referenced within the text by the basic designation only.

B. Washington State Department of Transportation Standard Specifications for Road, Bridge and Municipal Construction 2018 (WSDOT Publication M41-10) for all asphalt paving.

C. City of Chehalis Engineering Design and Development Standards.

1.3 QUALITY ASSURANCE

A. Asphalt Paving Regulatory Requirements: Comply with WSDOT Section 5-04, HMA Class ½-inch PG 64-22 asphalt for asphalt paving work or the following, whichever is more stringent.

1. Warranty:
2. Time Period: One year after project final completion
3. Note that work correction is to include aggregate separation, soft spots, and excess porosity.
4. Repair cracks; repair unsatisfactory elevation irregularities immediately upon notification; replace any paving not draining properly.
5. Pavement Repair: One year after the date of project final completion, the Owner, the Architect and the Contractor shall walk the site to identify areas of asphalt pavement cracking, raveling or other types of pavement failure. The Contractor shall repair the identified areas of failure in a method to prevent continued failure in accordance with WSDOT specification 5-04.3(4)C.

1.4 QUALIFICATIONS

A. Manufacturer Qualifications: Manufacturer shall be a paving-mix manufacturer registered with and approved by WSDOT.

1.5 SUBMITTALS

A. Submit mix designs to the Civil Engineering Consultant of Record at least 30 days prior to beginning asphalt paving operations. Mix designs over one year old will not be accepted by the City. Mix design submittal shall follow the format as recommended by Washington State Department of Transportation Standard Specifications for Road, Bridge and Municipal Construction 2018 (WSDOT Publication M41-10) for all asphalt paving.

B. and include the following:

1. Type and Name of mix.
2. Gradation Analysis.
3. Optimum asphalt content.
4. Grade of asphalt binder.
5. Volumetric properties.
6. References to the WSDOT 2018 Standard Specifications for each material when applicable.

C. Submit approved mix designs and laboratory test results to the City signed by the materials producer and Contractor certifying materials and mix ratios conform to the requirements specified herein.

1.6 PROJECT CONDITIONS

A. Weather Limitations:

1. Apply prime and tack coats when ambient or base surface temperature is above 40 F, and when temperature has been above 35 F for 12 hours immediately prior to application. Do not apply when base is wet, contains excess moisture, during rain, or when frozen.
2. Construct asphalt concrete paving when ambient temperature is above 40 F.

PART 2 - PRODUCTS

2.1 ASPHALT MATERIALS

A. Asphalt Pavement: Provide dense, hot laid, hot mix asphalt plant mixes approved by WSDOT. Provide HMA Class ½" PG 64-22, thickness as indicated on plans, conforming to WSDOT Standard Specification 5-04.

2.2 AGGREGATE MATERIALS

A. Aggregates:

1. General: Use locally available materials and gradations that meet WSDOT 2018 Standard Specification requirements and exhibit satisfactory record of previous installations.
2. Recycled Asphalt Pavement Materials: The use of recycled asphalt pavement materials in the proposed mix design is acceptable provided that said materials conform to the requirements of Section 9-03.21 of the WSDOT Standard Specifications.

2.3 ACCESSORIES

A. Joint Sealant: Shall conform to the requirements of Section 9-04 of WSDOT Standard Specifications.

B. Asphalt Pavement Crack Sealant: Shall conform to the requirements of WSDOT Section 5-04.3(4)A.

2.4 MIXES

A. Asphalt Pavement: Provide dense, hot-laid, hot-mix asphalt plant mixes approved by WSDOT. Provide HMA Class ½ -inch PG 64- 22, thickness as indicated on the Plans, conforming to WSDOT Standard Specification 5-04.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify utilities indicated under paving are installed with excavations and trenches backfilled and compacted.

B. Verify compacted subgrade is dry and ready to support paving and imposed loads.

1. All exposed, compacted subgrade for pavement section crushed surfacing materials shall be verified by a minimum of one nondestructive field density test (i.e. Nuclear Densitometer) per 2,000 square feet, but in no case less than three (3) tests. If additional compaction is required, retesting of subgrade shall be at contractor's expense.

C. Verify gradients and elevations of base are correct.

3.2 BASE COURSE

A. Aggregate Base Course shall be uniformly spread upon the prepared Subgrade to the depth, width, and cross-section shown in the Plans. Construction methods used shall meet the applicable requirements of WSDOT Standard Specification Section 4-04.3.

3.3 SURFACE PREPARATION

A. Examination: Verify that subgrade is dry and in suitable condition to support paving and imposed loads. Proof-roll to locate areas that are unstable or that require further compaction. Advise Engineer of unsatisfactory conditions. Do not begin paving work until deficient subgrade and base course areas have been corrected and are ready to receive paving. Proceed with paving only after unsatisfactory conditions have been corrected.

B. Loose Material: Remove from compacted subbase surface immediately before applying asphalt-aggregate mixture.

C. Soil Sterilant/Herbicide: Supply and apply per WSDOT Standard Specification Section 5- 04.3(4)B

D. Tack Coat: Per WSDOT Standard Specification Section 5-04.3(4)

3.4 PLACEMENT

A. General: Place asphalt cement concrete per Section 5-04 of WSDOT Standard Specifications for HMA.

3.5 COMPACTION

A. Compact HMA in accordance with Standard Specification 5-04.3(10).

3.6 FIELD QUALITY CONTROL

A. General: The Contractor shall coordinate and schedule the City's testing representative to be onsite for temperature testing of the mix prior to and during contractor’s placement. Should temperatures be noncompliant, the truck shall be rejected at no additional cost to the City. Testing service may test in place asphalt concrete courses for compliance with requirements for compaction, thickness (five core tests) and surface smoothness in locations selected by Engineer. Patch holes from test coring. Repair or remove and replace unacceptable paving as directed by Engineer. Each failed test may require up to ten (10) additional tests at Contractor's expense.

B. Level of compaction attained will be determined as an average of not less than five (5) nuclear density gauge tests taken by testing service on day mix is placed (after completion of finish rolling) at randomly selected locations within each lot. Quantity represented by each lot will be not greater than single day's production or approximately 40 tons, whichever is less. Cores may be used as alternate to nuclear density gauge tests.

C. Thickness: In place compacted thickness will not be acceptable if exceeding following allowance variation from required thickness:

   1. First Lift or Base Course: 3/8", plus or minus.
   2. Second Lift or Surface Course: 1/8” plus or minus.

D. Surface Smoothness: Test finished surface of each asphalt concrete course for smoothness using ten-foot straightedge applied parallel with, and at right angles to, centerline of paved area. Surfaces will not be acceptable if exceeding the following tolerances for smoothness:

   1. Surface Course:
      a. 1/8" parallel to centerline
      b. 1/4" transverse to centerline
      c. 3/16" when no discernible centerline
   2. The Contractor shall provide the straightedge equipment and labor to be present during the City's testing agency surface smoothness testing.

3.7 PROTECTION OF FINISHED WORK

A. Immediately after placement, protect paving from mechanical traffic until surface temperature is less than 140 degrees F.

END SECTION 32 12 16

SECTION 32 13 13

PORTLAND CEMENT CONCRETE PAVING

PART 1 - GENERAL

1.1 SUMMARY

A. Section applies to the following items:

1. Portland Cement Concrete (PCC) Sidewalks

1.2 REFERENCES

A. Washington State Department of Transportation Standard Specifications for Road, Bridge and Municipal Construction 2018 (WSDOT Publication M41-10).

B. City of Chehalis Engineering Design and Development Standards

1.3 QUALITY ASSURANCE

A. Concrete Standards: Comply with provisions following standards except where requirements that are more stringent are indicated herein:

1. Section 8-14 of the WSDOT 2018 Standard Specifications.

1.4 SUBMITTALS

A. General: Submit the following:

1. Design mixes for the concrete. Include revised mix proportions when characteristics of materials, project conditions, weather, test results, or other circumstances warrant adjustments.
2. Material certificates may be submitted in lieu of material laboratory test reports when permitted by the City. Material certificates shall be signed by the manufacturer and the Contractor certifying that each material item complies with or exceeds requirements.

B. Contractor shall provide one 4’ x 4’ mockup for each finishing pattern for Owner’s approval.

1.5 WARRANTY

A. Time Period: One year after project final completion.

1. Replace cracked, unsatisfactory finish work, or irregularities immediately upon notification.

PART 2 - PRODUCTS

2.1 GENERAL

A. Sidewalks shall be commercial Class 4000 concrete per Section 6-02 of WSDOT.

B. Concrete Mix: Comply with requirements of Section 5-05.3(5) of WSDOT Standard Specifications for Road, Bridges, and Municipal Construction 2018.

2.2 FORMS

A. Forms shall be metal or wood and comply with Section 8-14.3(2) of the WSDOT Standard Specifications.

2.3 CONCRETE MATERIAL

A. Materials shall comply with WSDOT Standard Specification 8-14.2.

PART 3 - EXECUTION

3.1 PLACING AND FINISHING

A. Refer to plans.

B. Comply with the requirements of Section 8-14.3(3) of WSDOT Standard Specifications.

C. Finishing patterns shall be as indicated in contract plans.

3.2 CURING

A. Comply with the requirements of Section 8-14.3 of WSDOT Standard Specifications.

3.3 CONSTRUCTION JOINTS

A. Whenever placing concrete is suspended for 30 minutes or more, provide a construction joint located at the nearest control joint or expansion joint. Expansion and Contraction Joints to be spaced as shown on the plans. They shall be installed so that expansion joint material is ¼ inch below the surface of the concrete.

END SECTION 32 13 13

SECTION 33 40 00

STORM DRAINAGE

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes the following items:

1. Catch Basin Type 1
2. Catch Basin Type 2
3. 4” Storm Sewer Pipe
4. 6” Storm Sewer Pipe
5. 8” Storm Sewer Pipe
6. 12” Storm Sewer Pipe
7. 18” Storm Sewer Pipe
8. Testing Storm Sewer Pipe
9. Drain Basins
10. Trench Drains

1.2 REFERENCES

A. Washington State Department of Transportation Standard Specifications for Road, Bridge and Municipal Construction 2018 (WSDOT Publication M41-10).

B. Standard Plans Washington State Department of Transportation Standard Plans for Road, Bridge, and Municipal Construction (most current versions).

C. City of Chehalis Engineering Design and Development Standards

D. Americans with Disabilities Act (ADA)

1.3 SUBMITTALS

A. No installation of the material shall be made until written approval has been obtained from the Engineer. Approval of materials and equipment shall in no way obviate compliance with the plans and specifications.

B. Record drawings

1. One complete set of drawings will be provided by Contractor to Engineer as record drawings which shall be separate, clean, blueline prints reserved for the purpose of showing a complete picture of the work as actually installed. The contractor shall coordinate the record drawing requirements with the City’s Utility Inspector.
2. These drawings shall also serve as work progress report sheets and the Contractor shall make any notations, neat and legible, thereon daily as work proceeds. These drawings shall be available for inspection at all times and shall be kept at the job.

3. All buried piping and indicated future connections, exterior of any building, shall be located both by depth and by accurate measurement from a permanently established landmark. All notations on record drawings of buried piping shall be made before any backfilling is started.

4. At completion of the work, these record drawings shall be signed by the Contractor, dated, and returned to the Engineer.

C. Storm Structure Verification Survey:

1. Contractor shall submit to the Engineer an as-built survey, prepared by a Licensed Professional Surveyor, of each storm drainage structure installed by the Contractor during construction. Submit the survey on paper stamped by a Licensed Professional Surveyor and in digital format (AutoCAD 2018). The storm structure verification survey shall include graphic horizontal location of the center of each structure (to the nearest tenth of a foot) relative to the property boundaries and right of ways (as prepared by the project surveyor) and the vertical elevations of all structure lids and grates and pipe inverts to the nearest five hundredths of a foot. Changes during construction to cleanout locations or elevations shall be noted on the Contractor's Record Drawing submittal.

PART 2 - PRODUCTS

2.1 STORM SEWER PIPE

A. Pipe Requirements

1. ADS N-12 plain end pipe or approved equal.
   a. Pipe shall meet AASHTO M252, Type S.

B. Joint Performance

1. Pipe shall be joined with coupling bands covering at least two full corrugations on each end of the pipe. Standard connections shall meet or exceed the soil-tight requirements of AASHTO M252, AASHTO M294, or ASTM F2306. Gasketed connections shall incorporate a closed-cell synthetic expanded rubber gasket meeting the requirements of ASTM D1056 Grade 2A2. Gaskets, when applicable, shall be installed by the pipe manufacturer.

C. Fittings

1. Fittings shall conform to AASHTO M252, AASHTO M294 or ASTM F2306.

D. Materials Properties

E. Beveled end sections shall be per WSDOT Standard Plan B-70.20-00.

2.2 COUPLINGS AND JOINTS

A. Tees on existing pipe shall be connected by core drilling and flexible connections.

B. Pipe to pipe connections shall be made with a flexible gasketed coupling, adapter or coupling-adapter to make a watertight joint.

2.3 PIPE BEDDING AND BACKFILL MATERIAL

A. Bedding and backfill material shall conform to Section 31 05 16 “Aggregates” and the plans.

2.4 CONCRETE CATCH BASINS

A. Type 1 Catch Basins: Per WSDOT Standard Plan B-5.20-02.

B. Type 2 Catch Basins: Per WSDOT Standard Plan B-10.20-02.

C. Frames and grates as applicable per WSDOT Standard plans: B-30.10-02, B-30.20-03, B-30.50-02, B-30.70-03, B-30.80-00.

2.5 DRAIN BASINS

A. General: PVC surface drainage inlets shall include the drain basin type as indicated on the contract drawing and referenced within the contract specifications. The ductile iron grates for each of these fittings are to be considered an integral part of the surface drainage inlet and shall be furnished by the same manufacturer. The surface drainage inlets shall be as manufactured by Nyloplast a division of Advanced Drainage Systems, Inc., or prior approved equal.

B. Materials: The drain basins required for this contract shall be manufactured from PVC pipe stock, utilizing a thermoforming process to reform the pipe stock to the specified configuration. The drainage pipe connection stubs shall be manufactured from PVC pipe stock and formed to provide a watertight connection with the specified pipe system. This joint tightness shall conform to ASTM D3212 for joints for drain and sewer plastic pipe using flexible elastomeric seals. The flexible elastomeric seals shall conform to ASTM F477. The pipe bell spigot shall be joined to the main body of the drain basin or catch basin. The raw material used to manufacture the pipe stock that is used to manufacture the main body and pipe stubs of the surface drainage inlets shall conform to ASTM D1784 cell class 12454.

C. Installation: The specified PVC surface drainage inlet shall be installed using conventional flexible pipe backfill materials and procedures. The backfill material shall be crushed stone or other granular material meeting the requirements of class 1, class 2, or class 3 material as defined in ASTM D2321. Bedding and backfill for surface drainage inlets shall be well placed and compacted uniformly in accordance with ASTM D2321. The drain basin body will be cut at the time of the final grade. No brick, stone or concrete block will be required to set the grate to the final grade height. For load rated installations, a concrete slab shall be poured under and around the grate and frame. The concrete slab must be designed taking into consideration local soil conditions, traffic loading, and other applicable design factors. For other installation considerations such as migration of fines, ground water, and soft foundations refer to ASTM D2321 guidelines.

2.6 TRENCH DRAINS

A. Zurn Z886 6-1/4” wide reveal trench drain system with sloped bottom or approved equivalent. Grates shall be ductile iron, ADA compliant, and locking.

2.7 TRACER TAPE AND TONING WIRE

A. Utility pipe tracer tape and toning wire material and installation shall be per City of Chehalis Code.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Site and Drawings: Carefully examine the site and compare the drawings with existing conditions. By the act of submitting bids, the Contractor shall be deemed to have made such examination and to have accepted such conditions, and to have made allowance therefore in preparing his figure.

B. Verification of Existing Elevations: Verify all connection elevations prior to laying pipe.

C. Verification of Dimensions: Before proceeding with any work, the Contractor shall carefully check and verify all dimensions, sizes, etc. and shall assume full responsibility for the fitting-in of his equipment and to the structure. Where apparatus and equipment have been taken from typical equipment of the class indicated, the Contractor shall carefully check the drawings to see that the equipment he contemplates installing will fit into the spaces.

3.2 INSTALLATION

A. Drainage Structure: Construct catch basins, culverts, manholes, and other drainage structures at locations, and to the design and dimensions indicated. Set covers and grates flush with finished surface in paved and concrete areas or 3 inches above finished grade in landscaped areas. Exposed concrete work shall match surrounding concrete finish as indicated in contract plans with rounded corners and edges finished plumb and true. Provide grates, frames, and covers for catch basins as detailed and indicated.

B. ADS N-12 Pipe:

1. Installation shall be in accordance with ASTM D2321 and ADS recommended installation guidelines, with the exception that minimum cover in trafficked areas for 4- through 48-inch diameters shall be one foot.

C. Excavation, Bedding, and Backfill:

1. Trenching: The length of trench excavation in advance of pipe laying shall be kept to a minimum and in no case shall exceed 100 feet unless specifically authorized by the Engineer.
2. Excess excavated trench material shall be removed and disposed of off-site (per the conditions of all local ordinances and regulations for dumping/filling) or if deemed suitable by the Engineer, shall be placed adjacent to the trench in piles so that the toe of the slope is at least two feet from the edge of the trench. Free access shall be maintained to all fire hydrants, water valves, and meters.

3. Where trench excavation equals or exceeds a depth of 4 feet, the contractor shall provide, construct, maintain and remove, as required, safety systems that meet the requirements of the Washington Industrial Safety and Health Act, Revised Code of Washington (RCW) 49.17, including Washington Administrative Code (WAC) 296-155, and Occupational Safety and Health Administration (OSHA).
4. Excavation for structures: shall be in accordance with WSDOT Section 7-05 of the Standard Specifications.
5. Bedding: Bedding shall be installed in accordance with WSDOT Standard Specification Section 7-04 of the Standard Specifications and the Contract Documents. Bedding shall provide uniform support along the entire pipe barrel, without load concentration at joint collars or bells. No blocking of any kind shall be used to adjust the pipe to grade except when used with embedment concrete. Bell holes shall be dug as required to ensure uniform support along the pipe barrel. Bedding disturbed by pipe movement or by removal of shoring or movement of a trench shield or box shall be reconsolidated prior to backfill.
6. Laying Pipe: Shall be in accordance with Section 7-04 of the Standard Specifications. The contractor shall comply with manufacturer's recommended tolerance for eccentricity.
7. Line and Grade: Variance from established line and grade shall not be greater than one thirty-second (1/32) of an inch per inch of pipe diameter and not to exceed one-half (1/2) inch, provided that such variation does not result in a level or reverse sloping invert; provided also, that variation in the invert elevation between adjoining ends of pipe, due to non-concentricity of joining surface and pipe interior surface, does not exceed one sixty-fourth (1/64) per inch of pipe diameter, or one-half (1/2) inch maximum.
8. Connections: Connections to catch basins and drain basins shall be made in accordance with the contract documents. Pipe branches, stubs or other open ends which are not to be immediately connected shall be capped or plugged.
9. Backfill: Shall be in accordance with Section 7-04 of the Standard Specifications; material shall be per Section 31 05 16 "Aggregates". Backfill shall be placed in successive layers with the first layer not to exceed 2 feet above the pipe, and the following layers not exceeding 12 inches in loose thickness, with each layer compact to the required density. Trenches shall be backfilled as soon after the pipe laying as possible. Backfill trenches in the vicinity of catch basins, manholes, or other appurtenances will not be permitted until the masonry has become thoroughly hardened. Backfill above the pipe zone will be accomplished in such a manner that the pipe will not be shift out of position nor damaged by impact or overloading

D. Miscellaneous:

1. Removal of Water: The contractor shall at all times provide and maintain ample means and devices to remove and dispose of all water entering the trench excavation during the process of laying the pipe.
2. Preparation of Pipe: All pipe and fittings shall be carefully inspected before being laid and cracked, broken or defective pipe shall not be used in the work.

E. Restoration: At minimum, road paved areas shall be restored to existing thickness using like materials or per plans, whichever is more stringent.

F. Re-vegetation: It shall be the Contractors responsibility to restore all disturbed areas to their original state. Rough grade, compact earth, fine grade, place topsoil, fertilize and seed disturbed areas and perform all other necessary operations in accordance with specification section 31 20 00.

3.3 CLEANING AND TESTING

A. General: Cleaning and testing of the storm drainage conveyance piping systems shall be per Section 7-04 of the Standard Specifications. All new lines shall be subjected to testing after installation. Tests shall be exfiltration test, or air pressure test. Conduct tests in the presence of the City's representative.

B. Cleanliness of Site: During progress of work, keep premises reasonably free of debris and waste materials.

C. Removal of Debris: Upon completion and before final acceptance of work, remove all debris, rubbish, left-over materials, tools, and equipment from site.

D. Prior to acceptance of work, each line and structure shall be cleaned to ensure that the entire system is clean and free of obstructions of any nature and provide written certification attesting thereto. Mechanically remove all sediment displaced from lines from the system, and do not flush downstream.

END SECTION 33 40 00

SECTION 33 70 00

ELECTRICAL UTILITIES

PART 1 - GENERAL

1.1 SUMMARY

A. Section applies to the following bid items:

1. Conduit
2. Junction Boxes

1.2 REGULATIONS AND CODES

A. All electrical equipment shall conform to the standards of the National Electrical Manufacturers Association (NEMA), Electric Utility Service Equipment Requirements Committee (EUSERC), and California Department of Transportation document entitled Transportation Electrical Equipment Specifications (TEES). In addition to the requirements of these Specifications and the Plans, all material and Work shall conform to the requirements of the National Electrical Code, hereinafter referred to as the Code, and any WACs and local ordinances, which may apply.

B. Wherever reference is made in these Specifications to the Code, the rules, or the standards mentioned above, the reference shall be construed to mean the code, rule, or standard that is in effect on the Bid advertisement date.

C. Persons performing electrical Work shall be certified in accordance with RCW 19.28.161. Proof of certification shall be supplied to the Engineer prior to the performance of the Work.

1.3 REFERENCES

A. The following electrical industry codes and standard procedures are listed for reference purposes:

1. Air Movement and Control Association (AMCA), 30 West University Drive, Arlington Heights, IL 60004.
2. American Association of State Highway and Transportation Officials (AASHTO), 444 North Capitol Street NW, Suite 225, Washington, D.C. 20001.
3. American National Standards Institute (ANSI), 70 East 45th Street, New York, NY.
4. American Society for Testing and Materials (ASTM), 1916 Race Street, Philadelphia, PA.
5. American Wood Protection Association (AWPA), 836 Seventeenth Street, Washington, D.C.
6. Bell Company Research and Evaluation (Bellcore) 31220 La Baya DR, Westlake Village, CA 91362.
7. Edison Electric Institute (EEI), 420 Lexington Avenue, New York, NY.
8. Electronics Industries Alliance (EIA), 101 Pennsylvania Avenue, Washington, D.C.

9. Electric Utility Service Equipment Requirements Committee (EUSERC).
10. Federal Communications Commission (FCC), 445 12th SW, Washington, D.C. 20554.
11. International Municipal Signal Association (IMSA), PO Box 539, 1115 North Main Street, Newark, NY 14513.
12. Institute of Electrical and Electronics Engineers (IEEE), 17th Floor, New York, NY 10016
13. International Telephony Communications Union (ITU) Place des Nations CH 1211 Geneva 20 Switzerland.
14. Institute of Transportation Engineers (ITE), 2029 K Street, Washington, D.C. 20005.
15. Insulated Power Cable Engineers' Association (IPCEA), 283 Valley Road, Montclair, NJ.
16. National Electrical Manufacturers' Association (NEMA), 155 East 44th Street, New York, NY.
17. National Fire Protection Association – National Electrical Code (NEC), 470 Atlantic Avenue, Boston, MA.
18. National Television Standards Committee (NTSC), 445 12th SW, Washington, D.C. 20554.
19. National Transportation Communications for ITS Protocol (NTCIP).
20. Rural Utilities Service (RUS), 1400 Independence Avenue,

1.4 SUBMITTALS

A. All submittals shall be in accordance with Section 01 33 00

PART 2 - PRODUCTS

2.1 CONDUIT

A. Conduit shall be schedule 80 rigid polyvinyl chloride (PVC) or high density polyethylene (HDPE).

B. Unless otherwise indicated in the Plans the same type of conduit shall be used for the entire length of the run.

C. Care shall be used in excavating, installing, and backfilling, so that no rocks, wood, or other foreign material will be left in a position to cause possible damage.

D. PVC conduit ends shall be terminated with end bell bushings. PVC or HDPE conduit entering cable vaults and pull boxes shall terminate with the end bell flush with the inside walls of the Structure.

E. Non-metallic conduit bends, where allowed, shall conform to Article 352.24 of the Code. Eighteen-inch radius elbows shall be used for PVC conduit of 2-inch nominal diameter or less. Standard sweep elbows shall be used for PVC conduit with greater than 2-inch nominal diameter unless otherwise specified in the Plans. In nonmetallic conduit less than 2-inch nominal diameter, pull ropes or flat tapes for wire installation shall be not less than ¼-inch diameter or width. In nonmetallic conduit of 2-inch nominal diameter or larger, pull ropes or flat tapes for wire installation shall be not less than ½-inch diameter or width. The conduit run shall be extended to the associated outlets with the same schedule HDPE or PVC conduit. Entry into associated junction box outlets shall be with the same schedule HDPE or PVC conduit and elbows.

F. PVC conduit shall be assembled using the solvent cement specified in WSDOT Section 9-29.1.

G. Conduit ends shall be protected with a snug fitting plastic cap until wiring is started.

H. Conduit caps, end bells and the section of PVC between the coupling and end bell bushing in cabinet foundations shall be installed without glue.

I.

PART 3 - EXECUTION

3.1 GENERAL

A. All workmanship shall be complete and in accordance with the latest accepted standards of the industry.

3.2 EXCAVATION AND BACKFILLING

A. The excavations required for the installation of conduit shall be performed in a manner that prevents damage to the streets, sidewalks, and other improvements. The trenches shall not be excavated wider than necessary for the proper installation of the electrical accessories and foundations. Excavating shall not be performed until immediately before installation of conduit and other accessories. The material from the excavation shall be placed where the least interference to vehicular and pedestrian traffic, and to surface drainage, will occur.

B. All excavated material shall be removed and disposed of by the Contractor in accordance with Specification Section 31 20 00, or as ordered by the Engineer.

C. The excavations shall be backfilled in conformance with the requirements of 31 20 00.

3.3 REMOVING AND REPLACING IMPROVEMENTS

A. Improvements such as sidewalks, curbs, gutters, Portland cement concrete and hot mix asphalt pavement, bituminous surfacing, base material, and any other improvements removed, broken, or damaged by the Contractor, shall be replaced or reconstructed with the same kind of materials as found on the Work or with other materials satisfactory to the Engineer.

B. Contractor shall not remove or replace any improvements previously constructed as part of this project.

3.4 GENERAL CONDUIT INSTALLATION REQUIREMENTS

A. The ends of all conduit, metallic and nonmetallic, shall be reamed to remove burrs and rough edges. Field cuts shall be made square and true. The ends of unused conduits shall be capped. When conduit caps are removed, the threaded ends of metal conduit shall be provided with approved conduit bushings and non-metal conduit shall be provided with end bells.

B. Reducing couplings will not be permitted.

C. The conduit shall be installed for future use, and a 550-pound minimum tensile strength pull rope shall be installed. The pull string shall be attached to duct plugs or caps at both ends of the conduit.

3.5 CONDUIT PLACEMENT

A. Conduit shall be laid so that the top of the conduit is a minimum depth of:

1. 24-inches below the bottom of curb in the sidewalk area.
2. 24-inches below the top of the untreated surfacing on a Roadbed.
3. 24-inches below the finish grade in all other areas.

B. Conduit entering through the bottom of a junction box shall be located near the end walls to leave the major portion of the box clear. At all outlets, conduit shall enter from the direction of the run, terminating 6 to 8-inches below the junction box lid and within 3-inches of the box wall nearest its entry location.

C. Conduit runs shown in the Plans are for Bidding purposes only and may be relocated with approval of the Engineer, to avoid obstructions.

3.6 OPEN TRENCHING

A. When open trenching is allowed, trench construction shall conform to the following:

1. Trench depth shall provide a minimum cover for conduit of 24-inches below the top of the roadway base.
2. Trench width shall be 8-inches or the conduit diameter plus 2-inches, whichever is larger.
3. On new construction, conduit shall be placed prior to placement of base course for pavement.

END SECTION 33 70 00

SECTION 11 6824 - OUTDOOR ATHLETIC EQUIPMENT & FURNISHINGS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Include all labor, material, equipment, transportation, and services to install various items as shown on the drawings and herein specified.
2. Softball Equipment
   Furnish and install one (1) pitcher plate and one (1) home plate at each softball field. (4 fields total)
   Furnish and install one (1) pitcher plate and one (1) home plate at each softball field bullpen. (2 fields total)
   Furnish and install one (1) set of softball base anchors, plugs, and bases including safety base at first base at each field (4 fields total)

B. Related Sections:

1. Sitework Concrete
2. 32 18 22 Field Imported Sands
3. 32 18 24 Infilled Synthetic Turf
4. 32 18 26 Field Seeding & Establishment

1.2 SUBMITTALS

A. Submit under provisions of Section 01 3300.

B. Submit for approval: Manufacturer's product information, installation instructions and maintenance recommendations for all components.

C. Provide all components and parts for a complete assembly of base, anchors, stanchions or other components required.

PART 2 - MATERIALS

2.1 PLATES, BASES, ANCHORS, AND PLUGS

A. Bases shall include Hollywood type ground anchors. All bases and plates shall have attachment to anchors.

B. All bases shall conform to the size and dimension requirements of Little League and shall be break away with anchor attachments. Posts shall be male, and ground anchor sleeves shall be female.

C. Provide rubber plugs for each base insert for use when bases are not in place. Plugs shall be a maximum 2" square, with black rubber top and shall insert into female anchor sleeve. Base plugs shall be Schutt Sports Base Plug with Indicator (set of 3) # 12916575, Schutt Sports, Litchfield, IL, 1-(866) 4SCHUTT.

D. Manufacturer's Reference: Plates and bases shall be Schutt or approved equal.

Item	
Quick Release Hollywood Impact Double First Base	Schutt 12906060
Provide stanchion/base for each base location	
Quick Release Base	Schutt 129060
Ground Anchors	Schutt 12916550
All Bury Home Plate	Schutt 12908170
4-Sided Pitcher's Plate	Schutt 12808500

PART 3 - EXECUTION

3.1 BASE INSTALLATION

A. Install base anchors and plates in accordance with the manufacturer's instructions and as shown in the details. Carefully locate bases and plates within 1/2"of dimensions shown on the plans.

END OF SECTION 11 68 24

SECTION 31 22 16 – FIELD SUBGRADE ESTABLISHMENT

PART 1 - GENERAL

1.1 SCOPE OF WORK

A. Furnish all labor, material and equipment for the earthwork related to establishment of a finished subgrade for all athletic field surfaces. Work includes but is not limited to the following:

1. Layout and engineering;
2. Management of the construction sequencing and scheduling relative to soil moisture content and the use of onsite material as fill;
3. Excavation, filling, back filling and compacting;
4. Subgrade scarification, drying, and re-compaction as required;
5. Compaction, compaction testing, and establishment of subgrade;
6. Verification of compliance with the specified planarity tolerances.

1.2 EXISTING SITE CONDITIONS

A. Refer to drawings for topographical and existing condition information and the geotechnical report for site soil conditions.

B. Carefully maintain benchmarks, monuments and other reference points. If disturbed or destroyed, replace as directed. It is the responsibility of the Contractor to familiarize themselves with all records of existing utilities in area of site work.

C. The Contractor shall contact the appropriate utility agencies for identification of underground utility location.

1.3 TEMPORARY EROSION AND SILTATION CONTROL

A. All work shall conform to the erosion and sedimentation control requirements of the local jurisdiction including installation of siltation control such as filter fabric fences, check dams, sedimentation basins, etc. See Demolition and Erosion Control Plans C2.0 through C2.3.

1.4 EXISTING UTILITIES

A. The Contractor shall coordinate all existing utilities prior to proceeding with demolition and earthwork activity. Protect any active pipes encountered.

1.5 DUST CONTROL

A. Protect persons and property from damage and discomfort caused by dust. Water as

necessary to quell dust.

1.6 ROADWAY PROTECTION

A. Provide wheel-cleaning stations to clean wheels and undercarriage of trucks before leaving site, as necessary to prevent dirt from being carried onto public streets. If streets are fouled, they must be cleaned immediately in conformance with the requirements of the local jurisdiction as applicable. This requirement applies to all vehicle movements for the entire period of construction.

1.7 TRAFFIC REGULATION

A. Conduct operations in such a manner to avoid unnecessary interference to existing traffic. Minimize heavy vehicle traffic to and from site during peak traffic hours. Do not park vehicles in traffic lanes. Provide flagmen as required. Conform to traffic control requirements of the local jurisdiction.

B. Contractor shall be responsible for all traffic control and emergency call outs resulting from Contractor operations.

C. Maintain fire lanes, roadways and alleys to existing buildings continuously, as required by the fire department having jurisdiction.

D. Existing walkways and roadways leading past the construction shall remain clear and safe at all times. Provide barriers, flashing lights, walkways, guardrails and night lighting as required for safety and control.

1.8 RELATED WORK IN OTHER SECTIONS

A. Refer to Earthwork for general site grading requirements.

B. 32 18 22 Field Imported Sands

1.9 QUALIFICATIONS

A. The subcontractor responsible for field base establishment, field subsurface drainage, field permeable aggregates and field imported sands placement and compaction shall be submitted to the Engineer for approval. Specific qualification requirements are included as follows:

1. Sub-contractor shall be and has been actively and directly engaged in constructing similar natural or synthetic field projects for a period of five (5) or more years and shall provide proof of five (5) or more full size (75,000 SF) sports field base installations completed in the past three (3) years. The Contractor's experience shall include completion of high school, college, or professional level competition fields. The playing field system shall include earthwork, wash water or irrigation systems, drainage and subsurface drainage systems and base aggregate placement and compaction. Provide a listing of all construction

contracts (whether completed or in progress) entered into or performed by the subcontractor within the past five years for projects similar in scope, time and complexity to the work called for under this Contract; include the names of the contracts, and the names and contact information of the owners.

PART 2 - PRODUCTS

Not Applicable

PART 3 - EXECUTION

3.1 FIELD LAYOUT AND ENGINEERING

A. The General Contractor shall be responsible for the vertical and horizontal layout of all work and control points required to construct all work in accordance with the drawings and specifications.

3.2 SEQUENCING AND SCHEDULING

A. All new cut and fill areas shall be seal rolled at the end of each day to minimize moisture penetration.

3.3 EXCAVATED MATERIALS

A. Suitable excavated material may be utilized as fill. Any excess material is to be disposed of off site.

3.4 FIELD SUBGRADE AREAS

A. All natural turf areas shall be compacted to 90% of maximum dry density by mechanical means. The Contractor shall be responsible for maintaining appropriate soil moisture prior to and during compaction activities, the cost of which is to be included in the contract price.

B. All synthetic turf areas shall be compacted to 95% of maximum dry density. The Contractor shall be responsible for maintaining appropriate soil moisture prior to and during compaction activities, the cost of which is to be included in the contract price.

C. Care must be exercised during grading of the subgrade so as to achieve a uniform, true surface relative to finish grade.

D. Fill must be select material to be free of organic matter, clay, concrete and other extraneous material, compactable to a minimum of 95% density. Fill shall be placed and compacted in lifts of 12" maximum loose depth.

E. Finish subgrade for field areas shall be compacted to a 90% (natural) or 95% (synthetic) maximum dry density. Subgrade shall be established to within the tolerance of +0.00' or - 0.10' of the design subgrade elevation for these areas.

F. Upon completion of the subgrade establishment and Contractor confirmation for conformance with the tolerance, the Contractor shall notify the Engineer and schedule an inspection for approval. The Contractor shall have a laser plane system with slope control available to the Engineer for the inspections. The Contractor shall not be authorized to install the subsurface drainage system until the subgrade has been inspected and approved by the Engineer.

END OF SECTION 31 22 16

SECTION 32 18 22 - FIELD IMPORTED SANDS

PART 1 - GENERAL

1.1 SCOPE OF WORK

A. Upon completion of the subgrade establishment, irrigation piping installation, and subsurface drainage installation, furnish and install imported root zone sand for sand-based natural turf field areas.

B. Furnish and install 8” depth root zone sand. At areas adjacent to infield/transition, depth of sand may vary from 4”-8” as indicated on details.

C. Furnish and install infield soil at eastern 2 infields (Base Bid Only).

1.2 SUBMITTALS

A. The Contractor shall submit to the Engineer for approval of current sieve analysis and the source of the imported root zone sand, and root zone compost materials and infield soil proposed for use on the project. The sieve analysis shall include the same sieve sizes as those indicated in the specifications and shall be wet sieves as designated in the specifications. For the root zone sand mix material, submit a sieve analysis of both the sand and compost material as well as a sample of the compost material.

B. The Contractor shall submit infiltration rate test data for the root zone mix material. The testing shall be performed on a blended and compacted sample of the top mix sand and compost materials. The testing shall be completed and submitted to the Engineer for approval prior to blending the materials for the field. Recommend testing laboratories for the root zone material are A. McNitt Company (814) 364-2792 or Hummel & Co. Inc. (607) 387-5694.

C. The Contractor shall submit testing on the compost material for the organic content.

D. The Contractor shall submit sieve analysis for the infield soils.

1.3 RELATED WORK IN OTHER SECTIONS

A.	Section	11 68 24	Outdoor Athletic Equipment and Furnishings
B.	Section	31 22 16	Field Subgrade Establishment
C.	Section	32 18 26	Field Seeding & Establishment
E.	Section	32 84 23	Irrigation Systems
F.	Section	33 46 16	Field Subsurface Drainage

1.4 TESTING

A. The Contractor shall complete testing. Refer to Section 01 40 00, 1.5.

B. The Contractor shall coordinate directly with the Owner's testing firm relative to the delivery schedules of the imported sand materials. Sampling will be scheduled daily during the delivery of root zone materials and infield mix material.

C. Prior to off-site blending of the top mix sand material, the Contractor shall schedule an inspection of the stockpiled compost material with the Engineer.

D. The Contractor shall provide testing and surveillance as required to assure materials and work fully comply with contract requirements.

E. Owner's tests that do not meet specifications shall be paid for by the Contractor at a price equal to the Owner's contract testing agreement. The Contractor shall pay directly to testing organization upon invoice which has been approved by the Engineer.

1.5 QUALIFICATIONS

A. The subcontractor responsible for field base establishment, field subsurface drainage, and field imported sands placement and compaction shall be submitted to the Engineer for approval. Specific qualification requirements are included as follows:

1. Sub-contractor shall be and has been actively and directly engaged in constructing similar natural or synthetic field projects for a period of five (5) or more years and shall provide proof of five (5) or more full size (75,000 SF) sports field base installations completed in the past three (3) years. The Contractor's experience shall include completion of high school, college, or professional level competition fields. The playing field system shall include earthwork, wash water or irrigation systems, drainage and subsurface drainage systems and base aggregate placement and compaction. Provide a listing of all construction contracts (whether completed or in progress) entered into or performed by the subcontractor within the past five years for projects similar in scope, time and complexity to the work called for under this Contract; include the names of the contracts, and the names and contact information of the owners.

PART 2 - MATERIALS

2.1 SAND / ORGANIC ROOT ZONE FOR NATURAL TURF

A. Root Zone Sand shall be a blend of 90% Sand Component, and 10% Select Organic Material, with 1lb/cy fertilizer.

B. Root Zone Sand Component

1. The sand shall be a washed, naturally weathered silica sand (preferably quartz).

2. The predominant sand shape shall be Angular, Sub-Angular, or Sub-Rounded, with medium to low sphericity.
3. The sand shall have a calcium carbonate equivalent less than 3% (by weight).
4. Sand sizing will conform to the following specification (all percentages are on a dry weight basis):

    a. No particles greater than 3.4 mm.
    b. Less than 5% of the particles will be between 2.0 - 3.4 mm.
    c. Less than 10% of the particles will be between 2.0 -1.0 mm.
    d. Less than 25% of the particles will be between 0.5 mm and 1.0 mm
    e. At least 55% and no more than 80% of the particles will be between 0.25 mm - 1.0 mm.
    f. Less than 30% of the particles will be between 0.15 - 0.25 mm.
    g. Less than 10% of the particles between 0.05 - 0.15 mm.
    h. Less than 4% of the particles smaller than 0.05 mm.

Sieve Size	% Passing by Weight
No. 4	100
No. 10	95 - 100
No. 18	85 – 100
No. 40	60 – 100
No. 60	20 – 45
No. 100	5 – 15
No. 200 (wet sieve)	0 – 4.0
No. 270 (wet sieve)	0 – 3.0

C. Select Organic Material

1. Carbon content measured by loss on ignition to be greater than 80% as a percentage of dry weight.
2. Particle Gradation; Poorly graded fine particulate, <2mm (0% retained on #8 screen).
3. Composition; Peat, comprised primarily of a variety of reeds, sedges, and marsh grasses.
4. Select Organic Material to be Dakota Peat or approved equal, Dakota Peat & Equipment 800-424-3443. Locally available approved organic components consistent with State of Washington compost may be acceptable upon submittal of components, sieve and test results in a fully completed mock up section.

D. Fertilizer and Minor Elements

Analysis 6-20-20
Total Nitrogen (N)……6.0%
6.00% Ammoniacal Nitrogen
Available Phosphate (P2O5)……20.00%
Soluble Potash (K2O)……20.00%
Sulfur (S)……..5.00%
Iron (Fe)……1.50%
Zinc (Z)……0.75%

E. Root Zone Sand shall be uniformly blended off site to a homogenous mixture. The blending procedure and finished mix must be approved by the Engineer. Foreign material such as soil or other extraneous material will not be permitted in the mix. The mixing shall not be conducted on a soil surface.

F. Root Zone Sand shall be tested to prove the following properties;

Total Porosity:	35% - 55%
Air-filled Porosity (at 30 cm tension)	15% - 30%
Capillary Porosity (at 30 cm tension)	15% - 30%
Saturated Conductivity	12 - 24 inches/hour
Organic Matter Content (by weight)	0.25% - 1.50%

Air-filled and Capillary Porosity should be approximately equal with a difference of no more than 10%.

2.2 INFIELD MIX

A. This material is to be placed on the existing infield mix in the infield areas of the eastern 2 fields (Base Bid).

B. The ratio of this mix shall be 95% infield mix sand/silt with 5% calcined diatomaceous earth by compacted volume.

C. Infield mix sand/silt is to meet the following gradation requirements:

Sieve Size	% Passing
# 4	100
# 20	85 - 100
# 50	60 - 80
#100	30 - 50
#200 (wet sieve)	12 - 24
#270 (wet sieve)	8 - 16

D. Diatomaceous Earth: The material shall be created from calcined diatomaceous earth with the following composition:

Silica (SiO_2)	89.0%
Alumina (Al_2O_3)	4.8%
Iron Oxide (Fe_2O_3)	1.4%
(CaO)	1.0%
(MgO)	0.3%
(Na_2O)	1.6%

and the following characteristics:

Bulk Density	27 lbs/cu.ft.
Specific Gravity	2.20
Water Absorption (ASTM F-726)	130%

The material shall be Playball - fine or approved equal. Contact AMS at (503) 656-4968

PART 3 - EXECUTION

3.1 ROOT ZONE SAND PLACEMENT

A. Place root zone sand after subgrade is completed and approved by the Engineer.

B. The ratio of the mix shall be 90% sand and 10% organic by volume. If the organic material is not compacted during batching, additional organic may need to be added to provide a true 10% organic ratio.

C. Blending must be performed off site. The blending shall produce a uniform homogenous mixture of sand and organic (compost). The blending procedure shall be subject to approval by the Engineer. Foreign soil or other extraneous materials will not be permitted in the mix. Mixing shall not be conducted on a soil surface.

D. Water settle and roll to achieve consolidated settled depth.

E. Add material as necessary to achieve finish grade.

F. Apply moisture as necessary to settle for stabilization.

G. Finish grade tolerance is +0.05' and -0.00' relative to grading plan. All fine grading shall be performed utilizing a laser plane system with slope control.

H. In all areas, constant relative surface slope is to be maintained.

I. Upon completion of the fine grading of the root zone sand, the Contractor shall notify the Engineer and schedule an inspection for approval. The Contractor shall have a laser plane system with slope control available to the Engineer for the inspections.

3.2 INFIELD MIX PLACEMENT

A. The ratio of this mix shall be 95% infield sand/silt with 5% calcined diatomaceous earth by compacted volume. Blending must be performed off-site and materials shall be uniformly mixed to a homogenous mixture. Blending procedure and the finished mix shall be as approved by the Engineer. The new/imported infield mix shall supplement the existing infield soils on site.

B. Foreign soil or other material will not be permitted in the mix.

C. Place infield mix material after minimum depth of root zone sand component is placed, particularly at excavations and trenches within the infield. The root zone sand component shall act as “Base Sand”.

D. Place material so as to establish the minimum requirements of finish settled depth, as specified on the drawings, and finish grade entire surface to final elevations shown. Water settle and roll to achieve consolidated settled depth.

E. Add material as necessary to achieve finish grade. Apply moisture as necessary to settle for stabilization.

F. Finish grade tolerance is +0.05' and -0.00' relative to grading plan. No depressions or "bird-baths" will be permitted

G. In all areas, constant relative surface slope is to be maintained. The finish grade of the infield mix shall be flush with the concrete curbing and one inch above the adjacent root zone sand finish grade.

END OF SECTION 32 18 22

SECTION 32 18 24 – INFILLED SYNTHETIC TURF

PART 1 – GENERAL

1.1 SCOPE OF WORK

A. Scope of work to include all labor, material, equipment, transportation and services to install complete new vertical draining in-filled synthetic turf surfacing system for the western infields (Base Bid), designated bullpen areas (Base Bid) and eastern infields (Additive Alternate #2). System to be as herein specified including, but not specifically limited to the following:

1. The Synthetic Turf Contractor shall be vertically integrated with manufacturing and installation. The manufacturing shall include a vertically integrated manufacturing process including in-house fiber extrusion, tufting, and coating.
2. Independent testing of the synthetic turf materials prior to shipment to the project site.
3. Delivery of the synthetic turf materials (not including infill) a minimum of 1 week prior to the scheduled installation of the materials;
4. Review and acceptance or certification of the permeable aggregate base as it applies to installation of turf system, permeability and warranty implementation;
5. Installation of complete vertical draining synthetic turf surfacing system, including a sand and coated SBR rubber infill composition.
6. Provide extra turf materials to the Owner for future repair and protective purposes.
7. Provide all appropriate maintenance and repair manuals and warranty package to Owner.

1.2 SYNTHETIC TURF SURFACING

A. The following vendors are pre-approved for the Synthetic Turf Field surface:

1.	Astroturf, Rootzone Diamond-I RBI	Astroturf (206) 979-9792
2.	FieldTurf, Vintage 40	FieldTurf (360) 668-8989
3.	SportsGrass Edge XP	Forever Lawn (360) 455-9500

1.3 APPROVED FIBER MANUFACTURERS

A. The Long Parallel Slit Film fiber shall be TenCate Tapeslide XP, Bonar FB Ultra, Polytex, FieldTurf Classic HD, or approved equal. The texturized thatch can comprise of polyurethane or nylon fibers.

B. The synthetic turf vendor shall provide written documentation in the form of a signed affidavit certifying the source of the fiber used for the field including brown and any other colors used for the lines and markings.

C. Fiber shall be certified to have less than 50 ppm or less of lead from both the fiber supplier and the turf vendor.

1.4 MINIMUM QUALIFICATIONS FOR SYNTHETIC TURF SYSTEM

A. Definitions: for the purposes of defining the necessary qualifications required to perform this work, the following definitions will apply.

1. "Infilled Synthetic Turf" refers to surfacing systems comprised of polyethylene fibers no less than 2.0" in finished height, tufted into a coated polyethylene backing, filled with loose, resilient fills to within 1" of the fiber tops.
2. "Full sized" shall mean a single installation of no less than 75,000 contiguous square feet. Large contiguous installations will be considered as a single installation regardless of total square footage.
3. "Successful" in the context of this specification shall be defined as having had zero *repeat* customer call-backs for defects of manufacturing for the life of the warranty or craftsmanship for the first two years.

B. Approved Synthetic Turf System shall be manufactured, sold, and warranted by a single vendor. Manufacturer of the system shall include, at a minimum, assembly of the constituent components, i.e. tufting, of the specified fiber into an approved backing.

C. The manufacturer of the synthetic turf system must have produced a minimum of twenty (20) successful in-filled synthetic turf soccer fields of full size and outdoors within the past two (2) years. Also, the manufacturer of the synthetic turf system must have produced a minimum of ten (10) successful in-filled synthetic turf full size football or soccer fields with the identical product including infill composition to that proposed for this project within the past year.

D. Installer of the synthetic turf system must have installed a either a minimum of ten (10) successful in-filled synthetic turf football or soccer fields of full size within the past two (2) years or a minimum of twenty (20) successful in-filled synthetic turf football or soccer fields of full size within the past five (5) years. The installer shall have installed a minimum of five (5) successful in-filled synthetic turf football or soccer fields of full size with the product vendor.

E. The synthetic turf surfacing system vendor shall have a designated employed representative available for service based in the Pacific Northwest (Oregon, Washington, Idaho).

1.5 RELATED WORK SPECIFIED IN OTHER SECTIONS

A. This section requires coordination with the work and requirements of all other sections, including, but not limited to:

B.

02 11 00	Site Preparation
03 30 00	Sitework Concrete
31 22 16	Field Subgrade Establishment

33 4616 Field Subsurface Drainage
33 4623 Field Permeable Aggregate

1.6 STANDARD SPECIFICATIONS

A. Comply with National Federation of High School rules for all sports included.

B. For standards: Applicable American Society for Testing Materials (ASTM), (latest edition).

1.7 POST AWARD SUBMITTALS

A. Shop Drawings: Within 14 calendar days after issuance of Notice to Proceed, submit to the Engineer five (5) copies of complete and detailed drawings showing all component parts of the synthetic turf system. The shop drawings shall be drawing to scale (1”=30’ minimum) and shall include:

1. Total depth of infill
2. edging details
3. insert details including backing material
4. seam details
5. seam layout
6. gluing patterns
7. dimensional shop drawing for all field lines, markings and boundaries

B. Synthetic Turf Samples: Within 14 calendar days after issuance of Notice to Proceed submit to the Engineer:

1. Two 6"x 12" samples each of each turf showing backing with perforations.
2. Two 6" x 12" samples each of turf showing method of seam makeup with perforations. One sample to have example of inlaid lines.
3. Two 6” x 12” samples each of the other colors proposed for use on the field for lines and markings.
4. Two 1-pound samples of the proposed In-fill material.

C. Manufacturer's Specifications and Warranty:

1. Within 14 calendar days after issuance of Notice to Proceed submit to the Engineer five (5) copies each of selected manufacturer’s material specifications and installation instructions. Include detailed specifications of manufacturer’s provisions for achieving permeability, stating rate in infiltration and permeability in inches per hour of system materials for the vertical draining system.
2. Within 7 calendar days after Notice to Proceed, submit to the Engineer five (5) sample copies of warranty package herein specified for review.

D. Testing and Quality Control: Within 14 calendar days after issuance of Notice to Proceed, submit to the Engineer the following test results for the system specified. An independent testing laboratory experience with testing of synthetic turf or carpeting materials shall certify these tests. The qualifications of the testing laboratory to be

utilized for the submittal and the pre-shipment testing shall be submitted to the Engineer for approval. Applicable minimum material ASTM tests:

1. Dynamic Cushion Test - ASTM F355, Procedure A, (system); ASTM F355 procedure A at the 24" drop.
2. Yarn and fabric characteristics.
3. Pill Burn Test – ASTM D2859

E. Maintenance and Operating Data:

1. Prior to acceptance and/or occupancy by the Owner, furnish to the Engineer five (5) copies in hard cover form of maintenance and operating data with imprinted Project, Owner, Engineer, Contractor and Turf Subcontractor names, and date of turf system installation.
2. In addition, provide descriptions of any equipment recommended for maintenance and repair, citing specific vendors for each unit.
3. Use and Limitations - Provide a separate page stating approved activity usage for the turf and activities not recommended relative to warranty.
4. Index - Index with tab dividers for data as follows: Materials installed with their characteristics:
   a. General maintenance
   b. Small repair procedures
   c. Minor seam repair
   d. Discussion of precautions to be practiced, general maintenance, and uses to avoid to protect turf surface and to maintain installation's warranty
   e. Recommendations for paint application and removal of lines and markings
   f. Recommendations for snow removal procedures.

1.8 PRE-SHIPMENT SUBMITTALS

A. Prior to shipment of the synthetic turf materials to the job site, synthetic turf material from every fifth roll shall be randomly sampled and the tested by an independent testing laboratory experience with testing synthetic turf materials. The testing laboratory shall be completely independent with no ties to the turf manufacturer. The testing shall include the following:

Item	ASTM	Property
1.	FTIR Spectrograph	Pile Composition
2.	D418	Pile Weight
3.	D418	Total Weight
4.	D418	Pile Height
5.	D1335	Tuft Bind (without infill)
6.	D1682	Grab/Tear Strength.

B. Copies of the test results shall be transmitted to the Owner and Engineer directly from the testing laboratory. The synthetic turf materials shall not be shipped to the site without written authorization from the Engineer after the Owner and Engineer have approved the test results.

C. Samples of the synthetic turf material tested from each roll shall also be transmitted to

the Engineer for approval by the independent testing laboratory prior to shipment of the synthetic turf materials to the job site. Sample size shall be minimum 12” x 12”.

D. All fees and costs associated with the pre-shipment sampling and testing shall be paid by the Contractor.

1.9 CERTIFICATION OF THE BASE

A. The Synthetic Turf Surfacing Contractor shall furnish to the Owner, prior to the installation of the synthetic turf as applicable, a written certification of the acceptability by the turf vendor of the permeable aggregate base for installation and warranty validation.

1.10 TURF SYSTEM HOLD HARMLESS

A. The synthetic turf manufacturer and installer shall not infringe upon any current or pending patents held by other synthetic turf manufacturers or installers.

B. The Contractor, their synthetic turf subcontractor, and the synthetic turf manufacturer shall hold the Owner and the Engineer harmless from infringement of any current or future patent issued for the synthetic turf surfacing system, installation methods and vertical draining characteristics. A notarized statement shall be provided as part of the submittal package.

1.11 WARRANTY OF SYNTHETIC TURF

A. Warranty shall cover, in general, the usability of the turf surface, accessories, use characteristics, and suitability of the installation. All items covered by warranty are to be replaced or repaired with new materials, including installation at the sole expense of the warranting contractor for the period of eight (8) years to the Owner, for the designated uses enumerated as follows:

1. Softball
2. Baseball
3. Physical exercises
4. Physical education activities
5. Pneumatic rubber-tired maintenance and service vehicles
6. Pedestrian traffic and other similar uses

B. A principal of the applicable firm, duly-authorized to make contracts, shall sign the turf vendor warranty. If the turf vendor is not the manufacturer, the manufacturing firm shall also sign the warranty. The term "Contractor" contained herein means the firm furnishing warranty. "Owner" is the City of Chehalis. Warranty period shall be a minimum of eight (8) years from date of substantial completion of the installed system by the Owner.

C. Furnish a pre-paid third-party insurance policy in support of the warranty required for the field, for the entire warranty period from an A-rated domestic insurance carrier.

1.12 FORM OF WARRANTY OF SYNTHETIC TURF SYSTEM

A. Contractor hereby warrants to Owner, subject to the limitations and conditions set forth below, that its synthetic turf system consisting of synthetic turf described as _____, and the adhesives used in the installation, is free from defects in material and workmanship and shall, for a period of eight years as applicable from the date of substantial completion by the Owner, remain serviceable for multiple sports activities.

B. Contractor warrants to the Owner that its synthetic turf materials shall not fade, fail, shrink, wrinkle, or reflect excessive wear. Contractor shall, at their sole expense and cost, replace such areas of the synthetic turf system not performing to these standards for the life of the warranty.

C. Definitions:

1. The term "not fade" in the context of this warranty shall mean that the synthetic turf material shall remain a uniform shade of brown, or other colors installed, with no significant loss of color.
2. The term "not fail" or "excessive wear" as used in the context of this warranty shall mean that the length and weight of the face yarn or pile material in the synthetic turf surface above the infill materials shall not have been decreased by more than 10% per year according to ASTM D418, nor exceed 50% during the warranty period. In the event that the synthetic turf system does not retain its fiber height or shock absorbency and is consequently no longer serviceable during the warranty period, the Contractor shall, at their sole expense, replace such portion of the system that is no longer serviceable.
3. The term "serviceable" in the context of this warranty shall mean that the synthetic turf system for the softball field shall have a maximum "G" value according to ASTM F1936-10 and Procedure A, ASTM F355 10a, not to exceed 140G's at any location upon installation and shall not exceed 200G's throughout life of the warranty period. This shall be determined by conducting dynamic cushioning tests at the locations designated in ASTM F1936-98 at the softball field at opposite sides of the field. Any increase from 140G's to allowable 175G's maximum shall be at a relative uniform rate not to exceed 15 G's in any single yearly period.

D. Where applicable, the fabric seams shall remain attached to the underlying surface over the warranty period and shall not separate or become unglued or unattached, as applicable.

E. Contractor warrants to the Owner that the permeable synthetic system shall drain vertically a minimum of 20 inches precipitation per hour without visible surface ponding.

F. Contractor shall replace with new materials, at their sole expense, any damage to the synthetic turf system that extends more than 3 feet beyond the location of foreign combustibles, which may ignite and fire-damage the synthetic turf system. The Contractor shall not be held liable for any incidental or consequential damages. These warranties and the Contractor's obligations here-under are expressly conditioned upon;

1. The Owner making all minor repairs to the synthetic turf system upon the

discovery of the need for such repairs;

2. The Owner maintaining and properly caring for the synthetic turf system in accordance with the Contractor's maintenance manual and instructions;
3. The Owner complying with the dynamic and static load specifications established by the Contractor.

G. The warranty is not to cover any defect, failure, damage or undue wear in or to the synthetic turf system caused by or connected with abuse, neglect, deliberate acts, act of God, casualty, static or dynamic loads exceeding Contractor's recommendations, footwear having cleats, spikes, or similar projections other than conventional baseball, football, soccer, or rugby shoes having cleats of not more than 1/2" in length, or use of improper cleaning methods.

H. Contractor shall be allowed to examine the synthetic turf system regarding any claim that the Owner makes to be present at any time, to analyze the results of all tests conducted by the Owner or others, and to conduct such tests of their own. Contractor shall not be responsible for any costs or expenses incurred by the Owner or others with respect to such tests, except the Contractor shall pay for costs of all tests and analysis conducted or directed by their representative.

I. In the event the Contractor does not respond to the Owner's written notice within 5 days of receipt of notice or does not submit, schedule and execute corrective work within 15 days for any material replacement and within 5 days for work limited to repairs of existing materials or repair that can be made with attic stock materials, the Owner has the option of having the work performed at the expense of the Contractor.

J. Sample form of warranty herein set forth is a suggested form for use for the work under this section. Manufacturer's standard form of warranty may be used provided all conditions specified are incorporated. All claims by the Owner under this warranty must be made in writing to Contractor's address at_____ within 30 days after the Owner learns of the defect giving rise to the claim. This warranty shall constitute a contract made in the State of Washington and shall be governed by the laws thereof.

1.13 WARRANTY TESTING

A. The turf at each infield shall be tested for dynamic cushioning ("GMAX" Test) by an experienced independent testing laboratory acceptable to the Engineer or Owner at the completion of the installation shortly prior to acceptance inspection by the Owner/Engineer, at the anniversary date of the first, and 60 days prior to the anniversary date of the warranty expiration. If conditions of the Specifications and/or Warranty are not met, the Contractor has the option of corrective work or replacement. In the event corrective work does not meet the requirements of the Specifications after a second attempt to bring the system within these limits, then the Contractor is to replace non-conforming areas or sections solely at the Owner's discretion and direction.

B. Tests shall be performed in accordance with ASTM F-1936-10 and F355-10a.

C. Test locations as designated in F-1936-10, Paragraph 8. Included in the report shall be the measured depth of the infill material at all test locations.

D. All costs for the stated testing shall be paid by the Synthetic Turf Surfacing Contractor.

E. If the Contractor does not have the tests performed within 10 days of specified times listed, the Owner has the option of ordering the testing work at the expense of the Synthetic Turf Surfacing Contractor.

PART 2 - MATERIALS

2.1 GENERAL

A. Infilled Synthetic Turf: The turf system shall be a vertical-draining permeable synthetic turf system. The turf system shall consist of a synthetic grass like surface pile, which shall be tufted into a synthetic backing.

B. All backing layers and coatings shall be firmly bonded together. Coating materials must be completely cured and bonded to the other backing layers. Synthetic turf panels or rolls that do not meet this requirement will be rejected.

C. The entire system shall be resistant to weather, insects, rot, mildew, and fungus growth, and be non-allergenic and non-toxic. The entire system shall be constructed to maximize dimensional stability, to resist damage and normal wear and tear from its designated use, and to minimize ultraviolet degradation.

D. All adhesives used in bonding the system together shall be resistant to moisture, bacterial and fungus attacks, and resistant to ultraviolet rays at any location upon installation.

2.2 DYNAMIC CUSHIONING REQUIREMENTS

A. The dynamic cushioning of the system shall not exceed a maximum value of 140 G's per ASTM, F1936-10 snf ASTM, F355 10a, at any location upon installation.

2.3 PERMEABILITY REQUIREMENTS OF THE SYNTHETIC TURF SYSTEM

A. The system including the synthetic turf, infill materials, shall drain vertically a minimum of 20 inches precipitation per hour without visible surface ponding.

2.4 SYNTHETIC TURF PILE SURFACE

A. The pile surface shall provide good traction in all types of weather with the use of conventional "sneaker-type shoes" and composition, molded-sole athletic shoes.

B. The pile surface shall be suitable for both temporary and permanent line markings using rubber-base paint where applicable.

C. Pile surface shall be nominally uniform in length for all portions of the field. Synthetic turf panels or rolls with irregular pile heights or with “J hooked” fibers that extend more

than 1/4 inch above the surrounding fibers will be rejected.

2.5 SYNTHETIC TURF FABRIC SURFACE

A. The fabric surface shall be constructed and installed in minimum 15-foot widths with no longitudinal or transverse seams, except for head or tee seams at field boundaries and inlaid lines within a finished roll assembly. The seams shall be 15'-0" spacing.

B. Rolls that do not lay evenly and with full dimension width will be rejected. No fitted pieces will be allowed to true alignment.

C. The color shall be uniform with no visible deviations in shade permitted. Rolls that do not meet this requirement will be rejected.

2.6 SYNTHETIC TURF SYSTEM MATERIAL COMPONENTS

A. Pile fibers shall resemble freshly-grown natural grass in appearance, texture and colors.

B. Fabric backing for the in-filled synthetic turf systems can be loose laid and anchored at the perimeter of the area as shown in the details or adhered to the base.

C. All turf seams shall be sewn with high strength polyester fiber cord or nylon, or adhered per paragraph 3.6 of this specification. Alternate seaming methods may be considered, however proof of alternate methods shall be furnished at time of submittal, with a minimum of 20 completed full size synthetic turf fields a minimum of 80,000 SF in size, with alternate seaming method in continuous use for a minimum of 5 calendar years.

2.7 SYNTHETIC TURF PERMEABILITY

A. Synthetic turf with tufted fibers and a coated backing must include either perforations in the backing for vertical drainage, or the turf shall include a partially coated backing providing permeability without the use of perforations. Certified independent test results indicating a minimum drainage rate of 40 inches per hour for the permeable backing must be provided.

B. If perforated, perforations in turf backing to be a minimum of 3/16" diameter clear opening and shall be spaced a maximum of 4" uniformly on-center.

C. The turf shall be perforated with a minimum of 95% integrity over entire surface. Holes must be full diameter, completely through the underside of the turf backing with no material residue or fragmented fibers remaining.

D. Engineer shall approve the turf perforations prior to shipment, upon shipment onsite, or during on-site perforating operations as applicable.

E. If the non-permeable backing material exceeds 12 inches in width it shall be perforated in accordance with paragraph 2.7 of this section. Perforations shall be drilled from the surface after the adhesive has set.

2.8 LINES AND MARKINGS

A. Lines and markings shall be required at bullpen batter's box areas only.

B. All lines and markings are to be installed as synthetic turf inlays. All markings shall be uniform in color, providing a sharp contrast with the turf color, and shall have sharp and distinct edges. Markings shall be true and shall not vary more than 7/32" from specified width and location.

C. Manufacturer is to guarantee that synthetic turf is adaptable to painted lines in the event painting is utilized in the future.

D. For cemented seams, use supplemental backing material. The supplemental backing material shall bridge all inlaid lines and markings a minimum of 4 inches on each side of the seam. Supplemental backing material that is greater than 12 inches in width shall be perforated in accordance with paragraph 2.07 of this section. Perforations shall be drilled from the surface after the adhesive has set.

E. Minimum Lining and Marking Requirements: All lines, numbers and field markings are to be tufted in or installed as synthetic turf inlays without the use of paint.

Varsity Softball:

1.	Batters Boxes	3" white lines
2.	Foul Lines	3" white lines
3.	Pitcher's Circle	3" white line

2.9 MINIMUM SPECIFICATIONS FOR SYNTHETIC TURF SYSTEM MATERIALS

A. The minimum material will be verified and enforced and will be the basis for Owner's testing. Material that fails to meet these minimum specifications will be rejected. The material specifications in this section are minimums. The manufacturer of the synthetic turf fiber and fabric may elect to exceed these specifications to insure compliance with all requirements and the warranty as specified in this section.

B. Color of synthetic turf to be brown as approved by Owner with white markings as shown on the plans and as called for in Section 2.8 for lines and markings. The fiber used for the lines and markings shall be of the same composition as that used for the brown areas.

C. Baseball and Softball "clay" or "cinder" areas including skinned infield areas, base paths, and warning track areas, with higher-wear-area exceptions noted below, shall be a 2.0" high density blend of approved brown slit-film polyethylene fibers with a substantial black or brown textured nylon component in the lower half of the profile, constructed to the following criteria:

1. Blended-Fiber 1.5”

ASTM	Property	Minimum Specification
D5848	Combined Pile Weight	48 oz/sq yard
D5848	Primary Backing	7 oz/sq yard total
D5848	Secondary Back Coating	20 oz/sq yard
D5848	Total Product Weight	87 oz/sq yard
D5823	Pile Height	1.5”
D5793	Stitch Gauge	3/8”
D1335	Tuft Bind (without infill)	8 lbs.
D5034	Grab/Tear Strength	200 lbs.
D2859	Pill Burn Test	Pass

2.10 MINIMUM TURF MATERIAL SPECIFICATIONS

A. Pile fiber shall be a long parallel slit film fibrillated tape fiber, 100% polyethylene athletic quality yarn designed specifically for outdoor use and stabilized to resist the effects of ultra-violet degradation, heat, wear, water and airborne pollution. The fibrillation shall be parallel with long slits. The secondary fiber shall be highly texturized monofilament fiber or polyethelene.

B. Fiber shall be certified to have less than 50 ppm or less of lead from both the fiber supplier and the turf vendor.

C. The long parallel slit film fiber shall meet the following requirements:

Item	ASTM	Property	Minimum Specifications
1.	D1577	Filament thickness	100 U Micron
2.	D2256	Yarn Breaking Strength	20 lbs
3.	D2256	Yarn Elongation to Break	50%
4.	D789	Yarn Melting Point	240^{o} F.

D. Fiber Wear Simulation: Fiber shall exhibit no splitting or appreciable degradation after a minimum of 40,000 cycles of simulated Lisport wear testing and shall remain serviceable without appreciable face weight loss after a minimum of 40,000 cycles of simulated Lisport wear testing.

E. Fabric Composition: Shall consist of 100% polyethylene long parallel slit film yarn tufted into polypropylene backings coated with high-grade polyurethane. Coating and backing materials shall assure suitable tuft bind strength, dimensional stability, and long-term wearing properties.

2.11 INFILL MATERIALS

A. The synthetic turf shall utilize a combination of sand and coated rubber infill materials. The maximum sand content shall not exceed 50% by volume and shall not be less than 40% by volume. The exact in-fill material ratio may be altered to provide strength, shock attenuation, infield performance and to provide permeability by the vendor/installer as approved by the Engineer.

B. Infill material shall be applied in a dried condition when the turf is dry. It shall be applied in uniform layers effectively dragged to distribute the material uniformly to the backing of the turf.

C. The sand infill material shall be graded silica sand, sub-round to round, compaction resistant, washed and dried. The sand shall meet the following criteria:

1.	Percent Silica	80%-95%
2.	Shape	Round to Sub-round
3.	Sphericity	0.65 – 0.85
4.	Roundness	0.60 – 0.70
5.	Hardness (Moh)	7

D. The sand gradation shall meet the following wet sieve analysis:

Sieve Size	Percent Retained
#16	0% – 5%
#20	10% – 20%
#30	50% – 70%
#40	15% – 25%
#50	0% – 10%
#100	0% – 5%
Pan	0% – 2%

E. Coated Styrene Butadiene Rubber (SBR) Infill: Cushion Fall Sport consisting of color encapsulated crumb rubber.

1. The rubber shall consist of SBR rubber granules in the synthetic turf manufacturer's designated proportion, installed as per the approved manufacturer's recommended installation system.
2. The Crumb Rubber Infill (CRI) material used prior to encapsulation shall be derived from North American manufactured automotive or truck tires. Tires more than 10 year old from date of production are not allowed. The Crumb Rubber shall have a specific gravity range from 1.1 minimum to 1.2 minimum as determined by ASTM D297.
3. The colorant is a dual coating process of a non-chromatic color applied utilizing a cross linkable topcoat coating technology to achieve long term durability of the SBR rubber. Colorant must be UV-resistant and free of heavy metals. The encapsulation system/process shall be as per Cushion Fall Sport (302) 897-5381 or approved equal and must be warranted by the manufacturer for a period of no less than 8 years. Color to be Green.

Standard Sieve/Size	% Retained
2– 1.5 mm	0% - 10%

1.5 – 1.0 mm	10% - 30%
1.0 – 0.5 mm	40% - 80%
0.5 – 0.0 mm	0% - 10%

F. Regardless of source or type, infill rubber shall be certified to have less than 50 ppm or less of lead from both the supplier and the turf vendor. Source and age of tires used shall be confirmed to meet the specification requirements.

2.12 MAINTENANCE EQUIPMENT – SWEEPER UNITS

A. The Contractor shall provide one tow behind sweeper/ provide ground driven rotary brush for the cleaning and maintenance of the infilled synthetic turf. Unit shall:

1. Provide for metered re-application of infill material with simultaneous dirt removal through 2 sieve trays
2. Provide sieve trays with variable settings from 4-10MM;
3. Adjustable depth row of tines for decompact infill material
4. Working width to be nominally 6 ft.
5. Rear mounted drag brush.
6. Provide connections for tow behind standard tractor or utility vehicle.

B. Manufacturer's Reference: The sweeper unit shall be SMG TurfCare TCA 2000 or approved equal. Contact SMG Equipment LLC, (253) 350-8803 / www.smgequipment.com.

2.13 MAINTENANCE EQUIPMENT – DRAG BRUSH UNITS

A. One tow-behind drag unit shall be furnished to the Owner with the playfield surfacing system.

B. The drag brush unit shall include 3-point hitch, rear-mount with tow coupling.

C. Include four specially-arranged brush rows to level surface of turf with infilling granulate

D. Working width to be nominally 5 ft.

E. Manufacturer's Reference: The unit shall be SMG Turftuner TT1600 or approved equal. Contact SMG Equipment LLC, (253) 350-8803 / www.smgequipment.com.

2.14 ALTERNATE FIELD EQUIPMENT

A. The synthetic turf vendor may request to substitute equipment for those specific units specified, provided an equivalent function is provided to the specified equipment.

PART 3 – EXECUTION

3.1 CERTIFICATION OF FIELD BASE INSTALLATION

A. The Contractor or the Contractor's subcontractor shall perform an inspection of the

permeable aggregate and submit written certification of acceptance of the base for the installation of the synthetic turf system.

B. Summary of certification shall include, but not be limited to:

1. Acceptance of the base construction "finish surfaces" as totally suitable for the application of work specified under this section.
2. Verification and certification of the infiltration and permeability rates of the permeable aggregate as applying to the warranty.

C. All discrepancies between the required materials, application and tolerance requirements noted by the turf installer shall be brought immediately to the attention of the Contractor and the Engineer. Failure of the turf installer to immediately inform the Contractor and Engineer of any prior work that does not meet the required specifications will result in the turf installer being required to perform any work needed to bring the base to acceptable condition.

3.2 INSPECTION OF MATERIALS

A. Prior to installation, and immediately upon delivery of synthetic turf system materials to the project site, the Synthetic Turf Surfacing Contractor shall inspect material as follows:

1. For damaged or defective items;
2. Measure turf pile height and thickness of each roll;
3. Measure backing perforation diameter and spacing;
4. Reject damaged materials and all materials out of tolerance with this specification.

B. After installation, inspect project area for acceptable seaming, adhesive bonding, uniformity of color of turf, bubble-free surface smoothness as laid, field lines and markings, insert installations, edge details. Remove and/or repair deficient workmanship prior to requesting the Engineer's inspection pursuant to completion and acceptance of the work.

3.3 OWNER'S TEST

A. Owner may have samples of the turf submitted and tested for verification of conformance to specifications. Turf system acceptance is subject to the results of these tests.

B. Any material so tested and found not conforming to specification will be rejected and replaced with material conforming to the specification at Synthetic Turf Surfacing Contractor's expense. Re-submittal shall be required.

3.4 SYNTHETIC TURF INSTALLATION

A. Perform all work in strict accordance to the drawings, shop drawings and manufacturer's specifications and instructions.

B. Verification: The Contractor is responsible for inspecting, verifying, and accepting all installed work of this section.

C. Environmental Conditions: Do not apply adhesive materials or infill material when:

1. Ambient air temperature is below 40 degrees F.
2. Material temperatures are below 40 degrees F.
3. Rain is falling or pending
4. Conditions exist, or are pending, that will be unsuitable to the installation of the system.

D. Preparation:

1. Accept base onto which the synthetic turf surfacing system and the anchoring system are to be applied, as specified above.
2. Immediately prior to application of the synthetic turf, the base shall be thoroughly cleaned of all foreign material, soil, or any other substances that may be detrimental to permeability and the installation of the turf system.

E. Equipment and Access:

1. Passenger vehicles shall not be allowed to park or staged upon the completed aggregate surface either prior to or during installation of the synthetic turf.
2. Equipment utilized during construction including compressors, generators, etc. shall be in complete working order, with exhaust systems oriented vertically and away from the synthetic turf surface. At any location where equipment is parked and/or staged on the turf surface during installation, adequate protection of the finish turf surface will be required including, but not limited to heat resistant panels to ensure 100% viability of the finish turf surface and fibers. Should a portion of the turf be damaged as a result of installation techniques, the entire turf panel may be subject to rejection and replacement at the direction of the Engineer.

F. The fabric surface shall be constructed and installed in 15 -foot minimum widths with no longitudinal or transverse seams, except for head or tee seams at field boundaries and inlaid lines within a finished roll assembly.

G. Rolls that do not lay evenly and with full dimension width will be rejected. No fitted pieces will be allowed to true alignment.

H. Bonding of Material Surfaces: The bonding or fastening of all system material components shall provide a permanent, tight, secure and hazard-free, athletic playing surface. System material components include:

1. Bonding all seams and inlaid line and markings
2. Bonding and seaming must maintain their integrity for total length of warranty period.

I. Seams (Joint)

1. To the greatest extent practical, turf seams shall be sewn with high strength

polyester fiber cord or nylon. If sewing is not practical, seams shall be constructed and adhered withy approved adhesives and backing tapes.

2. Backing layers must lie flat on the field base to provide a uniform pile surface.
3. The width between fiber rows at the seam locations shall not exceed that of the tufting gauge of the turf materials.
4. All sewn seams shall be brushed to provide full coverage of fiber over the thread.

J. Turf Edges: Turf edges to be as shown on the edge fastening details and nailed at the perimeter or secured to concrete surfaces as detailed.

K. Pitcher's Landing Area and Batter's Box/Catcher's Box: Install with 4" width hook tape and 2" width loop tape, allowing ease of removal and replacement of worn areas. Tape to be securely adhered to turf and replacement panels. Replacement panels shall lay flush to adjacent turf panels.

3.5 SYNTHETIC TURF EDGE ANCHOR INSTALLATION

A. Anchor synthetic turf along the sides and ends to the edge nailer board as shown in the details.

3.6 LINING / MARKING INSTALLATION

A. Provide tufted and inlaid markings and inlaid reference points as shown on the drawings. Layouts shall be accurately surveyed and marked prior to installation.

B. If overlapping backing materials are utilized for the inlaid lines and markings resulting in a non-permeable surface in excess of 12 inches wide, the backing materials shall be perforated in conformance with section 2.08 from the surfacing after gluing and prior to installation of the infill material. Protect underlayment from damage due to perforation activity.

3.7 INFILL INSTALLATION

A. The in-fill material shall be applied in a dry condition and when the synthetic turf is dry.

B. The synthetic turf installer shall not infringe upon any current or pending patents held by other synthetic turf manufacturers or installers with the installation of the in-fill materials.

C. For sand and rubber infill systems, the infill materials will be installed with a minimum of 8 applications.

D. The infill installation shall not result in fiber material trapped below the surface of the infill material. If fiber is trapped below the surface, a portion or all of the infill material must be removed and reinstalled.

E. The infill material shall be installed at a uniform depth across the entire field area. Infill depths shall not vary by more than +/- 5 mm from the design infill level indicated in the approved submittals across the entire synthetic turf surfacing area

F. The brushing of the in-fill material shall provide fiber fibrillation resulting in a natural surface appearance. If in Owner's opinion more fibrillation is desired, the Synthetic Turf Contractor shall provide additional brushing of the surface to provide the desired level of fibrillation.

G. The in-fill materials shall be water settled to provide accelerated consolidation of the in-fill material prior to use by the Owner. Water is available from quick coupling valves located around the field. The Synthetic Turf Contractor shall utilize portable sprinkler heads to evenly apply a minimum of 1 inch of water over the entire field area for water settlement. Upon completion of the initial water settlement, the surface will be inspected the Owner and Engineer for footing stability and in-fill consolidation. The Synthetic Turf Contractor shall provide any additional water settling as required by the Owner and Engineer to achieve the desired level of in-fill stability and consolidation.

3.8 CLEANING

A. Remove all excess materials of all types, equipment, debris, etc., from the site immediately after completion of the work. Remove all stains and other blemishes from all finished surfaces. Leave work in clean, new appearing condition, ready for use by Owner.

B. The Contractor shall inspect the entire area with a hand held metal detector to identify any construction materials or tools left on the field. All such materials shall be removed prior to Owner occupancy of the field.

3.9 PROTECTION

A. Adequate protection of materials and work from damage will be the responsibility of the installer during installation and until acceptance of their work. Synthetic Turf Surfacing Contractor will be responsible for protection after the acceptance of the work until final acceptance of all contract work by the Owner. All material damaged prior to acceptance by the Owner shall be replaced at no cost to the Owner.

3.10 EXTRA MATERIALS

A. Deliver to Owner all extra materials herein specified. Receive Owner's written receipt for all materials. Deliver receipt to Engineer.

B. Infill Materials: Provide four (4) 33 gallon rubber trash containers with lids of each infill material used for each site.

C. Turf for Future Repairs: Material may be roll ends or cutoffs; however, each piece of fabric shall be at least 5' x 10'. The following are minimum areas for the extra synthetic turf materials to be provided by the Synthetic Turf Surfacing Contractor to the Owner:

Minimum Quantities:

1.	Brown Turf:	1000 sf
2.	White Turf	100 LF 3" lines

3.	Pitcher's Landing Area	12 each 42" x 78" w/velcro attachment
4.	Catcher's Box	8 each w/velcro attachment
5.	Batter's Box (left and right)	8 each side with velcro attachment (16 total)

3.12 MAINTENANCE EQUIPMENT

A. Contractor shall uncrate, assemble and demonstrate operation of equipment to Owner and Owner's Representatives.

B. Following assembly of equipment, Contractor shall complete a minimum four (4) hour training session utilizing th4e equipment with a variety of maintenance personnel for the City of Lynnwood, Edmonds School District and City of Lynnwood staff.

3.13 MAINTENANCE

A. Vendor shall complete maintenance of the synthetic turf field at both 6 months and 1 year after the date of Substantial Completion. Minimum maintenance activities shall include:

1. Inspect and repair as required each seam.
2. Inspect and repair each inlay and marking as required.
3. Brush and remove surface debris, loose fibers and any other deleterious material. Use of a rotating, mechanical brush is recommended.
4. Decompact and re-level infill materials. Import and place / top dress new infill material matching original infill materials as needed to establish original infill depth, with the same amount of exposed fiber as at installation.
5. All maintenance activities shall be as approved and directed by the original manufacturer.
6. All maintenance activities shall be coordinated with scheduled use of the facility and completed at the convenience of the owner and applicable user groups.

END OF SECTION 32 18 24

SECTION 32 18 26 - FIELD SEEDING & ESTABLISHMENT

PART 1 - GENERAL

1.1 DESCRIPTION

A. The physical work of this section includes, but may not be limited to, the following. Final preparation of the seed bed; Seed application at the specified rates; Operation & Maintenance of the Automatic Irrigation System for the purposes of germinating and establishing natural grass field. Maintenance & Establishment of Natural Grass Field in a uniformly dense and vigorously growing state shall be completed by the Owner. As such, no maintenance is required following completion of seeding.

B. This section requires coordination with the work and requirements of all other sections, including, but not limited to:

11 68 24	Outdoor Athletic Equipment and Furnishings
31 22 16	Field Subgrade Establishment
32 18 22	Field Imported Sands
32 80 00	Irrigation Systems
33 46 16	Field Subsurface Drainage

1.2 SUBMITTALS

A. Fertilizers

1. Provide complete nutrient analysis for the proposed blend and material safety data sheets (MSDS) for all materials proposed.

B. Seed

1. Provide a list of no less than 4 available varieties of each species of seed commercially available in the necessary quantities. Include for all varieties rate of germination, percent inert material, percent weed seed, and seed count/lb.

1.3 SEEDING DATE

A. Seeding of sports fields shall be completed not later than October 1, 2019.

PART 2 - PRODUCTS

2.1 FERTILIZERS

A. Starter Fertilizer

1. Analysis 6-20-20

   Total Nitrogen (N)……6.0%

   6.00% Ammoniacal Nitrogen

   Available Phosphate (P_2O_5)…….20.00%

   Soluble Potash (K_2O)……20.00%

   Sulfur (S)……..5.00%

   Iron (Fe)……1.50%

   Zinc (Z)…….0.75%

2. Packaging to be in multi-wall bags with polycoated inner ply. All bags to be labeled with analysis and ingredients.

2.2 SEED

A. The established Field is to be 100% Perennial Ryegrass upon Acceptance.

B. Perennial Ryegrass component shall be composed of 3 approved varieties in equal proportions. Varieties to be selected by the Engineer from the Contractors list of a minimum 6 available varieties.

C. All seed shall be supplied in sealed packages with complete analysis and certificate intact.

D. Seed Analysis minimum/maximum values;

1. Percent Germination >95.0%
2. Total Weed Seed <0.05%
3. Inert Material <1%

PART 3 - EXECUTION

3.1 PREPARATION

A. Prior to commencing the work of this Section, the Contractor shall demonstrate errorless automatic function and full design coverage of the irrigation system.

B. Stabilize the approved Root Zone Sand finished grade by applying moisture and rolling with a roller having 100 lbs. of weight per linear foot of width.

C. Repeat operation until surface is stabilized within specified tolerances of finish grade and approved by the Engineer.

D. Apply Starter Fertilizer to surface at a uniform rate of 1.0 lbs. of total nitrogen per 1,000 square feet.

E. Apply ½" Irrigation to the prepared seed bed immediately following acceptance and immediately prior to commencing seed application.

3.2 SEED APPLICATION

A. Seed must be applied in two passes, each at one-half of the specified rate.

B. Apply seed with a mechanical seeding machine such as Brillion drill or approved equal.

C. Seed at a minimum rate of 12 pounds per 1,000 square feet. Sow one-half of the seed in two separate applications in 90° crossing patterns.

D. Lightly roll field after seeding with 6' – 10' water-filled roller, pull behind unit.

E. Germination and plant survival: In the event there is lack of germination or failure of plant survival to achieve a uniform, complete cover of turf plants, the Contractor is to immediately reseed at specified rates the effected areas as soon as the condition is detected.

F. Irrigation during germination:

1. Set sprinklers to operate a cycle at the following times:

   8:00 a.m., 10:30 a.m., 1:00 p.m., 3:30 p.m., 6:00 p.m.

2. Operate the full circle sprinklers for ten minutes and the part-circle sprinklers for five minutes.
3. Burlap sheets 1' x 1' should be placed around all heads so as not to disrupt grade around sprinkler head.

3.3 PROTECTION

A. The field area shall be secured immediately after seeding. Signs are to be placed indicating new seeding.

3.4 ACCEPTANCE

A. Acceptance of the seeded areas shall be complete following seed application. No establishment or maintenance requirements will be required of the Contractor.

END OF SECTION 32 18 26

SECTION 32 18 30 – PERIMETER SEEDING

PART 1 - GENERAL

1.1 DESCRIPTION

A. The physical work of this section includes, but may not be limited to, the following. Final preparation of the seed bed; Seed application at the specified rates; Operation & Maintenance of the Automatic Irrigation System for the purposes of germinating and establishing natural grass field; Maintenance & Establishment of Natural Grass Restoration Areas in a uniformly dense and vigorously growing state through Physical Completion.

B. This section requires coordination with the work and requirements of all other sections, including, but not limited to:

31 2216	Field Subgrade Establishment
32 1822	Field Imported Sands
32 8000	Irrigation Systems

1.2 SUBMITTALS

A. Fertilizers

1. Provide complete nutrient analysis for the proposed blend and material safety data sheets (MSDS) for all materials proposed.

B. Seed

1. Provide a list of no less than 4 available varieties of each species of seed commercially available in the necessary quantities. Include for all varieties rate of germination, percent inert material, percent weed seed, and seed count/lb.

1.3 SEEDING DATE

A. Seeding of sports fields shall be completed not later than October 15, 2019.

PART 2 - PRODUCTS

2.1 FERTILIZERS

A. Starter Fertilizer

1. Analysis 6-20-20

Total Nitrogen (N)……6.0%

6.00% Ammoniacal Nitrogen

Available Phosphate (P_2O_5)…….20.00%

Soluble Potash (K_2O)……20.00%

Sulfur (S)……..5.00%

Iron (Fe)……1.50%

Zinc (Z)……..0.75%

2. Packaging to be in multi-wall bags with polycoated inner ply. All bags to be labeled with analysis and ingredients.

B. Granular Maintenance Fertilizer

Analysis 22-2-22

Total Nitrogen (N)…….22.0%

2% Ammoniacal Nitrogen

20% Urea Nitrogen

(15% Slow Release Polymer/Sulfur Coated)

Available Phosphate (P_2O_5)…….2.00%

Soluble Potash (K_2O)……22.00%

Sulfur (S)……....7.00%

Iron (Fe)……..0.45%

Manganese (Mn)……0.18%

Zinc (Z)……0.17%

2.2 SEED

A. The established Field is to be 100% Perennial Ryegrass upon Acceptance.

B. Perennial Ryegrass component shall be composed of 3 approved varieties in equal proportions. Varieties to be selected by the Engineer from the Contractors list of a minimum 6 available varieties.

C. All seed shall be supplied in sealed packages with complete analysis and certificate intact.

D. Seed Analysis minimum/maximum values;

1. Percent Germination >95.0%
2. Total Weed Seed <0.05%
3. Inert Material <1%

2.3 MULCH

A. Wood cellulose fiber mulch: Degradable green dyed wood cellulose fiber of 100% recycled long fiber pulp, free from weeds or other foreign matter toxic to seed germination and suitable for hydro-mulching.

PART 3 - EXECUTION

3.1 PREPARATION

A. Prior to commencing the work of this Section, the Contractor shall demonstrate errorless automatic function and full design coverage of the irrigation system.

B. Stabilize the root zone soils finish grade by applying moisture and rolling with a roller having 100 lbs. of weight per linear foot of width.

C. Repeat operation until surface is stabilized within specified tolerances of finish grade and approved by the Engineer.

D. Apply Starter Fertilizer to surface at a uniform rate of 1.0 lbs. of total nitrogen per 1,000 square feet.

E. Apply ½" Irrigation to the prepared seed bed immediately following acceptance and immediately prior to commencing seed application.

3.2 HYDROSEEDING APPLICATION

A. Hydraulically apply cellulose fiber mulch material with grass seed homogeneously in emulsion slurry. The equipment shall have an integral agitation system capable of mixing and maintaining materials homogeneously in solution.

B. Apply so that grass seed is deposited at a minimum rate of 6 pounds per 1,000 square feet of area. Apply wood fiber cellulose mulch at a minimum rate of 2,000 pounds per acre.

C. Irrigation during germination:

1. Set sprinklers to operate a cycle at the following times:

   8:00 a.m., 10:30 a.m., 1:00 p.m., 3:30 p.m., 6:00 p.m.

2. Operate the full circle sprinklers for ten minutes and the part-circle sprinklers for five minutes.
3. Burlap sheets 1' x 1' should be placed around all heads so as not to disrupt grade around sprinkler head.

3.3 PROTECTION

A. The field area shall be secured immediately after seeding. Signs are to be placed indicating new seeding.

3.4 FIELD ESTABLISHMENT

A. Refer to paragraph 3.5 below for specific performance requirements identifying the conclusion of the establishment period. If these performance requirements are met but the Owner does not have reasonable access due to other work remaining in progress, establishment protocols must be maintained by the Contractor at no additional cost to the Owner.

B. Mowing

When the grass plants reach a height of 1-3/4", the Contractor shall mow with a PTO reel-type mower to a height of 1-1/2". As the surface begins to mature friction drive equipment may be utilized with prior approval. Catch and remove all clippings. Mowing is to be continued weekly or more frequently as required until the field has been established as approved by the Owner. Rotary mowing equipment may only be utilized for the first mowing.

C. Fertilizing

After the grass has been mowed for the first time, the Contractor is to alternate applications the specified Granular Maintenance Fertilizer every two weeks until the field has been established and accepted by the Owner. Fertilizer is to be applied at a rate of one-half pound of elemental nitrogen per 1,000 sq. ft. of area per application.

1. Granular material is to be applied uniformly with half being applied at 60° to the initial pattern.
2. Following application of Granular Maintenance Fertilizer, immediately cycle the field irrigation system for three minutes per zone (or one full rotation) to wash the material off of the leaves of the plants.
3. Apply Foliar Nitrogen a minimum of 6 hours after irrigation system has cycled and 12 hours prior to the next cycle.
4. Prescriptive fertilization may be required at no additional expense to the Owner where directed based on indications of disease or other conditions such as a lack of uniformity.

D. Irrigation

After the first mowing, or at the Contractors discretion, the irrigation system is to be set for one mid-day operation and two night-time operations each day, with adjustments for fertilization requirements. Cycle times will be determined by the Contractor using the provided precipitation rate data and his own as-built information, as necessary to sustain turf growth.

E. After establishment of the field is complete any surface irregularities will be removed with rolling with a roller having 100 lbs. of weight per linear foot of width.

3.5 ACCEPTANCE

A. Density

The Contractor shall provide a uniformly dense cover of the specified grass species with no measurable bare areas over 2” in any direction.

B. Vigorous Growth

The Contractor shall provide an actively growing stand of the specified grass species which demonstrates a minimum of 1” of growth per week at the time of acceptance.

The Contractor will maintain the work in progress as specified or approved in writing where environmental conditions do not allow for the accurate measurement of density or growth rate, whether due to seasonal or climatic reasons.

C. Remedy

The Contractor will remove and replace, including preparation, seeding, establishment, and maintenance, any and all areas that are deemed inadequate or deficient. The smallest replacement area will be 12” square / 15” diameter.

END OF SECTION 32 18 30

SECTION 32 80 00 – IRRIGATION SYSTEMS

PART 1 - GENERAL

1.1 SCOPE OF WORK

A. Field locate and connect to the existing 3” galvanized water supply as shown on the plans including isolation gate valve; flow sensor; and master valve. There is an existing service meter and backflow prevention device that shall remain undisturbed.

B. Furnish and install a complete automatic irrigation system associated with sand based natural turf athletic fields and perimeter landscape areas. Work to include layout, installation of isolation valves, trenching, pipe installations, backfill, quick coupling valves, valve boxes, riser assemblies, controllers and related items.

C. Maintain water supply and irrigation control wiring to all other new or planned landscape irrigation systems.

D. Coordinate all work with site landscape irrigation system improvements

1.2 STANDARD SPECIFICATIONS

A. All sections of the standard specifications applicable to any and all parts of this project shall govern, except as specifically modified in these contract documents.

1. The Standard Specifications for Municipal Public Works Construction, Washington State Chapter (latest edition).
2. American Water Works Association
3. American Society for Testing and Materials
4. State of Washington DOT and Standards
5. National Electrical Code
6. Lewis County Requirements

1.3 FIELD DIMENSION AND LAYOUT

A. The Contractor will be responsible for furnishing, setting, and marking of all line, grade, and location stakes, including offsets and general construction staking. The Engineer provided reference points are shown on the project plans.

B. There shall be onsite at all times when work-requiring control is being performed, all necessary equipment, supplies and instruments related thereto. A qualified layout specialist must be assigned to the Contractor's crew for this work. This equipment and specialist must be available at no additional cost to the Engineer for the purpose of approving layout and certifying work progress onsite.

C. The Engineer prior to commencing construction and on a continuing basis must approve all layout work, materials and methods for each phase requiring accuracy control.

1.4 SUBMITTALS

A. Product Information: The Contractor shall submit copies of catalog information of all equipment for approval.

B. Record Drawings: Contractor shall furnish accurate record drawings of the complete irrigation and washwater systems. The drawing shall be to scale. Drawings shall show installed manufacturer's name and catalog number. The record drawing shall be turned over to the Engineer for review at or before the professional review (punch list) of the project.

PART 2 - PRODUCTS

2.1 BACKFLOW PREVENTION DEVICE

A. Backflow Prevention Device is existing.

2.2 FLOW SENSOR

A. The flow sensor shall be a 2” schedule 80 PVC tee fitted with a removable sensor. The sensor must be capable of transmitting the signal a minimum of 2000’. The flow sensor must accommodate flow rates between 1 and 30 feet per second. Flow Sensor shall be Data Industrial or Calsense.

B. The flow sensor shall be compatible with the Rainbird central control system.

C. The flow sensor shall be installed in a Carson #1419-12 valve box with a 1419*** 100 polymer concrete ring and a 1419PR polymer concrete lid. The cover shall be secured with stainless steel bolts

2.3 PVC WASHWATER & IRRIGATION PIPING

A. Main line pipe shall be Schedule 40 PVC. Plastic pipe shall be extruded from 100% virgin Polyvinyl chloride (PVC) Pipe to conform to ASTM D2241, F477, D1784 Cell Class 12454-A,B.

B. Lateral line pipe shall be Schedule 40 PVC.

C. Sleeving pipe shall be Schedule 40 PVC.

D. Pipe shall be guaranteed to be free from manufacturing defects in material and workmanship in accordance with the section of specifications covering warranties. The

pipe is to be guaranteed to operate within the limits of pressure and temperatures recommended by the manufacturer and as required in these specifications.

E. Pipe Sizing: Schedule 40 PVC

Size	O.D.(In)	Min. Wall (In)
3"	3.500	0.216
2 ½”	2.875	0.203
2”	2.375	0.154
1 ½”	1.900	0.145
1 ¼”	1.660	0.140

2.4 PLASTIC PIPE FITTINGS AND CONNECTIONS

A. Fittings to be PVC except as noted on riser, valve assemblies, details, etc.

B. Connections shall be solvent weld, except at valves, risers, etc. that require threaded connections.

C. Threaded connections shall be of male adapter type.

D. Couplings and fittings to be taper-molded, Schedule 40, except where indicated in details to be Schedule 80.

E. Threaded nipples must be Schedule 80.

F. Fittings shall conform to ASTM D2466-76a and D1484-75.

2.5 JOINING MATERIALS

A. All joining materials used will be manufactured by IPS Corporation or equal, and will be used in accordance to the manufacturer's written specifications and safety recommendations.

B. All threaded connections (PVC) shall be sealed by using Teflon tape or Teflon paste.

C. All galvanized threads shall be sealed with an approved Teflon base pipe compound.

D. PVC solvent compounds shall be IPS “Weld-On” P-70 purple primer and “Weld-On” P-705, P-711 heavy-bodied gray cement, IPS ‘Weld-On” 721 or approved equal.

2.6 MANUAL ISOLATION GATE VALVES

A. All Valves to conform to the latest revision of AWWA Standard C-509.

B. Gate Valves

1. Valves to conform to the latest revision of AWWA Standard C-509.

2. All parts shall be accessible for repair or maintenance without removing the body from the line.
3. The body, bonnet, and seal plate shall have a factory applied thermoplastic epoxy coating on all interior and exterior surfaces. The wedge shall be cast iron completely encapsulated with a resilient elastomer material permanently bonded to the wedge and shall have a rubber tearing bond that meets ASTM D429.
4. The gate valve shall be rated for 200 psi WWP.
5. Gate valves shall be M+H 4067-07 with hand operated wheel handle or approved equal.
6. Two valve operating keys are to be furnished.

2.7 MANUAL ISOLATION BALL VALVES

A. Valves to conform to the latest revision of AWWA Standard C-509.

B. All parts shall be accessible for repair or maintenance without removing the body from the line.

C. The body shall be brass, 400# WOG, thread ended ball valve with PVC coated round handle. Locking handle is not acceptable.

D. 1”- 3”, Matco-Norca, 758 full port, FIPT x FIPT, forged brass, Chromed Plated Ball, Teflon Seat, Two Piece Body, Ball Valve, 600 PSI non-shock WOG, 150 PSI SWP. Threaded Ends Comply with ANSI B2.1. Valves shall be installed with the handle on the side, parallel with the ground when in the open position. The handle shall be perpendicular to the ground, pointing upward when in the closed position.

2.8 QUICK COUPLING VALVES

A. Quick-coupling valves shall be bronze two-piece construction or iron body, bronze mounted, globe pattern. Pressure rating to be 150 psi. Connections shall be iron pipe, threaded. The cover shall designate non-potable water. Valves to be Rainbird 44-LRC, 1”, two-piece.

B. Contractor is to furnish to the Owner two couplers with either 1 " x 1" or 1" x 3/4" (per Owner's option). Hose swivels shall be attached with two coupler keys.

C. Valves to be housed as shown in the details, for installation in or adjacent to the concrete turf anchor.

D. Work to include layout, trenching, pipe installations, backfill, quick coupling valves, valve boxes, riser assemblies, and related items.

2.9 MASTER VALVE AND REMOTE CONTROL VALVES

A. Valves shall include heavy-duty bronze construction. Pressure rating to be 200 PSI. Connections shall be threaded per detail.

B. Valves to be electrically generated, actuated by a solenoid utilizing AC current, 24 volts, and rated at not more than 9.9 VA. The solenoid is to be sealed so it is completely waterproof.

C. Operation to be normally closed.

D. The valves shall include a 10 year warranty.

E. Solenoid to mounted directly on the valve body or bonnet. All parts and tubing downstream of the entrance opening must be of larger size to permit passage of foreign particles.

F. Construction is to be so that all operating parts are accessible and removable from the top by removing the bonnet without having to disconnect the valve body from the pipeline.

G. Valves to be Hunter IBV-201G-FS and IBV-201G-FS-AS-ADJ, or approved equal. Spray head zones shall utilize adjustable pressure regulator.

2.10 IRRIGATION HEADS

A. SPRINKLER HEADS

1. All pop-up spray heads shall be Model 1800-SAM as manufactured by Rainbird. Turf pop up bodies shall be model 1804-SAM. All nozzles shall be MPR series as shown on drawings. No side inlets shall be included on the pop up bodies.
2. The Contractor shall furnish to the Owner six spare pop up bodies, and 6 spare nozzles of each size / arc utilized.

B. FIELD ROTORS

1. Sprinkler performance must meet or exceed the listed criteria in the legend of the drawing, except gallons per minute flow may not be exceeded by more that 5%.
2. Rotary pop-up sprinklers shall be furnished with gear drive mechanism.
3. Sprinklers shall have a minimum extension in the operating position of 3". The sprinklers shall be spring-loaded for return to the recessed position.
4. Rotating unit shall be stainless steel nozzle turret with independent rotation attached to a non-rotating vertical extension piston for all sprinklers.
5. The drive mechanism must be removable from the top with-out removing the sprinkler housing from the riser. Top removal is to be vandal-resistant, requiring special tool for removal. Two complete sets of any required special maintenance tools are to be furnished.
6. Adjustable heads are not acceptable for use as full-circle (360°) heads.
7. Natural Turf Sprinklers shall be Hunter series, I-20, I-40 series or approved equal.
8. The Contractor shall furnish to the Owner six spare full circle and six spare part circle sprinkler heads of each variety used.

C. Swing joint assemblies:

1. Pre-fabricated Schedule 40 PVC swing joint—Approved manufacturer's Lasco, Rainbird, Spears. Size swing joint assembly as indicated on detail sheet.

2.11 CONTROL WIRE

A. Insulated single strand copper designed for 24-50 volts and UL approved as UF (Underground Feeder). UL and UF designations clearly marked on the insulation jacket of the wire. Minimum gauge: #14. Red or Black jackets for hot wires. White jacket for common wire. Orange jacket for spare wires. All wires to be marked at both ends with valve number or spare number.

2.12 WIRE CONNECTORS

A. 3M-DBY Wire splice kit.

2.13 DETECTABLE MARKING TAPE

A. Detectable marking tape: Christy's 3" detectable marking tape consists of a minimum 5 mil overall thickness; five ply composition; ultra-high molecular weight; 100% virgin polyethylene; acid, alkaline and corrosion resistant. The tape shall have a 20 gauge solid aluminum foil core, encapsulated within 2.55 mil polyethylene backing. Tape tensile strength shall be in accordance with ASTM D882-80A and be not less than 7,800 psi. Tape legend—Caution Irrigation Line Below. TA-DT-3-GI.

2.14 IRRIGATION CONTROLLER

A. The controller shall be permanently installed on the wall in the field maintenance building.

B. The controller shall have 24 independently programmable stations.

1. The controller's programming schedule shall be based on a variable 8-day cycle.
2. Each station shall have the capability of being programmed to automatically start on any quarter hour up to four (4) times per day.
3. Station timing shall be variable from 1 to 99 minutes in one-minute increments.
4. Controller stations' operation shall be sequential to avoid overlapping operation.
5. The controller shall have a water budgeting mode to allow simultaneous increasing or decreasing of watering time for all stations from 25% to 200% in 25% increments.

C. During operation, the controller shall provide a monitoring readout indicating station in operation and time remaining. The controller shall have a 12-hour AM/PM or 24-hours clock.

D. The controller shall be capable of being operated manually at any time. A manual "single station" operation for programmed time or new time setting shall be possible without affecting the original program.

E. The controller shall have a backup program for standby operation in the event of a program loss and a rechargeable battery back-up to maintain program during power loss.

F. A terminal block is required for all valve wire connections at the controller.

G. Furnish and install a multi station modules as required mounted in the manufacturer's stainless steel, wall mount, cabinet assembly with level 4 surge protection.

H. Controller shall be Hunter, ICC2, with a stainless steel wall mount enclosure.

I. Provide Remote Control receiver and controller with all necessary cables and connections for hand held operation. Product to be Hunter ROAM-KIT.

2.15 MARKING TAGS

A. All appurtenances shall be installed with polyurethane warning tags manufactured by T. Christy Enterprises or approved equal. Tags shall read valve number, which shall match the zone valve designation at the controller. Tags shall be purple, with black ink.

2.16 VALVE BOXES

A. Valve boxes shall be fabricated from a durable, weather-resistant plastic material resistant to sunlight and chemical action of soils.

B. The potable valve box covers shall be green in color and secured with a hidden latch mechanism or bolts.

C. The cover and box shall be capable of sustaining a load of 1,500 pounds.

D. Valve box extensions shall be by the same manufacturer as the valve box.

E. Automatic control valve boxes shall be Carson No. 1420 Jumbo Boxes Valve box covers shall be marked "RCV" with the valve identification number "heat branded" onto the cover in 2 inch high letters / numbers.

F. Ball, gate and quick coupler valve boxes shall be Carson No. 1220 rectangular plastic boxes with plastic lids. Valve box covers shall be marked with either "BV", "GV" or "QCV" "heat branded" onto the cover in 2 inch high letters.

PART 3 - EXECUTION

3.1 TRENCH EXCAVATION

A. Trenches shall be excavated to the line and grade indicated in the plans and specifications. Except for unusual circumstances where approved by the Engineer, the trench site shall be excavated to only such width as is necessary for adequate working space. The top width of the trench will generally not exceed 18" for sizes 2-1/2" and smaller. The trench shall be kept free from water until all connections are completed. No water is to be permitted in the trenches until jointing material has set in the case of solvent and weld joints. Surface water shall be diverted so as not to enter the trench. Boulders, rocks, roots and other obstructions shall be entirely removed or cut out to the width of the trench and to a depth 6" below the bottom of the pipe.

B. Coordinate trench depths to provide a minimum of 8" clearance below the new subsurface drainage system.

C. Trenches, where applicable, shall be excavated to a depth to provide 24" cover minimum below finish grade over piping in paved areas areas, and minimum 18” cover over pipe in softball fields for both laterals and main line piping.

3.2 INSTALLATION OF PLASTIC PIPING

A. Pipe couplings and fittings shall be handled and installed in accordance with the recommendations of the pipe manufacturer. The chemical used in solvent welding are intended to penetrate the surface of both pipe and fitting, which after curing, result in a complete fusion at the joint. Use solvent and cement only as recommended by the pipe manufacturer.

B. Solvent welds:

1. Follow all recommendations of the approved cement manufacturer.
2. Remove all dust, dirt and moisture from the surfaces to be welded.
3. Make up solvent welds only when environmental conditions are appropriate.
4. Check all fittings for correct position before solvent weld sets.
5. Allow at least 15 minutes set up (curing) time for each welded joint before moving or handling.
6. Do not introduce flow or pressure until the manufacturers recommended set-up and cure time has elapsed.

C. Plastic to Metal Connections: On plastic to metal connections, work the metal connection first. Use Perma-Tex No. 2, Teflon tape, or similar non-hardening material on 3-threaded connections. Liquid Teflon is not acceptable. Light wrench pressure is all

that should be used. Connections between metal and plastic are to be threaded adapters, except where indicated in the Details.

D. Curing: Prior to introducing water into the piping, a minimum of two hours curing time for the plastic joint connections shall transpire.

3.3 QUICK COUPLING VALVE (QCV) INSTALLATION

A. All piping shall be thoroughly flushed through extended risers before quick coupling valves (QCV) are attached.

B. Quick coupling valves shall be installed as indicated in the details, perpendicular to the surface. Valve top to be 1" to 1-1/2" below inside surface of box lid.

C. When installing QCV the top nipple of the riser assembly is to be threaded to QCV above ground, carefully checking so as not to cross-thread. Then thread nipple with QCV to intermediate coupling.

3.4 SPRINKLER INSTALLATION

A. All piping shall be thoroughly flushed through extended risers before sprinklers are attached.

B. Sprinklers shall be installed as indicated in the details, perpendicular to the surface.

C. When installing sprinklers, the top nipple of the riser assembly is to be threaded to sprinkler above ground, carefully checking so as not to cross-thread. Then thread nipple with sprinkler to intermediate coupling.

D. Sprinkler heads located in the natural turf areas shall be installed flush with finish grade.

E. Install sprinkler heads 4” from adjacent hard surfaces (buildings, walls, pavements, etc.).

3.5 QUICK COUPLING VALVE BOX INSTALLATION

A. Valves to be housed in a plastic or aluminum valve box as shown in the details.

3.6 BACKFILLING

A. Sand backfill material shall be placed and compacted around and under the piping and risers by hand tools to height of 6" above the top of all piping. Backfill is to be compacted to 95% minimum density by mechanical tamping. Trench must be free of water during backfilling operation.

B. All backfill around quick coupling valves and sprinkler risers shall be mechanically compacted to 95% minimum density with moisture added.

C. Detectable marking tape: 6” cover over mainline and lateral lines.

3.7 CONTROL WIRE

A. No splices of lead wire between valve and relays without Owner approval. Use approved waterproof splice boxes located in accessible, flush box when necessary and approved by Owner.

B. Bundle wires together and tape at 10 foot intervals. Provide an 18” expansion loop at all sleeve ends, direction changes and at every valve box. Allow expansion coils at zone valves long enough so valve bonnets may be removed and placed outside the valve box for maintenance purposes.

C. Provide a separate hot lead for each automatic valve. One common wire for each controller.

D. Provide three spare wires to the farthest valve in each main line branch or a minimum of one spare wire per four valves whichever is greater. (Spares for expansion or replacement of damaged wire.)

E. Identify all wires at both ends with valve number or spare wire number.

3.8 VALVE BOXES

A. Valve boxes shall be installed in shrub areas whenever possible.

B. Each valve box shall be installed on a foundation of 3/4 inch gravel backfill, 3 cubic feet minimum. Valve boxes shall be installed with their tops 1/2 inch above the surface of surrounding finish grade in lawn areas and 2 inches above finish grade in ground cover areas.

3.9 TESTING

A. Before testing, all piping is to be thoroughly flushed.

B. Request Architect and Owner attendance at each test. Provide a minimum of 24 hour prior notice.

C. Prior to acceptance of work, all pressure piping and fittings shall be subjected to a hydrostatic pressure test of 150 psi. This test shall include all mainline and lateral piping for a minimum of one hour. Leaks and/or imperfections developing under said pressure shall be remedied by the Contractor before final acceptance of the work.

Pressure shall be maintained while the entire installation is inspected. The Contractor shall provide all work connected with the tests. Include temporary above ground piping to connect a riser from each lateral so that the entire system can be tested simultaneously.

D. Blocking shall be in place at the time of testing. Insofar as practical, tests shall be made with valves and risers exposed for inspection.

E. Allowable leakage in gallons per 1,000 lineal feet of pipe is as follows:

3”	3.0 gallons per hour
2"	2.0 gallons per hour
1-1/2" and 1"	1.5 gallons per hour

F. Performance Testing: After system is 100% installed, perform a coverage test to determine whether water coverage and operation of the system is adequate for planting, without areas of excessive flooding, dry spots, areas of insufficient overlap, or excessive overspray. Test to be performed under automatic operation of the controller via the remote radio system. If the irrigation system is determined by Owner to be inadequate due to Contractor’s poor workmanship or materials, it shall be replaced or repaired at Contractor’s expense and both pressure and coverage tests repeated until accepted.

G. Adjusting: Contractor shall substitute or modify up to 10% of the total nozzles as directed by the Owner. Adjustments to the system will be made without additional cost to the Owner.

3.9 INSTRUCTIONS AND LITERATURE

A. Contractor is to conduct training sessions to demonstrate and instruct school personnel on operation and maintenance of all equipment installed.

B. Where applicable, Contractor shall have equipment manufacturers' representatives participate in this session.

C. Contractor is to supply four (4) sets of descriptive literature and parts lists for all equipment furnished.

END OF SECTION 32 80 00

SECTION 33 46 16 – FIELD SUBSURFACE DRAINAGE

PART 1 - GENERAL

1.1 SCOPE OF WORK

A. Furnish and install complete subsurface drainage systems for the natural turf field outfield areas as shown on the plans and the synthetic turf infield areas including western infields (Base Bid) and eastern infields (Additive Alternate #2).

B. Trench to line and grade as shown on the drawings utilizing laser controlled equipment.

C. Dispose of excavated trench material.

D. Install corrugated polyethylene (CPEP) collector tubing. For perforated collector piping, backfill with pea gravel.

E. Remove all loose material from lateral trench bottom.

F. Place a minimum 2" depth of specified washed pea gravel bedding where indicated.

G. For round pipe perforated lateral drainage piping, place a minimum 2" depth of specified washed pea gravel bedding. For flat drainage piping, install perforated lateral piping directly on structural fabric.

H. Upon completion of this work, restore subgrade to specified condition and tolerances, compacted to 95% density with no loose material on surface.

1.2 STANDARD SPECIFICATIONS

A. American Public Works Association, Washington State Chapter, Standard Specifications for Municipal Public Works Construction (APWA) (latest edition).

B. Standard Specifications for Road, Bridge, and Municipal Construction, Washington Department of Transportation, American Public Works Association (WSDOT/APWA)

C. United States Department of Agriculture, Soil Conservation Service, Engineering Standard 606.

1.3 SUBMITTALS

A. Submit to the Engineer for approval:

1. Pea gravel sieve analysis
2. Product data for perforated and non-perforated tubing
3. Product data for all fittings and connections

1.4 RELATED WORK IN OTHER SECTIONS

A. 31 00 00 Earthwork

B. 31 22 16 Field Subgrade Establishment

C. 33 46 23 Permeable Aggregate

1.5 QUALIFICATIONS

A. The subcontractor responsible for field base establishment, field subsurface drainage, and field imported sands and permeable aggregate placement and compaction shall be submitted to the Engineer for approval. Specific qualification requirements are included as follows:

1. Sub-contractor shall be and has been actively and directly engaged in constructing similar natural or synthetic field projects for a period of five (5) or more years and shall provide proof of five (5) or more full size (75,000 SF) sports field base installations completed in the past three (3) years. The Contractor's experience shall include completion of high school, college, or professional level competition fields. The playing field system shall include earthwork, wash water or irrigation systems, drainage and subsurface drainage systems and base aggregate placement and compaction. Provide a listing of all construction contracts (whether completed or in progress) entered into or performed by the subcontractor within the past five years for projects similar in scope, time and complexity to the work called for under this Contract; include the names of the contracts, and the names and contact information of the owners.

PART 2 - PRODUCTS

2.1 PERFORATED AND NON-PERFORATED TUBING

A. The piping shall be corrugated polyethylene drainage tubing. The non-perforated collector tubing shall be smooth interior wall CPEP.

B. Material shall conform to requirements of Type III, Grade 4, Class "C" polyethylene as specified in ASTM D1248.

C. Dimensions:

1. Inside diameter variance shall not exceed -0.0% or +5%.
2. Lengths shall be in coiled configuration with a -0.0% tolerance.

D. Tubing shall conform to U.S. Department of Agriculture Soil Conservation Service, Engineering Standard 606.

E. For round perforated tubing, water inlet areas shall be slotted with a width of 1/16" " 0.020" to a maximum of 3/32" "0.030" uniformly spaced circumferential slots located on the inner depression of the corrugation, totaling a minimum of 1.25 square inches per

lineal foot. The perforations shall provide a clear opening. Tubing with perforations that are punched with a flap type opening or that are not uniform will be rejected.

F. Fittings and Connections:

1. Fittings shall be as furnished by the manufacturer of the pipe.
2. Connections of tubing lengths shall be with split coupling or snap-in-type couplings utilizing polyethylene or construction tape.
3. Tubing is to be inserted into sockets for the full socket length. "Slip-fit" connections will not be permitted.
4. All split coupling connections are to be fully taped. All connections at fittings and connections are to be taped at interface of exposed joint.

2.2 PEA GRAVEL

A. Pea-gravel bedding for perforated pipe shall be clean, washed, uniformly graded 3/8" to 1/8". The pea gravel material graduation must meet the following sieve analysis:

Sieve Size	Percent Passing
1/ 2”	100
3/ 8"	90 - 100
# 4	5 - 15
# 8	0 - 10
# 100	0 - 0.6
# 200 (wet sieve)	0 - 0.4
# 270 (wet sieve)	0 - 0.2

2.3 TESTING

A. Refer to Section 01 40 00, 1.5 for testing requirements.

PART 3 - EXECUTION

3.1 TRENCHING

A. Excavation shall be made to the alignment, elevation, grade and slope as indicated on the drawings.

B. Trenching shall be accomplished utilizing equipment with slope and depth control, such as "Laser Plane Control System", so as to ensure accuracy in the bottom of the trench.

C. No high points above designated invert or calculated trench bottom elevation will be permitted. No sloughing of site material or loose excavated soil will be permitted to remain in the trenches.

D. Surplus excavated soil shall be removed from the field area. Excavated material may not remain on subgrade. Excess soil material shall be disposed of off site.

E. Provide a smooth, even subgrade after removal of the trench material. Subgrade to be compacted to 95% density. Leave no loose material on the subgrade.

3.2 PLACEMENT

A. Excavation below invert grade must be established to a depth so as to provide for specified placement of pea gravel bedding at bottom of pipe elevation prior to laying the tubing.

B. Pea-gravel bedding for perforated pipe shall be clean, washed, and uniformly graded 3/8" to 1/8".

C. No foreign material will be permitted inside, alongside, under, or on top of, installed tubing.

3.3 BACKFILL

A. The backfill for all perforated pipe shall be clean washed pea gravel, uniformly graded 3/8" to 1/8".

B. All trenches to have backfill material "crowned" a minimum of 2" above subgrade to protect from foreign material and provide for ease of location identification. Crowns with foreign material contamination shall be removed prior to placement of base aggregate.

C. Specified bedding shall not be placed until Engineer approves the trench.

D. Trench backfill shall not be placed before Engineer approves perforated pipe placement.

E. During placement of specified trench backfill, pipe must be held in place with a hand device to prevent displacement and provide for achieving specified invert elevation. Do not damage pipe or allow pipe to be displaced by placement of backfill material.

3.4 CONNECTIONS

A. All connections are to be made with approved fittings as recommended by the tubing manufacturer and approved by the Engineer.

B. Tubing is to be inserted into sockets for the entire length. Tape all connections utilizing polyethylene or construction tape.

C. No foreign material will be permitted inside the installed tubing.

D. Cap the ends of all lateral runs as shown on the drainage plan. All open ends during construction are to be temporarily capped or plugged.

E. Connection of laterals to collector drains shall be made with a combination reducing tee and reducing saddle tee or end tee utilizing snap connections.

3.5 EQUIPMENT MOVEMENT

A. No trucks or equipment will be allowed to drive over the top of the trenches except track-equipped machinery utilized in spreading imported sand and/or aggregate granular materials. Backfilled trenches are to be staked and "flagged" 3' above grade a maximum 30' spacing for identity.

END OF SECTION 33 4616

SECTION 33 46 23 – PERMEABLE AGGREGATE

PART 1 - GENERAL

1.1 SCOPE OF WORK

A. Include all labor, material, transportation and services to complete installation of the permeable aggregate base and the permeable aggregate top course as shown on the drawings for the synthetic turf infield (Base Bid and Additive Alternate #2) and bullpen areas including:

1. Final subgrade establishment
2. Structural soil-bearing fabric
3. Base course permeable aggregate
4. Top course permeable aggregate
5. Recycled Plastic Synthetic Turf Edge Anchor
6. Coordinate Inspection and Acceptance by Synthetic Turf Surfacing Contractor and the Engineer, and provide necessary remediation of all known deficiencies.

B. Related Work in Other Sections:

31 00 00 Earthwork
31 22 16 Field Subgrade Establishment
33 46 16 Subsurface Drainage

1.2 STANDARD SPECIFICATIONS

A. Washington State Department of Transportation Standard Specifications, latest edition.

B. American Standard Testing Materials, (ASTM);

C. American Association of State Highway and Transportation Officials, (AASHTO).

1.3 SUBMITTALS

A. Submit to the Engineer for approval:

1. Structural fabric product data
2. Base course permeable aggregate sieve analysis
3. Base course permeable aggregate infiltration rate
4. Top course permeable aggregate sieve analysis
5. Top course permeable aggregate infiltration rate
6. Equipment and procedures to be utilized for the permeable aggregate installation.

1.4 QUALIFICATIONS

A. The subcontractor responsible for field base establishment, field subsurface drainage, field permeable aggregate and field permeable aggregate placement and compaction shall be submitted to the Engineer for approval upon request. Specific qualification requirements are included as follows:

1. Sub-contractor shall be and has been actively and directly engaged in constructing similar natural or synthetic field projects for a period of five (5) or more years and shall provide proof of five (5) or more full size (minimum 75,000 SF) field base installations completed in the past three (3) years. The Contractor's experience shall include completion of high school, college, or professional level competition fields. The playing field system shall include earthwork, washwater or irrigation systems, drainage and subsurface drainage systems and base aggregate placement and compaction. Provide a listing of all construction contracts (whether completed or in progress) entered into or performed by the subcontractor within the past five years for projects similar in scope, time and complexity to the work called for under this Contract; include the names of the contracts, and the names and contact information of the owners.

PART 2 - PRODUCTS

2.1 PERMEABLE STRUCTURAL SOIL-BEARING FABRIC

A. Fabric

1. Material: Fabric to be 100% Polypropylene, non-woven, needle-punched engineering fabric with a minimum weight of 4.0 oz/sy.
2. Physical Properties:

Tensile Strength, lbs., (ASTM D-4632):	100
Elongation (%), (ASTM D4632):	50
Puncture Strength, (lbs), (ASTM D4833):	65
Mullen Burst Strength (PSI), (ASTM D3786):	200
Trapezoidal Tear, (lbs), (ASTM D4533):	45
Abrasion Res. % Str. Ret., (ASTM D4886):	80
Coefficient. of Perm., cm/sec., (ASTM D4491):	0.22
Flow Rate Gal./Min./Sq.Ft.) (ASTM D4491):	140

3. Material to be Northwest Linings (253) 872 0244, or approved equal.

2.2 BASE COURSE PERMEABLE AGGREGATE

A. The base course permeable aggregate shall be installed below the top course permeable aggregate.

B. Aggregate to be open-graded, fractured, friction course. To ensure free drainage, material to be clean with minimal fines. The compacted base course permeable aggregate shall demonstrate a minimum infiltration rate of 40 inches per hour when the material is

compacted to a minimum density of not less than 98% of maximum dry density as determined by ASTM D698.

C. Base course material to be a minimum of 75% fractured with at least one fractured face by mechanical means on each individual particle larger than 1/4". A sand and gravel source is acceptable for this material.

D. Material Strength and Durability

1. The material shall demonstrate a compressive strength sufficient to support the anticipated construction loading without significant breakage of individual particles, or significant alteration of the particle gradation as approved.
2. Where the compressive strength is suspect, the Engineer will remove a sample of the material that has been placed by the Contractor at the specified density and perform a particle gradation, the results of which will be compared to previous production test results (approved baseline values). If the results of this test indicate higher passing values for any given screen exceeding 10% of the baseline, the material may be considered noncompliant.

E. Gradation: Aggregate to meet the following particle size limitations:

Sieve Size	Percent Passing by Weight
1-1/4"	100
1"	90 - 100
3/4"	80 - 100
1/2"	50 - 80
3/8"	40 - 60
No. 4	15 - 40
No. 8	10-25
No. 30	5 - 15
No. 100	0-3.0
No. 200 (wet sieve)	0 - 2.0

2.3 TOP COURSE PERMEABLE AGGREGATE

A. The top course permeable aggregate shall be installed above the base course aggregate.

B. Aggregate to be open-graded, fractured, friction course. To ensure free drainage, material to be clean with minimal fines. The compacted top course permeable aggregate shall demonstrate a minimum infiltration rate of 20 inches per hour when the material is compacted to a minimum density of not less than 98% of maximum dry density as determined by ASTM D698.

C. The top course material to be 100% fractured. A quarry source is required for this material.

D. Material Strength and Durability

1. The material shall demonstrate a compressive strength sufficient to support the anticipated construction loading without significant breakage of individual particles, or significant alteration of the particle gradation as approved.
2. Where the compressive strength is suspect, the Engineer will remove a sample of the material that has been placed by the Contractor at the specified density and perform a particle gradation, the results of which will be compared to previous production test results (approved baseline values). If the results of this test indicate higher passing values for any given screen exceeding 10% of the baseline, the material may be considered noncompliant.

E. Gradation: Aggregate to meet the following particle size limitations:

Sieve Size	Percent Passing by Weight
3/4"	100
1/2"	90-100
3/8"	70-90
No. 4	30-60
No. 8	20-40
No. 30	5-15
No. 100	2-5
No. 200 (Wet Sieve)	0-3.0
No. 270 (Wet Sieve)	0-1.5

Note: The material must comply with both the sieve and infiltration requirements.

2.4 SYNTHETIC TURF EDGE ANCHOR

A. Include all materials required to provide a secure “nailer” edge for establishment of Permeable Aggregate grade and anchoring of synthetic turf. Contractor may select either Pressure Treated Wood Lumber or Recycled Plastic Lumber and a single anchoring method for uniform use throughout the work.

B. Recycled Plastic Lumber: A recycled plastic lumber nailer board shall be installed per the details to secure the turf. Product shall be manufactured from 100% recycled materials, consisting of HDPE Plastic Lumber. Material should be dimensional lumber in lengths no shorter than 6’.

1. Where attachment is scheduled to concrete curbing, provide minimum 2”x4” nominal dimensional lumber.
2. Manufacturer’s reference: Product is available from RESCO Plastics, Inc., Coos Bay, Oregon. (800) 266-5097.

C. Steel power-load driven or ram-set Concrete Anchor Nail, minimum shank diameter 5/32”, minimum head/washer diameter 3/8”, sufficient length to insure a minimum 2” embedment. Individual anchors shall develop a minimum 450lb shear, 350lb tension in 4,000psi concrete at 2” embedment.

2.5 TESTING

A. Refer to Section 01 40 00, 1.5 for testing of the materials.

B. The Contractor shall coordinate directly with their testing agency relative to the delivery schedules of the imported materials. Sampling will be scheduled each day deliveries occur.

C. The Contractor shall provide testing and surveillance as required to assure materials and work fully comply with contract requirements.

PART 3 - EXECUTION

3.1 SUBGRADE ESTABLISHMENT

A. No work shall be performed in this section until subgrade is complete and accepted by the Engineer as being in compliance with Section 31 22 16 Field Subgrade Establishment.

B. Repair all non-conforming conditions resulting from the execution of then work as specified including but not limited to;

1. Finish subgrade shall be compacted to a minimum 95% maximum dry density at optimum moisture and +/-2% optimum moisture.
2. Subgrade shall be established to within the tolerance of +0.00' or -0.10' of the design subgrade elevation.
3. Subgrade shall demonstrate a firm and unyielding condition.

3.2 STRUCTURAL SOIL-BEARING FABRIC INSTALLATION

A. No loose material is allowed on subgrade prior to placement of structural fabric. Loose material is to be removed prior to placement.

B. Fabric to be laid on smooth, compacted, subgrade surface between drainage trenches.

C. The Engineer prior to placement of structural-bearing fabric requires approval of subgrade conditions.

D. Structural fabric must be flat on stabilized subgrade for full width.

E. Dimensions to be a minimum width of 12.5' and minimum continuous length of 150 lf.

F. When the length of the fabric is not continuous, the lateral seam shall have a minimum overlap of 24".

G. Fabric shall not be folded or turned up along the edges.

H. The fabric shall be field cut as necessary to meet specified tolerances of distance from

drainage trenches.

I. Structural fabric shall be placed between and into subsurface drainage trenches. Fabric shall be laid flat along trench bottom and smooth along trench wall.

J. Stabilization: Immediately upon laying, the fabric is to be covered with base aggregate. No loaded trucks are to be permitted to move over fabric-covered surfaces until a minimum of 4" of aggregate has been placed, except if specifically approved by the Engineer. The Contractor must execute strict, direct - 100% - control of all vehicle movement on site.

3.3 EQUIPMENT MOVEMENT

A. No trucks or equipment will be allowed to drive over the top of the trenches except track-equipped machinery utilized in spreading base aggregate materials, or where a 12" depth base aggregate temporary roadway has been established. Backfilled trenches are to be staked and "flagged" 3' above grade at 20' minimum intervals for identity.

B. In the event non-track traffic is observed or evidenced to cross trenches, the Contractor shall, at their own expense, expose the drainpipe in the area directed for observation by the Engineer, repair any damage promptly and reinstall backfill per specifications.

3.4 AGGREGATE PLACEMENT

A. Moisture Content: Aggregate to contain 3.5% to 4.0% moisture content to ensure that fines do not migrate and to facilitate proper compaction. Contractor must ensure that aggregate leaving the source plant meets this requirement and is required to apply water to aggregate on site to attain and maintain this minimum moisture content in stockpile and during all placement operations.

B. Prior to aggregate placement, remove any foreign material or contamination from the surface of the structural fabric and drainage trench pea gravel.

C. Surface must be free of standing water and subgrade stabilized with structural fabric in place prior to placement.

D. Materials to be placed in layers not exceeding 8" compacted in depth. Each layer must be spread uniformly with equipment that will not cause perceptible separation in gradation (segregation), preferably a self-propelled paving machine.

E. Should there occur, during any stage of the spreading or stockpiling, a separation of the material particles, the Contractor must immediately remove and dispose of segregated material and correct or change handling procedures to prevent any further separation.

3.5 AGGREGATE COMPACTION

A. Each layer shall be compacted to a minimum density of not less than 95% of maximum dry density as determined by ASTM D698 and measured using a nuclear method.

B. Use Static Tandem Drum-type roller of not less than five tons weight.

C. The contractor shall monitor compaction levels to insure the aggregate materials are not over-compacted resulting in infiltration rates that are less than the specified minimum rates.

3.6 AGGREGATE TOLERANCES

A. The Contractor shall utilize a laser plane system for grade control.

B. The surface of the base course permeable aggregate in areas to be covered with top course aggregate shall not deviate from designated compacted grade within the range of –0.50" and +0.00".

C. The surface of the top course permeable aggregate shall not deviate from designated compacted grade within the range of –0.00" and +0.25" and shall not deviate more than ¼” as measured by a 10 foot straight edge.

D. Upon completion of the fine grading, compaction, and Contractor confirmation of conformance with the tolerances, the Contractor shall notify the Engineer and schedule an inspection for approval. The Contractor shall have a laser plane system available to the Engineer for the inspections. The Contractor shall not be authorized to install synthetic turf over the permeable aggregate until it has been inspected and approved by the Engineer.

E. Upon completion of elevation verification, the entire permeable aggregate surface shall be inspected for planarity. Planarity inspection shall be completed in conjunction, coordination with the synthetic turf vendor. The installation foreman for the synthetic turf shall be present at the time of the inspection. Inspection shall consist of stretching a stringline taut over the finished permeable aggregate surface at such interval as may be required to confirm surface planarity and acceptance for installation of synthetic turf surface. Any deviation greater than ¼” shall require remediation efforts as may be required to meet subgrade tolerance.

3.7 SYNTHETIC TURF EDGE ANCHOR

A. Prior to proceeding with Edge Anchor installation, confirm with the Engineer the final elevation for installation relative to adjacent surfaces.

B. The Edge Anchor may be temporarily set with temporary hardware to establish the proper line and grade. This temporary hardware may remain after final installation.

1. Wedge Anchor

a. The Edge Anchor may be temporarily set with power-loads to establish the proper line and grade. This temporary hardware may remain after final installation.
b. Once the initial line and grade has been established, pre-drill the edge anchor and establish a void in the adjacent concrete surface that meets the approved anchor supplier's requirements for proper securing of the anchor.
c. Minimum requirements for anchor installation:

1.) Depth of Embedment: 3" or as recommended by the anchor supplier, whichever is greater.
2.) Horizontal Spacing: no greater than 36" on center and 12" from end of any length of lumber.
3.) Nut Torque: Per approved manufacturer's recommendation.
4.) Do not trim bolt ends. Bolts with trimmed or damaged ends will be rejected and must be removed.

2. Concrete Anchor Nail

a. The Edge Anchor may be temporarily set with power-loads placed at the Contractors option to assist in establishing the proper line and grade. This temporary hardware may remain after final installation.
b. Once the initial line and grade has been established, install the specified ram-set or power-load driven Concrete Anchoring Nails in manner consistent with the approved manufacturers printed instruction and the specified spacing.
c. Minimum requirements for Concrete Anchor Nail installation:

1.) Depth of Embedment: 2" or as recommended by the approved anchor supplier.
2.) Horizontal Spacing: no greater than 21" on center and 6" from end of any length of lumber.
3.) Stagger the spacing of each Anchor up and down within the middle one-half the face of the Recycled Edge Anchor.

END OF SECTION 33 46 23