OREGON INSTITUTE OF TECHNOLOGY
NOTICE OF PUBLIC IMPROVEMENT CONTRACT OPPORTUNITY

INVITATION TO BID #2015-01
TRACK & SOCCER PROJECT
February 6, 2015

The Oregon University System ("OUS") by and through the Oregon Institute of Technology ("Oregon Tech") is accepting sealed bids for a public improvement project at 3201 Campus Drive, Klamath Falls, OR 97601 until **March 4, 2015, 1:00 PM,** Pacific Time for the Track & Soccer Project.

A **Mandatory Pre-Bid Conference** will be conducted on February 19, 2015 at 12:00 PM. Bidders shall meet with Oregon Tech representatives in the Mcloughlin Conference Room of the College Union located at 3201 Campus Drive, Klamath Falls, OR for that purpose. Attendance will be documented through a sign-in sheet prepared by the Oregon Tech representative. Prime bidders who arrive more than 10 minutes after the start time of the meeting (as stated in the solicitation and by the Oregon Tech representative's watch) or after the discussion portion of the meeting (whichever comes first) shall not be permitted to sign in and will not be permitted to submit a bid on the project.

Oregon Tech has qualified the following general contracting firms as eligible to bid on this Project. Except for the below firms, no other general contracting firms may bid on this Project. Subcontracting firms are encouraged to reach out directly with the below referenced contact for each firm for subcontracting opportunities.

Emerick Construction	Jordan Fell, Special Projects Director jfell@emerick.com 503-777-5531 www.emerick.com
Field Turf	Gregory Weisbrich, Const. Mgr. and Site Superintendent gweisbrich@fieldturf.com 425-246-8087
Hellas Construction	Tommy McDougal, Vice President tmcdougal@hellasconstruction.com 512-250-2910
OHNO Construction	Kelsey Sardeson, Estimating Assistant estimating@ohnoconstruction.com 206-325-1529

Bids will be opened and publicly read aloud by an Oregon Tech representative on March 4, 2015 at 1:15 PM, in the Mcloughlin Conference Room of the College Union, located at 3201 Campus Drive, Klamath Falls, OR 97601. The bid results will also be published on the OUS Procurement Gateway shortly after the bid opening.

Bids will be received on a lump-sum basis for all of the Work. Bid packets may be obtained on the **OUS Procurement Gateway website (https://secure.ous.edu/bid/).**

Prevailing Wage Rates requirements apply to this Project because the maximum compensation for all Owner-contracted Work is more than $50,000. Contractor and all subcontractors shall comply with the provisions of ORS 279C.800 through 279C.870, relative to Prevailing Wage Rates and the required public works bond, as outlined in Sections C.1, C.2 and G.2. of the Oregon Tech General Conditions for Public Improvement. The Bureau of Labor and Industries (BOLI) wage rates and requirements set forth in the following BOLI booklet (and any listed amendments to that booklet), which are incorporated herein by reference, apply to the Work authorized under this Agreement:

PREVAILING WAGE RATES for Public Works Contracts in Oregon, January 1, 2015 which can be downloaded at the following web address: http://www.oregon.gov/boli/WHD/PWR/Pages/pwr_state.aspx. The Work will take place in Klamath County, Oregon

Oregon Tech encourages bids from Minority, Women, and Emerging Small Businesses.

By:
George Marlton
Exec. Dir. Procurement Contracts & Risk
27500 SW Parkway Ave.
Wilsonville, OR 97070
503-821-1277
George.Marlton@oit.edu

OREGON INSTITUTE OF TECHNOLOGY
PUBLIC IMPROVEMENT CONTRACT
INSTRUCTIONS TO BIDDERS

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INSTRUCTIONS TO BIDDERS

Oregon Administrative Rules Chapter 580, Divisions 61 and 63 govern this Oregon Tech procurement process.

Article 1. Scope of Work

The work contemplated under this contract with the Oregon State Board of Higher Education, hereinafter referred to as the Owner, includes all labor, materials, transportation, equipment and services necessary for, and reasonably incidental to, the completion of all construction work in connection with the project described in the Project Manual which includes, but is not necessarily limited to, the Notice of Public Improvement Contract Opportunity, Instructions to Bidders, Supplemental Instructions to Bidders, Bid Form, Bid Bond, Public Improvement Agreement Form, Performance Bond, Payment Bond, Oregon Institute of Technology General Conditions for Public Improvement Contracts (2/1/2015), Supplemental General Conditions, Plans, Specifications and Drawings.

Article 2. Examination of Site and Conditions

Before making a bid, the bidder shall examine the site of the work and ascertain all the physical conditions in relation thereto. The bidder shall also make a careful examination of the Project Manual including the plans, specifications, and other contract documents, and shall be fully informed as to the quality and quantity of materials and the sources of supply of the materials. Failure to take these precautions will not release the successful bidder from entering into the contract nor excuse the bidder from performing the work in strict accordance with the terms of the contract.

The Owner will not be responsible for any loss or for any unanticipated costs which may be suffered by the successful bidder as a result of such bidder's failure to be fully informed in advance with regard to all conditions pertaining to the work and the character of the work required. No statement made by an officer, agent, or employee of the Owner in relation to the physical conditions pertaining to the site of the work will be binding on the Owner, unless covered by the Project Manual or an Addendum.

Article 3. Interpretation of Project Manual and Approval of Materials Equal to Those Provided in the Specifications

If any bidder contemplating submitting a bid for the proposed contract is in doubt as to the true meaning of any part of the plans, specifications or forms of contract documents, or detects discrepancies or omissions, such bidder may submit to the Architect (read "Engineer" throughout as appropriate) a written request for an interpretation thereof at least 10 calendar days prior to the date set for the bid closing.

When a prospective bidder seeks approval of a particular manufacturer's material, process or item of equal value, utility or merit other than that designated by the Architect in the Project Manual, the bidder may submit to the Architect a written request for approval of such substitute at least 10 calendar days prior to the date set for the bid closing. The prospective bidder submitting the request will be responsible for its prompt delivery.

Requests of approval for a substitution from that specified shall be accompanied by samples, records of performance, certified copies of tests by impartial and recognized laboratories, and such other information as the Architect may request.

To establish a basis of quality, certain processes, types of machinery and equipment or kinds of materials may be specified in the Project Manual either by description of process or by designating a manufacturer by name and referring to a brand or product designation or by specifying a kind of material. Whenever a process is designated or a manufacturer's name, brand or item designation is given, or whenever a process or material covered by patent is designated or described, it shall be understood that the words "or approved equal" follow such name, designation or description, whether in fact they do so or not.

Any interpretation of the Project Manual or approval of manufacturer's material will be made only by an Addendum duly issued. A copy of each Addendum will be mailed or delivered to each bidder receiving a Project Manual and becomes a part thereof. The Owner will not be responsible for any other explanation or interpretation of the Project Manual nor for any other approval of a particular

manufacturer's process or item.

When the Architect approves a substitution by Addendum, it is with the understanding that the Contractor guarantees the substituted article or material to be equal or better than the one specified.

Article 4. Security to Be Furnished by Each Bidder

Each bid must be accompanied by either 1) a cashier's check or a certified check drawn on a bank authorized to do business in the State of Oregon, or 2) a bid bond described hereinafter, executed in favor of the State of Oregon and the Oregon State Board of Higher Education, for an amount equal to 10 percent of the total amount bid as a guarantee that if awarded the contract the bidder will execute the contract and give a performance bond and payment bond as required. The successful bidder's check or bid bond will be retained until the bidder has entered into a satisfactory contract and furnished a 100 percent performance bond and 100 percent payment bond. The Owner reserves the right to hold the bid security as described in Article 10 hereof. Should the successful bidder fail to execute and deliver the contract as provided for in Article 12, including a satisfactory performance bond and payment bond within 20 calendar days after the bid has been accepted by the Owner, then the contract award made to such bidder may be considered canceled and the bid security may be forfeited as liquidated damages at the option of the Owner. The date of the acceptance of the bid and the award of the contract as contemplated by the Project Manual shall mean the date of acceptance specified in the Notice of Award.

Article 5. Execution of Bid Bond

Should the bidder elect to utilize a bid bond as described in Article 4 in order to satisfy the bid security requirements, such form must be completed in the following manner:

A. Bid bonds must be executed on Oregon University System forms, which will be provided to all prospective bidders by the Owner.

B. The bid bond shall be executed on behalf of a bonding company licensed to do business in the State of Oregon.

C. In the case of a sole individual, the bond need only be executed as principal by the sole individual. In the case of a partnership, the bond must be executed by at least one of the partners. In the case of a corporation, the bond must be executed by stating the official name of the corporation under which is placed the signature of an officer authorized to sign on behalf of the corporation followed by such person's official capacity, such as president, etc. This signature shall be attested by the secretary or assistant secretary of the corporation. The corporation seal should then be affixed to the bond.

D. The name of the surety must be stated in the execution over the signature of its duly authorized attorney-in-fact and accompanied by the seal of the surety corporation.

Article 6. Execution of the Bid Form

Each bid shall be made in accordance with the sample Bid Form accompanying these instructions; the appropriate signatures for a sole individual, partnership, corporation or limited liability corporation shall be added as noted in Article 5C above; numbers pertaining to base bids shall be stated both in writing and in figures; the bidder's address shall be typed or printed.

The Bid Form relates to bids on a specific Project Manual. Only the amounts and information asked for on the Bid Form furnished will be considered as the bid. Each bidder shall bid upon the work exactly as specified and provided in the Bid Form. The bidder shall include in the bid a sum to cover the cost of all items contemplated by the Contract. The bidder shall bid upon all alternates that may be indicated on the Bid Form. When bidding on an alternate for which there is no charge, the bidder shall write the words "No Charge" in the space provided on the Bid Form. If one or more alternates is shown on the Bid Form, the bidder shall indicate whether each is "add" or "deduct."

The Bid Form included in the Project Manual is a sample. One additional copy of the Bid Form may be furnished with the Project Manual. One additional copy of the Bid Bond form may also be provided with the Project Manual. Only one copy needs to be

submitted with the bid.

Article 7. Prohibition of Alterations to Bid

Bids which are incomplete, or contain ambiguities or conditions not provided for in the Bid Form, may be rejected.

Article 8. Submission of Bid

Each bid shall be sealed in an envelope, properly addressed to the appropriate project Owner within the Oregon University System, showing on the outside of the envelope the name of the bidder and the name of the project. Bids will be received at the time and place stated in the Advertisement for Bids.

Article 9. Bid Closing and Opening of Bids

All bids must be received by the Owner at the place and time set for the bid closing. Any bids received after the scheduled closing time for receipt of bids will be rejected and returned to the bidder unopened.

At the time of opening and reading of bids, each bid received will be publicly opened and read aloud, irrespective of any irregularities or informalities in such bids.

Article 10. Acceptance or Rejection of Bids by Owner

Unless all bids are rejected, the Owner will award a contract based on the lowest responsive bid from a responsible bidder. If that bidder does not execute the contract, it will be awarded to the next lowest responsible bidder or bidders in succession.

The Owner reserves the right to reject all bids and to waive minor informalities. The procedures for contract awards shall be in compliance with the provisions of Oregon Administrative Rules adopted by the Owner.

The Owner reserves the right to hold the bid and bid security of the three lowest bidders for a period of 30 calendar days from and after the time of bid opening pending award of the contract. Following award of the contract the bid security of the three lowest bidders may be held 20 calendar days pending execution of the contract. All other bids will be rejected and bid security will be returned.

In determining the lowest bidder, the Owner reserves the right to take into consideration any or all authorized base bids as well as alternates or combinations indicated in the Bid Form.

If such bid has not been accepted within 30 calendar days after the opening of the bids, each of the three lowest bidders may withdraw the bid submitted and request the return of the bid security.

Article 11. Withdrawal of Bid

At any time prior to the time and place set for the bid closing, a bidder may withdraw the bid. This will not preclude the submission of another bid by such bidder prior to the time set for the bid closing.

After the time set for the bid closing, no bidder will be permitted to withdraw its bid within the time frames specified in Article 10 for award and execution, except as provided for in that Article.

Article 12. Execution of Contract, Agreement, Performance Bond and Payment Bond

The Owner will provide the successful bidder with contract forms within seven (7) calendar days after the award of the Contact. The bidder is required to execute the contract forms as provided, including a performance bond and a payment bond from a surety company licensed to do surety business in the State of Oregon, within seven (7) calendar days after receipt of the contract forms. The contract forms shall be delivered to the Owner in the number called for and to the location as noted in the Notice of Award.

Article 13. Recyclable Products

Contractors will use recyclable products to the maximum extent economically feasible in the performance of the Contract.

Article 14. Clarification or Protest of the Solicitation Document or Specifications

Any request for clarification or protest of the solicitation document or specifications must be submitted in the manner provided for in OAR 580-061-0100 and 580-061-0145 to:

George Marlton
Exec. Dir. Procurement Contracts & Risk
27500 SW Parkway Ave.
Wilsonville, OR 97070
503-821-1277
Purchasing@oit.edu

A protest of the Solicitation Document must be received within seven (7) business days of the issuance of the bid or within three (3) business days of issuance of an addendum.

Requests for clarification may be submitted no less than five (5) business days prior to the bid Closing Date.

Article 15. Protest of Intent to Award

Owner will name the apparent successful Bidder in a "Notice of Intent to Award" letter. Identification of the apparent successful Bidder is procedural only and creates no right in the named Bidder to award of the contract. Competing Bidders will be notified by publication of the Notice of Intent to Award on the OUS Procurement Gateway of the selection of the apparent successful Bidder(s) and shall be given seven (7) calendar days from the date on the "Notice of Intent to Award" letter to review the file at the Purchasing and Contract Services office and file a written protest of award, pursuant to OAR 580-061-0145. Any award protest must be in writing and must be delivered by hand delivery, mail or email to the address for the Purchasing and Contract Services Office as listed in the Contact Information section of the bid.

OREGON INSTITUTE OF TECHNOLOGY
PUBLIC IMPROVEMENT CONTRACT

SUPPLEMENTAL INSTRUCTIONS TO BIDDERS

Project Name: Track & Soccer Project

The following modifies the Oregon Institute of Technology "Instructions to Bidders" for this Project. Except as modified in these Supplemental Instruction to Bidders, all other terms and conditions of the Instructions to Bidders shall remain in effect.

1. **Good Faith Effort:** The Oregon Institute of Technology has implemented a policy to increase participation by Historically Underrepresented Businesses. Historically Underrepresented Businesses are Oregon certified and self-identified minority, women and emerging small business as well as firms that are certified federally or by another state or entity with substantially the similar requirements of the State of Oregon.

   Bidders must perform Good Faith Effort and submit **Form 1 and Form 2** for the Bidders Bid to be considered responsive. **Form 1 and Form 2** must be submitted within **two (2) hours** after the Closing Date and Time. Good Faith Effort is a requirement of a prime contractor to reach out to at least three Historically Underrepresented Business Subcontractors for each Division of Work that will be subcontracted out. If less than three Historically Underrepresented Business Subcontractors are reasonably available for a particular division of work, the Bidder must specifically note the reason for fewer than three contacts. The outreach should be performed with sufficient time to give the subcontractors at least 5 calendar days to respond to the opportunity. Compliance with the Good Faith Effort and submission of Forms 1, 2 and 3 is a contractual requirement for final payment.

OREGON INSTITUTE OF TECHNOLOGY
GOOD FAITH EFFORT
SUBCONTRACTOR AND SELF-PERFORM WORK LIST
(FORM 1)

Prime Contractor Name: Total Contract Amount:

Project Name: Track & Soccer Project

PRIME SELF-PERFORMING: Identify below ALL GFE Divisions of Work (DOW) to be self-performed. Good Faith Efforts are otherwise required.

DOW BIDDER WILL SELF-PERFORM *(GFE not required)*	

PRIME CONTRACTOR SHALL DISCLOSE AND LIST ALL SUBCONTRACTORS, including those M/W/ESBs that you intend to use on the project.

LIST ALL SUBCONTRACTORS BELOW Use correct legal name of Subcontractor	Division of Work (Painting, electrical, landscaping, etc.) List ALL DOW performed by Subcontractors	DOLLAR AMOUNT OF SUBCONTRACT	If Certified or self-reporting MBE/WBE/ESB Subcontractor Check box		
			MBE	WBE	ESB
Name Address City/St/Zip Phone# OCCB#			☐	☐	☐
Name Address City/St/Zip Phone# OCCB#			☐	☐	☐
Name Address City/St/Zip Phone# OCCB#			☐	☐	☐
Name Address City/St/Zip Phone# OCCB#			☐	☐	☐

GFE SUBCONTRACTOR AND SELF-PERFORM WORK LIST (FORM 1) cont'd

Prime Contractor Name: Total Contract Amount:
Project Name: Track & Soccer Project

LIST ALL SUBCONTRACTORS BELOW Use correct legal name of Subcontractor	Division of Work (Painting, electrical, landscaping, etc.) List ALL DOW performed by Subcontractors	DOLLAR AMOUNT OF SUBCONTRACT	If Certified or self-reporting MBE/WBE/ESB Subcontractor Check box ✔		
			MBE	WBE	ESB
Name Address City/St/Zip Phone# OCCB#			☐	☐	☐
Name Address City/St/Zip Phone# OCCB#			☐	☐	☐
Name Address City/St/Zip Phone# OCCB#			☐	☐	☐
Name Address City/St/Zip Phone# OCCB#			☐	☐	☐
Name Address City/St/Zip Phone# OCCB#			☐	☐	☐
Name Address City/St/Zip Phone# OCCB#			☐	☐	☐
Name Address City/St/Zip Phone# OCCB#			☐	☐	☐

OREGON INSTITUTE OF TECHNOLOGY
GOOD FAITH EFORT
M/W/ESB CONTACT / BIDS RECEIVED LOG
(FORM 2)

Prime Contractor:
Project: Track & Soccer Project

Prime Contractor must contact or endeavor to contact at least 3 M/W/ESB Subcontractors for each Division of Work. Prime Contractor shall record its contacts with M/W/ESB Subcontractors through use of this log (or equivalent) entering all required information. All columns shall be completed where applicable. Additional forms may be copied if needed.

NAME OF M/W/ESB SUBCONTRACTOR	Divisions of Work (Painting, electrical, landscaping, etc.)	Date Solicitation Letter / Fax Sent	PHONE CONTACT		BID ACTIVITY Check Yes or No			REJECTED BIDS (if bid received & not used)		Notes
			Date of Call	Person Receiving Call	Will Bid	Bid Received	Bid Used	Bid Amount	Reason Not Used (Price, Scope or Other. If Other, explain in Notes>>)	
					☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No			
					☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No			
					☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No			
					☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No			
					☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No			
					☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No			
					☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No			

OREGON INSTITUTE OF TECHNOLOGY
GOOD FAITH EFFORT
PROJECT COMPLETION REPORT
(FORM 3)

Prime Contractor Name: Total Contract Amount:
Project Name: Track & Soccer Project

Complete this form and submit with your request for final payment upon the project completion. Please list all subcontractors used for the project. Use additional sheets as necessary.

LIST ALL SUBCONTRACTORS BELOW Use correct legal name of Subcontractor	Division of Work (Painting, electrical, landscaping, etc.) List ALL DOW performed by Subcontractors	FINAL DOLLAR AMOUNT OF SUBCONTRACT	If Certified or self-reported MBE/WBE/ESB Subcontractor Check box		
			MBE	WBE	ESB
Name Address City/St/Zip Phone# OCCB#			☐	☐	☐
Name Address City/St/Zip Phone# OCCB#			☐	☐	☐
Name Address City/St/Zip Phone# OCCB#			☐	☐	☐
Name Address City/St/Zip Phone# OCCB#			☐	☐	☐
Name Address City/St/Zip Phone# OCCB#			☐	☐	☐
Name Address City/St/Zip Phone# OCCB#			☐	☐	☐

BY SIGNING BELOW, I HEREBY CERTIFY THAT THE ABOVE LISTED FIRMS HAVE BEEN UTILIZED BY OUR COMPANY IN THE AMOUNTS REPRESENTED ABOVE AND THAT THE INFORMATION CONTAINED HEREIN IS COMPLETE AND ACCURATE.

____________________________________ _______________
Authorized Signature of Contractor Representative Date

OREGON INSTITUTE OF TECHNOLOGY
PUBLIC IMPROVEMENT CONTRACT

BID BOND

Project Name: Track & Soccer Project

We, _____, as "Principal,"
(Name of Principal)

and _____, an _____ Corporation,
(Name of Surety)

authorized to transact Surety business in Oregon, as "Surety," hereby jointly and severally bind ourselves, our respective heirs, executors, administrators, successors and assigns to pay unto the State of Oregon and the Oregon State Board of Higher Education on behalf of the Oregon Institute of Technology ("Obligee") the sum of ($_____) _____ dollars.

WHEREAS, the condition of the obligation of this bond is that Principal has submitted its proposal or bid to an agency of the Obligee in response to Obligee's procurement document (No. Bid-2015-01) for the project identified as:

_____ which proposal or bid is made a part of this bond by reference, and Principal is required to furnish bid security in an amount equal to ten (10%) percent of the total amount of the bid pursuant to the procurement document.

NOW, THEREFORE, if the proposal or bid submitted by Principal is accepted, and if a contract pursuant to the proposal or bid is awarded to Principal, and if Principal enters into and executes such contract within the time specified in the Instructions to Bidders and executes and delivers to Obligee its good and sufficient Performance Bond and Payment Bond required by Obligee within the time fixed by Obligee, then this obligation shall be void; otherwise, it shall remain in full force and effect.

IN WITNESS WHEREOF, we have caused this instrument to be executed and sealed by our duly authorized

legal representatives this _____day of _____, 20____.

Principal:_____

By:_____
Signature

_____
Official Capacity

Attest:_____
Corporation Secretary

Surety:_____

By: Attorney-In-Fact

_____
Name

_____
Address

_____
City State Zip

_____ _____
Phone Fax

OREGON INSTITUTE OF TECHNOLOGY
PUBLIC IMPROVEMENT CONTRACT

BID FORM

CAMPUS: Oregon Institute of Technology – Klamath Falls Campus
PROJECT: Track & Soccer Project
BID CLOSING: March 4, 2015, 1:00 PM, Pacific Time
BID OPENING: March 4, 2015, 1:15, PM, Pacific Time

FROM: _____
Name of Contractor

TO: Oregon State Board of Higher Education
Oregon Institute of Technology
Procurement & Contract Services
Snell Hall Room 112
3201 Campus Drive
Klamath Falls, OR 97601

1. The Undersigned (*check one of the following and insert information requested*):

____a. An individual doing business under an assumed name registered under the laws of the State of _____; or

____b. A partnership registered under the laws of the State of _____; or

____c. A corporation organized under the laws of the State of _____; or

____d. A limited liability corporation organized under the laws of the State of _____;

hereby proposes to furnish all material and labor and perform all work hereinafter indicated for the above project in strict accordance with the Contract Documents for the Basic Bid as follows:

_____ Dollars ($_____)

and the Undersigned agrees to be bound by the following documents:

- Advertisement for Bids
- Supplemental Instructions to Bidders
- Public Improvement Agreement Form
- Oregon Tech General Conditions
- Prevailing Wage Rates
- Plans and Specifications
- Instructions to Bidders
- Bid Bond
- Performance Bond and Payment Bond
- Supplemental General Conditions
- Payroll and Certified Statement Form
- Drawings and Details

- ADDENDA numbered _____ through_____, inclusive *(fill in blanks)*

2. The Undersigned proposes to add to or deduct from the Base Bid indicated above the items of work relating to the following Alternate(s) as designated in the Specifications:

ALTERNATE #1:	Provide "Sandwich System" Track Surfacing	ADD or DEDUCT: $_____
ALTERNATE #2:	Improved Throwing Events Venue Lawn and Irrigation	ADD or DEDUCT: $_____
ALTERNATE #3:	Add Geothermal Heat Tubing at Slot Drains	ADD or DEDUCT: $_____
ALTERNATE #4:	Bidder Design – Build Geothermal Systems	ADD or DEDUCT: $_____
ALTERNATE #5:	Storage Shed, Perimeter Drainage	ADD or DEDUCT: $_____

3. The Undersigned proposes to add to or deduct from the Base Bid indicated above the items or work relating to the following Unit Price(s) as designated in the Specifications, for which any adjustments in the Contract amount will be made in accordance with Section D of the Oregon Tech General Conditions:

UNIT PRICE #1A:	Treated Subgrade per 10,000sf	ADD or DEDUCT: $_____
UNIT PRICE #1B:	Hydrated Lime per Ton	ADD or DEDUCT: $_____
UNIT PRICE #1C:	Granular Quicklime per Ton	ADD or DEDUCT: $_____
UNIT PRICE #1D:	Calcium Chloride per Ton	ADD or DEDUCT: $_____
UNIT PRICE #1E:	Sodium Chloride per Ton	ADD or DEDUCT: $_____
UNIT PRICE #1F:	Portland Cement per Ton	ADD or DEDUCT: $_____

4. The work shall be completed within the time stipulated and specified in Division 1, Section 01 01 00 of the Specifications.

5. Accompanying herewith is Bid Security which is equal to ten (10) percent of the total amount of the Basic Bid.

6. The Undersigned agrees, if awarded the Contract, to execute and deliver to the Oregon State Board of Higher Education, within twenty (20) calendar days after receiving the Contract forms, an Agreement Form, and a satisfactory Performance Bond and Payment Bond each in an amount equal to one hundred (100) percent of the Contract sum, using forms provided by the Owner. The surety requested to issue the Performance Bond and Payment Bond will be:

_____.

(name of surety company - not insurance agency)

The Undersigned hereby authorizes said surety company to disclose any information to the Owner concerning the Undersigned's ability to supply a Performance Bond and Payment Bond each in the amount of the Contract.

7. The Undersigned further agrees that the Bid Security accompanying the Bid is left in escrow with the Board; that the amount thereof is the measure of liquidated damages which the Owner will sustain by the failure of the Undersigned to execute and deliver the above-named Agreement Form, Performance Bond and Payment Bond, and that if the Undersigned defaults in either executing the Agreement Form or providing the Performance Bond and Payment Bond within twenty (20) calendar days after receiving the Contract forms, then the Bid Security may become the property of the Owner at the Owner's option; but if the Bid is not accepted within thirty (30) calendar days of the time set for the opening of the Bids, or if the Undersigned executes and timely delivers said Agreement Form, Performance Bond and Payment Bond, the Bid Security shall be returned.

8. The Undersigned certifies that: (1) This Bid has been arrived at independently and is being submitted without collusion with and without any agreement, understanding, or planned common course of action with any other vendor of materials, supplies, equipment or services described in the invitation to bid designed to limit independent bidding or competition; and (2) The contents of the Bid have not been communicated by the Undersigned or its employees or agents to any person not an employee or agent of the Undersigned or its surety on any Bond furnished with the Bid and will not be communicated to such person prior to the official opening of the Bid.

9. The undersigned **HAS, HAS NOT** (*circle applicable status*) paid unemployment or income taxes in Oregon within the past 12 months and **HAS, HAS NOT** (*circle applicable status*) a business address in Oregon.

10. The Undersigned agrees, if awarded a contract, to comply with the provisions of ORS 279C.800 through 279C.870 pertaining to the payment of the prevailing rates of wage.

11. Contractor's CCB registration number is _____. As a condition to submitting a bid, a Contractor must be registered with the Oregon Construction Contractors Board in accordance with ORS 701.035 to 701.055, and disclose the registration number. Failure to register and disclose the number will make the bid unresponsive and it will be rejected, unless contrary to federal law.

12. The successful Bidder hereby certifies that all subcontractors who will perform construction work as described in ORS 701.005(2) were registered with the Construction Contractors Board in accordance with ORS 701.035 to 701.055 at the time the subcontractor(s) made a bid to work under the contract.

13. The successful Bidder hereby certifies that, in compliance with the Worker's Compensation Law of the State of Oregon, its Worker's Compensation Insurance provider is _____, Policy No. _____, and that Contractor shall submit Certificates of Insurance as required.

14. Contractor's Key Individuals for this project (supply information as applicable):

Project Executive:_____, Cell Phone: _____,
Project Manager: _____, Cell Phone: _____,
Job Superintendent: _____, Cell Phone: _____,
Project Engineer: _____, Cell Phone: _____.

15. The Undersigned certifies that it has not discriminated against minority, women, or emerging small businesses in obtaining any subcontracts for this project.

16. The Undersigned hereby identifies the following sources for specific tasks (indicate the subcontractor's name or "self performed") and suppliers and products for the following specified materials (use a separate page if necessary).

A. Rubberized Track Surfacing (Base Bid)_____
B. Rubberized Track Surfacing (Alt.1)_____
C. Infilled Synthetic Turf_____
D. Asphalt Track Paving_____
E. Field Subsurface Drainage Installation_____
F. Field Permeable Aggregate Installation_____
G. Geothermal Systems (Alts. 3&4)_____

By signature below, Contractor agrees to be bound by this Bid.

NAME OF FIRM _____

ADDRESS _____

_____

TELEPHONE NO _____

EMAIL _____

SIGNATURE 1) _____
Sole Individual

or 2) _____
Partner

or 3) _____
Authorized Officer of Corporation

Payment information will be reported to the IRS under the name and taxpayer ID # provided above. Information not matching IRS records could subject Contractor to 31 percent backup withholding.

***** *END OF BID* *****

OREGON INSTITUTE OF TECHNOLOGY
PUBLIC IMPROVEMENT AGREEMENT FORM

This Agreement for the Track & Soccer Project (the "Contract"), is made by and between the State of Oregon, acting by and through the Oregon State Board of Higher Education on behalf of the Oregon Institute of Technology, hereinafter called Owner, and **(Insert Contractor's Name)** hereinafter called the Contractor (collectively the "Parties"), shall become effective on **(Insert contract award date)**, or the date this Contract has been signed by all the Parties and all required State of Oregon governmental approvals have been obtained, whichever is later.

WITNESSETH:

1. Contract Price, Contract Documents and Work.

The Contractor, in consideration of the sum of _____(the "Contract Price"), to be paid to the Contractor by Owner in the manner and at the time hereinafter provided, and subject to the terms and conditions provided for in the Instructions to Bidders and other Contract Documents (as defined in the Oregon Institute of Technology General Conditions for Public Improvement Contracts (2/1/2015) referenced within the Instructions to Bidders), all of which are incorporated herein by reference, hereby agrees to perform all Work described and reasonably inferred from the Contract Documents. The Contract Price is the amount contemplated by the Base Bid adjusted for Alternates **[Identify accepted Alternates]**, as indicated in the accepted Bid.

Also, the following documents are incorporated by reference in this Contract and made a part hereof if checked for inclusion [X]:

☐	Oregon Tech General Conditions (2/1/2015)	☐	Prevailing Wage Rages
☐	Supplemental General Conditions	☐	Performance Bond and Payment Bond
☐	Plans, Specifications and Drawings	☐	Payroll and Certified Statement Form
☐		☐	

2. Representatives.

Contractor has named **(Insert Name)** its' Authorized Representative to act on its behalf. Owner designates, or shall designate, its Authorized Representative as indicted below (check one):

☒ Unless otherwise specified in the Contract Documents, the Owner designates Scott Pigman as its Authorized Representative in the administration of this Contract. The above-named individual shall be the initial point of contact for matters related to Contract performance, payment, authorization, and to carry out the responsibilities of the Owner.

☐ Name of Owner's Authorized Representative shall be submitted by Owner in a separate writing.

3. Key Persons.

The Contractor's personnel identified below shall be considered Key Persons and shall not be replaced during the project without the written permission of Owner, which shall not be unreasonably withheld. If the Contractor intends to substitute personnel, a request must be given to Owner at least 30 days prior to the intended time of substitution. When replacements have been approved by Owner, the Contractor shall provide a transition period of at least 10 working days during which the original and replacement personnel

shall be working on the project concurrently. Once a replacement for any of these staff members is authorized, further replacement shall not occur without the written permission of Owner. The Contractor's project staff shall consist of the following personnel:

Project Executive: _____ shall be the Contractor's project executive, and will provide oversight and guidance throughout the project term.

Project Manager: _____ shall be the Contractor's project manager and will participate in all meetings throughout the project term.

Job Superintendent: _____ shall be the Contractor's on-site job superintendent throughout the project term.

Project Engineer: _____ shall be the Contractor's project engineer, providing assistance to the project manager, and subcontractor and supplier coordination throughout the project term.

4. Contract Dates.

COMMENCEMENT DATE: **May 4, 2015**
GRAUDATION CLOSURE: **June 7, 2015 – June 14, 2015**
SUBSTANTIAL COMPLETION DATE: **August 24, 2015**
FINAL COMPLETION DATE: **September 24, 2015**

5. Liquidated Damages.

It is imperative that the Work in this Contract reach Substantial Completion by August 24, 2015, and as further required in the Plans and Specifications and Section 4 of this Contract to give time for Owner to furnish and equip the facility, conduct athletic training, generate revenue through admission sales at soccer competitions, and meet other contractual obligations. The Contractor represents and agrees that the Substantial Completion date is reasonable, that it can meet the Substantial Completion date, and it has taken into account in its Offer the requirements of the Contract Documents, the location, the time allowed for the Work, local conditions, availability of materials, equipment, and labor, and any other factor which may affect performance of the Work.

If the Contactor fails to achieve Substantial Completion as specified above, then the Contractor and Owner agree that it would be extremely difficult to ascertain the damages incurred by Owner for the Contractor's failure. Therefore, Owner and the Contractor agree that in lieu of actual damages for delay, the Contractor shall reimburse Owner a stipulated sum as identified in the below table. The Contractor further agrees the stipulated sum is not a penalty.

Days Post Substantial Completion Date	Stipulated Sum
1-7 calendar days	$750.00 each calendar day.
7-15 calendar days	$1,250.00 each calendar day.
15-21 calendar days	$1,500.00 each calendar day.

Likewise, if the Work does not reach Final Completion as identified in Section 4 of the Contract, then the Contractor shall owe to the Owner, not as a penalty but as liquidated damages, the sum of one thousand five hundred dollars ($1,500.00) per day for each and every calendar day of delay until Final Completion

6. Tax Compliance.

By signature on this Agreement, the undersigned hereby certifies under penalty of perjury that the undersigned is authorized to act on behalf of Contractor and that Contractor is, to the best of the undersigned's knowledge, not in violation of any Oregon Tax Laws. For purposes of this certification, "Oregon tax laws" means a state tax imposed by ORS 320.005 to 320.150 and 403.200 to 403.250, ORS Chapters 118, 314, 316, 317, 318, 321 and 323; the elderly rental assistance program under ORS 310.630 to 310.706; and local taxes administered by the Oregon Department of Revenue under ORS 305.620.

7. Confidential Information.

Contractor acknowledges that it and its employees or agents may, in the course of performing their responsibilities under this Agreement, be exposed to or acquire information that is confidential to Owner or the State of Oregon. Any and all information of any form obtained by Contractor or its employees or agents in the performance of this Agreement shall be deemed confidential information of Owner and of State ("Confidential Information"). Contractor agrees to hold Confidential Information in strict confidence, using at least the same degree of care that Contractor uses in maintaining the confidentiality of its own confidential information, and not to copy, reproduce, sell, assign, license, market, transfer or otherwise dispose of, give, or disclose Confidential Information to third parties or use Confidential Information for

8. Counterparts.

This Agreement may be executed in several counterparts, all of which when taken together shall constitute an agreement binding on all Parties, notwithstanding that all Parties are not signatories to the same counterpart. Each copy of the Agreement so executed shall constitute an original.

9. Integration.

The Contract Documents constitute the entire agreement between the parties. There are no other understandings, agreements or representations, oral or written, not specified herein regarding this Contract. Contractor, by the signature below of its authorized representative, hereby acknowledges that it has read this Contract, understands it, and agrees to be bound by its terms and conditions.

In witness whereof, the State of Oregon, acting by and through the Oregon State Board of Higher Education on behalf of the Oregon Institute of Technology executes this Contract and the Contractor does execute the same as of the day and year first above written.

Contractor DATA:
(Insert Contractor Name & Address)

Contractor NAME _____
Contractor FEDERAL TAX ID # _____
Contractor CCB # _____ Expiration Date:_____

[Payment information will be reported to the IRS under the name and taxpayer ID # provided above. Information must be provided prior to contract approval. Information not matching IRS records could subject Contractor to 31 percent backup withholding.]

Contractor SIGNATURE

By_____
Signature Date

_____
Print Name Title

STATE OF OREGON acting by and through the
OREGON STATE BOARD OF HIGHER EDUCATION
on behalf of the Oregon Institute of Technology

By_____
Name/Title Date

OREGON INSTITUTE OF TECHNOLOGY
PUBLIC IMPROVEMENT CONTRACT
SUPPLEMENTAL GENERAL CONDITIONS

PROJECT: TRACK & SOCCER PROJECT

The following modifies the February 1, 2015 Oregon Institute of Technology General Conditions for Public Improvement Contracts ("Oregon Tech General Conditions") for this Contract. Except as modified below, all other terms and conditions of the Oregon Tech General Conditions shall remain in effect.

The following sections are added to Section D.2 - Delays:

D.2.4 **DAMAGES FOR DELAY – LIQUIDATED DAMAGES**

(a) It is imperative that the Work in this Contract reach Substantial Completion by August 24, 2015, and as further required in the Plans and Specifications and Section 4 of the Contract to give time for Owner to furnish and equip the facility, conduct athletic training, generate revenue through admission sales at soccer competitions, and meet other contractual obligations. The Contractor represents and agrees that the Substantial Completion date is reasonable, that it can meet the Substantial Completion date, and it has taken into account in its Offer the requirements of the Contract Documents, the location, the time allowed for the Work, local conditions, availability of materials, equipment, and labor, and any other factor which may affect performance of the Work.

(b) If the Contactor fails to achieve Substantial Completion as specified above, then the Contractor and Owner agree that it would be extremely difficult to ascertain the damages incurred by Owner for the Contractor's failure. Therefore, Owner and the Contractor agree that in lieu of actual damages for delay, the Contractor shall reimburse Owner a stipulated sum as identified in the below table. The Contractor further agrees the stipulated sum is not a penalty.

Days Post Substantial Completion Date	Stipulated Sum
1-7 calendar days	$750.00 each calendar day.
7-15 calendar days	$1,250.00 each calendar day.
15-21 calendar days	$1,500.00 each calendar day.

Likewise, if the Work does not reach Final Completion by September 24, 2015, as identified in Section 4 of the Contract, then the Contractor shall owe to the Owner, not as a penalty but as liquidated damages, the sum of one thousand five hundred dollars ($1,500.00) per day for each and every calendar day of delay until Final Completion

OREGON INSTITUTE OF TECHNOLOGY
GENERAL CONDITIONS
FOR PUBLIC IMPROVEMENT CONTRACTS

February 1, 2015

INSTRUCTIONS: The attached **Oregon Institute of Technology General Conditions for Public Improvement Contracts ("Oregon Tech General Conditions")** apply to all designated Public Improvement contracts. Changes to the Oregon Tech General Conditions (including any additions, deletions or substitutions) should only be made by attaching Public Improvement Supplemental General Conditions. The text of these Oregon Tech General Conditions should not otherwise be altered.

TABLE OF SECTIONS

OREGON INSTITUTE OF TECHNOLOGYGENERAL CONDITIONS FOR PUBLIC IMPROVEMENT CONTRACTS ("Oregon Tech General Conditions")

SECTION A
GENERAL PROVISIONS

A.1 DEFINITION OF TERMS

In the Contract Documents the following terms shall be as defined below:

APPLICABLE LAWS, means federal, state and local laws, codes, rules, regulations and ordinances applicable to the Work and to the Contract.

ARCHITECT/ENGINEER, means the Person appointed by the Owner to make drawings and specifications and, to provide contract administration of the Work contemplated by the Contract to the extent provided herein or by supplemental instruction of Owner (under which Owner may delegate responsibilities to the Architect/Engineer), in accordance with ORS Chapter 671 (Architects) or ORS Chapter 672 (Engineers) and administrative rules adopted thereunder.

CHANGE ORDER, means a written order which, when fully executed by the Parties to this Contract, constitutes a change to the Contract Documents. Change Orders shall be issued in accordance with the changes provisions in Section D and, if applicable, establish a Contract Price or Contract Time adjustment. A Change Order shall not be effective until executed as a Change Order.

CLAIM, means a demand by Contractor pursuant to Section D.3 for review of the denial of Contractor's initial request for an adjustment of Contract terms, payment of money, extension of Contract Time or other relief, submitted in accordance with the requirements and within the time limits established for review of Claims in these Oregon Tech General Conditions.

CONSTRUCTION CHANGE DIRECTIVE, means a written order by the Owner to the Contractor requiring a change in the Work within the general scope of the Contract Documents, issued under the changes provisions of Section D.

CONTRACT, means the written agreement between the Owner and the Contractor comprised of the Contract Documents which describe the Work to be done and the obligations between the parties.

CONTRACT DOCUMENTS, means the Public Improvement Contract, Oregon Tech General Conditions, Supplemental General Conditions if any, Plans, Specifications, Construction Change Directives, the accepted Offer, Solicitation Document and addenda thereto, Instructions to Offerors, and Supplemental Instructions to Offerors.

CONTRACT PERIOD, as set forth in the Contract Documents, means the total period of time beginning with the full execution of a Contract and, if applicable, the issuance of a Notice to Proceed and concluding upon Final Completion.

CONTRACT PRICE, means the total price reflected in the Contract.

CONTRACT TIME, means any incremental period of time allowed under the Contract to complete any portion of the Work as reflected in the project schedule.

CONTRACTOR, means the Person awarded the Contract for the Work contemplated.

DAYS, are calendar days, including weekdays, weekends and holidays, unless otherwise specified.

DIRECT COSTS, means, unless otherwise provided in the Contract Documents: the cost of materials, including sales tax and the cost of delivery; cost of labor which shall only include the applicable prevailing wage and fringe benefit (if applicable, and if paid to or on behalf of the employee) rate plus a maximum of a 8.67% markup on the prevailing wage (but not the fringe benefit) to cover Contractor's labor burden including but not limited to social security, Medicare, unemployment insurance, workers' compensation insurance; substantiated project cost increases for specific insurance (including, without limitation, Builder's Risk Insurance and Builder's Risk Installation Floater) or bond premiums; rental cost of equipment, and machinery required for execution of the Work; and the additional costs of field personnel directly attributable to the Work; travel expense reimbursement only if specifically authorized and only to the extent allowable under the Oregon Tech Contractor Travel Reimbursement Policy, hereby incorporated by reference.

FINAL COMPLETION, means the final completion of all requirements under the Contract, including Contract Closeout as described in Section K but excluding Warranty Work as described in Section I.2, and the final payment and release of all retainage, if any, released.

FORCE MAJEURE, means an act, event or occurrence caused by fire, riot, war, acts of God, nature, sovereign, or public enemy, strikes, freight embargoes or any other act, event or occurrence that is beyond the control of the party to this Contract who is asserting Force Majeure.

MWESB REPORT, means an accurate report by the Contractor to the Owner identifying all Minority, Women and Emerging Small Business (MWESB) enterprises, as those terms are defined in ORS 200.005, or as self-reporting as otherwise meeting the same requirements of ORS 200.005, receiving contracts throughout the course of the Work. An initial MWESB report is required (see Section E.2.9) and MWESB Reports are required annually (see Section E.2.9) and as a condition of final payment (see Section K.1). The initial report shall include the total number of contracts and subcontracts awarded to MWESB enterprises and the dollar value of their respective contracts and subcontracts. The annual reports shall include the total number of contracts and subcontracts awarded to MWESB enterprises, the dollar value of each, and the expenditure toward each contract and subcontract during the previous twelve (12) months. The final report shall include the total number of contracts and subcontracts awarded to MWESB enterprises and the dollar value of their respective contracts and subcontracts including all Contracts and Change Orders incorporated during the course of the project.

NOTICE TO PROCEED, means the official written notice from the Owner stating that the Contractor is to proceed with the Work defined in the Contract Documents. Notwithstanding the Notice to Proceed, Contractor shall not be authorized to proceed with the Work until all initial Contract requirements, including the Contract, performance bond and payment bond, and certificates of insurance, have been fully executed and submitted to Owner in a suitable form.

OFFER, means a bid in connection with Instructions to Bidders or a proposal in connection with a Request for Proposals, or Solicitation Document. May also be referenced as "Bid", "Quote", or "Proposal" based on the type of Solicitation Document

OFFEROR, means a bidder in connection with Instructions to Bidders or a proposer in connection with a Request for Proposals, or Solicitation Document. May also be referenced as "Bidder", "Quoter" or "Proposer" based on the type of Solicitation Document.

OVERHEAD, means those items which may be included in the Contractor's markup (general and administrative expense and profit) and that shall not be charged as Direct Cost of the Work, including without limitation such Overhead expenses as wages or salary of personnel above the level of foreman (i.e., superintendents and project managers), labor rates and fringe benefits above the applicable prevailing wage and fringe benefit (if applicable, and if paid to or on behalf of the employee), Contractor's labor burden for fringe benefit if paid to the employee,

expenses of Contractor's offices and supplies at the job site (e.g. job trailer) and at Contractor's principal place of business and including expenses of personnel staffing the job site office and Contractor's principal place of business, and Commercial General Liability Insurance and Automobile Liability Insurance.

OWNER, means, until June 30, 2015, the State of Oregon acting by and through the Oregon State Board of Higher Education, in its own right or on behalf of one of the Oregon Institution. On July 1, 2015, OWNER shall mean the Oregon Institute of Technology (Oregon Tech). Owner may elect, by written notice to Contractor, to delegate certain duties to more than one party, including without limitation, to an Architect/Engineer. However, nothing in these Oregon Tech General Conditions is intended to abrogate the separate design professional responsibilities of Architects under ORS Chapter 671 or of Engineers under ORS Chapter 672.

PERSON, means a natural person or entity doing business as a sole proprietorship, a partnership, a joint venture, a corporation, a limited liability company or partnership, or any other entity possessing the legal capacity to contract.

PLANS, means the drawings which show the location, type, dimensions, and details of the Work to be done under the Contract.

PUNCH LIST, means the list of Work yet to be completed or deficiencies which need to be corrected in order to achieve Final Completion of the Contract.

RECORD DOCUMENT, means the as-built Plans, Specifications, testing and inspection records, product data, samples, manufacturer and distributor/supplier warranties evidencing transfer of ownership to Owner, operational and maintenance manuals, shop drawings, Construction Change Directives, MWESB Reports, correspondence, certificate(s) of occupancy, and other documents listed in Subsection B.9.1 of these Oregon Tech General Conditions, recording all Services performed.

SOLICITATION DOCUMENT, means Instructions to Bidders or Offerors or a Request for Proposal or a Request for Quotes or any other written document issued by Owner that outlines the required Specifications necessary to submit a Bid, Proposal, or other response.

SPECIFICATION, means any description of the physical or functional characteristics of the Work, or of the nature of a supply, service or construction item. Specifications may include a description of any requirement for inspecting, testing or preparing a supply, service or construction item for delivery and the quantities or qualities of materials to be furnished under the Contract. Specifications generally will state the results or products to be obtained and may, on occasion, describe the method and manner of doing the Work to be performed. Specifications may be incorporated by reference and/or may be attached to the Contract.

SUBCONTRACTOR, means a Person having a direct contract with the Contractor, or another Subcontractor of any tier, to perform one or more items of the Work.

SUBSTANTIAL COMPLETION, means the date when the Owner accepts in writing the construction, alteration or repair of the improvement to real property constituting the Work or any designated portion thereof as having reached that state of completion when it may be used or occupied for its intended purpose. Substantial Completion of facilities with operating systems occurs only after thirty (30) continuous Days of successful, trouble-free operation of the operating systems as provided in Section K.3.2.

SUBSTITUTIONS, means items that in function, performance, reliability, quality, and general configuration are the same or better than the product(s) specified. Substitutions also means the performance of the Work by a labor force other than what is submitted in the Offer. Approval of any substitute item shall be solely determined by the Owner. The decision of the Owner is final.

PUBLIC IMPROVEMENT SUPPLEMENTAL GENERAL CONDITIONS, means those conditions that remove from, add to, or modify these Oregon Tech General Conditions. Public Improvement Supplemental General Conditions may be included in the Solicitation Document or may be a separate attachment to the Contract.

WORK, means the furnishing of all materials, equipment, labor, transportation, services and incidentals necessary to successfully complete any individual item or the entire Contract and the carrying out of duties and obligations imposed by the Contract Documents.

A.2 SCOPE OF WORK

The Work contemplated under this Contract includes all labor, materials, transportation, equipment and services for, and incidental to, the completion of all construction work in connection with the project described in the Contract Documents. The Contractor shall perform all Work necessary so that the project can be legally occupied and fully used for the intended use as set forth in the Contract Documents.

A.3 INTERPRETATION OF CONTRACT DOCUMENTS

A.3.1 Unless otherwise specifically defined in the Contract Documents, words which have well-known technical meanings or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings. Contract Documents are intended to be complementary. Whatever is called for in one, is interpreted to be called for in all. However, in the event of conflicts or discrepancies among the Contract Documents, interpretations will be based on the following descending order of precedence:

(a) Change Orders and Construction Change Directives, with those of later date having precedence over those of an earlier date;
(b) The Supplemental General Conditions;
(c) Oregon Tech General Conditions;
(d) The Public Improvement Contract;
(e) Construction Change Directive;
(f) Division One (General Requirements) of the Specifications;
(g) Detailed Schedules of finishes, equipment and other items included in the Specifications;
(h) Plans and Specifications (other than Division One and the Detailed Schedules to the Specifications);
(i) Large-scale drawings on Plans;
(j) Small-scale drawings on Plans;
(k) Dimension numbers written on Plans which shall prevail and take precedence over dimensions scaled from Plans;
(l) The Solicitation Document, and any addenda thereto.

A.3.2 In the case of an inconsistency between Plans and Specifications or within either document not clarified by addendum, the better quality or greater quantity of Work shall be provided in accordance with the Owner's interpretation in writing.

A.3.3 If the Contractor finds discrepancies in, or omissions from the Contract Documents, or if the Contractor is in doubt as to their meaning, the Contractor shall at once notify the Owner. Matters concerning and interpretation of requirements of the Contract Documents will be decided by the Owner, who may delegate that duty in some instances to the Architect/Engineer. Responses to Contractor's requests for interpretation of Contract Documents will be made in writing by Owner (or the Architect/Engineer) within any time limits agreed upon or otherwise with reasonable promptness. Interpretations and decisions of the Owner (or Architect/Engineer) will be consistent with the intent of and reasonably inferable from the Contract Documents. Contractor shall not proceed without direction in writing from the Owner (or Architect/Engineer).

A.3.4 References to standard specifications, manuals, codes of any technical society, organization or association, to the laws or regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard specification, manual, code, laws or regulations in effect in the jurisdiction where the project is occurring on the first published date of the Solicitation Document, except as may be otherwise specifically stated.

A.4 EXAMINATION OF PLANS, SPECIFICATIONS, AND SITE

A.4.1 It is understood that the Contractor, before submitting an Offer, has made a careful examination of the Contract Documents; has become fully informed as to the quality and quantity of materials and the character of the Work required; and has made a careful examination of the location and conditions of the Work and the sources of supply for materials. The Owner will in no case be responsible for any loss or for any unanticipated costs that may be suffered by the Contractor as a result of the Contractor's failure to acquire full information in advance in regard to all conditions pertaining to the Work. No oral agreement or conversation with any officer, agent, or personnel of the Owner, or with the Architect/Engineer either before or after the execution of this Contract, shall affect or modify any of the terms or obligations herein contained.

A.4.2 Should the Plans or Specifications fail to particularly describe the materials, kind of goods, or details of construction of any aspect of the Work, Contractor shall have the duty to make inquiry of the Owner and Architect/Engineer as to what is required prior to performance of the Work. Absent Specifications to the contrary, the materials or processes that would normally be used to produce first quality finished Work shall be considered a part of the Contract requirements.

A.4.3 Any design errors or omissions noted by the Contractor shall be reported promptly to the Owner, including without limitation, any nonconformity with Applicable Laws.

A.4.4 If the Contractor believes that adjustments to cost or Contract Time is involved because of clarifications or instructions issued by the Owner (or Architect/Engineer) in response to the Contractor's notices or requests for information, the Contractor must submit a written request to the Owner, setting forth the nature and specific extent of the request, including all time and cost impacts against the Contract as soon as possible, but no later than thirty (30) Days after receipt by Contractor of the clarifications or instructions issued. If the Owner denies Contractor's request for additional compensation, additional Contract Time, or other relief that Contractor believes results from the clarifications or instructions, the Contractor may proceed to file a Claim under Section D.3, Claims Review Process. If the Contractor fails to perform the obligations of Sections A.4.1 to A.4.3, the Contractor shall pay such costs and damages to the Owner as would have been avoided if the Contractor had performed such obligations.

A.5 INDEPENDENT CONTRACTOR STATUS

The service or services to be performed under this Contract are those of an independent contractor as defined in ORS 670.600. Contractor represents and warrants that it is not an officer, employee or agent of the Owner as those terms are used in ORS 30.265.

A.6 RETIREMENT SYSTEM STATUS AND TAXES

Contractor represents and warrants that it is not a contributing member of the Public Employees' Retirement System and will be responsible for any federal or state taxes applicable to payment received under this Contract. Contractor will not be eligible for any benefits from these Contract payments of federal Social Security, employment insurance, workers' compensation or the Public Employees' Retirement System, except as a self-employed individual. Unless the Contractor is subject to backup withholding, Owner will not withhold from such payments any amount(s) to cover Contractor's federal or state tax obligations.

A.7 GOVERNMENT EMPLOYMENT STATUS

A.7.1 If this payment is to be charged against federal funds, Contractor represents and warrants that it is not currently employed by the Federal Government. This does not preclude the Contractor from holding another contract with the Federal Government.

A.7.2 Contractor represents and warrants that Contractor is not an employee of the State of Oregon for purposes of performing Work under this Contract.

SECTION B
ADMINISTRATION OF THE CONTRACT

B.1 OWNER'S ADMINISTRATION OF THE CONTRACT

B.1.1 The Owner shall administer the Contract as described in the Contract Documents (1) during construction (2) until final payment is due and (3) during the one-year period for correction of Work. The Owner will act as provided in the Contract Documents, unless modified in writing in accordance with other provisions of the Contract. In performing these tasks, the Owner may rely on the Architect/Engineer or other consultants to perform some or all of these tasks.

B.1.2 The Owner will visit the site at intervals appropriate to the stage of the Contractor's operations (1) to become generally familiar with and to keep the Owner informed about the progress and quality of the portion of the Work completed, (2) to endeavor to guard the Owner against defects and deficiencies in the Work, and (3) to determine in general if Work is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. The Owner will not make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Owner will neither have control over or charge of, nor be responsible for the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work.

B.1.3 Except as otherwise provided in the Contract Documents or when direct communications have been specifically authorized, the Owner and Contractor shall communicate with each other about matters arising out of or relating to the Contract. Communications by and with the Architect/Engineer's consultants shall be through the Architect/Engineer. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate contractors shall be through the Owner.

B.1.4 Based upon the Architect/Engineer's evaluations of the Contractor's Application for Payment, or unless otherwise stipulated by the Owner, the Architect/Engineer will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

B.2 CONTRACTOR'S MEANS AND METHODS; MITIGATION OF IMPACTS

B.2.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety thereof and, except as stated below, shall be fully and solely

responsible for the jobsite safety of such means, methods, techniques, sequences or procedures.

B.2.2 The Contractor is responsible to protect and maintain the Work during the course of construction and to mitigate any adverse impacts to the project, including those caused by authorized changes, which may affect cost, schedule, or quality.

B.2.3 The Contractor is responsible for the actions of all its personnel, laborers, suppliers, and Subcontractors on the project. The Contractor shall enforce strict discipline and good order among Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of persons who are unfit or unskilled for the tasks assigned to them.

B.3 MATERIALS AND WORKMANSHIP

B.3.1 The intent of the Contract Documents is to provide for the construction and completion in every detail of the Work described. All Work shall be performed in a professional manner and unless the means or methods of performing a task are specified elsewhere in the Contract Documents, Contractor shall employ methods that are generally accepted and used by the industry, in accordance with industry standards.

B.3.2 The Contractor is responsible to perform the Work as required by the Contract Documents. Defective Work shall be corrected at the Contractor's expense.

B.3.3 Work done and materials furnished may be subject to inspection and/or observation and testing by the Owner to determine if they conform to the Contract Documents. Inspection of the Work by the Owner does not relieve the Contractor of responsibility for the Work in accordance with the Contract Documents.

B.3.4 Contractor shall furnish adequate facilities, as required, for the Owner to have safe access to the Work including without limitation walkways, railings, ladders, tunnels, and platforms. Producers, suppliers, and fabricators shall also provide proper facilities and access to their facilities.

B.3.5 The Contractor shall furnish Samples of materials for testing by the Owner and include the cost of the Samples in the Contract Price.

B.4 PERMITS

Contractor shall obtain and pay for all necessary permits, licenses and fees, except for those specifically excluded in the Public Improvement Supplemental General Conditions, for the construction of the Work, for temporary obstructions, enclosures, opening of streets for pipes, walls, utilities, environmental Work, etc., as required for the project. Contractor shall be responsible for all violations of the law, in connection with the construction or caused by obstructing streets, sidewalks or otherwise. Contractor shall give all requisite notices to public authorities.

B.5 COMPLIANCE WITH GOVERNMENT REGULATIONS

B.5.1 Contractor shall comply with Applicable Laws pertaining to the Work and the Contract. Failure to comply with such requirements shall constitute a breach of Contract and shall be grounds for Contract termination. Without limiting the generality of the foregoing, Contractor expressly agrees to comply with the following, as applicable:
(i) Title VI and VII of Civil Rights Act of 1964, as amended; (ii) Section 503 and 504 of the Rehabilitation Act of 1973, as amended; (iii) the Health Insurance Portability and Accountability Act of 1996; (iv) the Americans with Disabilities Act of 1990, as amended; (v) ORS Chapter 659A; as amended; (vi) all regulations and administrative rules established pursuant to the foregoing laws; and (vii) all other applicable requirements of federal and state civil rights and rehabilitation statutes, rules and regulations.

B.5.2 Contractor shall comply with all applicable requirements of federal and state civil rights and rehabilitation statutes, rules and regulations, and

(a) Contractor shall not discriminate against Disadvantaged, Minority, Women or Emerging Small Business enterprises, as those terms are defined in ORS 200.005, or a business enterprise that is owned or controlled by or that employs a disabled veteran, as that term is defined in ORS 408.225, in the awarding of subcontracts.

(b) Contractor shall maintain, in current and valid form, all licenses and certificates required by Applicable Laws or this Contract when performing the Work.

B.5.3 Unless contrary to federal law, Contractor shall certify that it shall not accept a bid from Subcontractors to perform Work as described in ORS 701.005 under this Contract unless such Subcontractors are registered with the Construction Contractors Board in accordance with ORS 701.035 to 701.055 at the time they submit their bids to the Contractor.

B.5.4 Unless contrary to federal law, Contractor shall certify that each landscape contractor, as defined in ORS 671.520(2), performing Work under this Contract holds a valid landscape contractor's license issued pursuant to ORS 671.560.

B.5.5 The following notice is applicable to Contractors who perform excavation Work. ATTENTION: Oregon law requires you to follow rules adopted by the Oregon Utility Notification Center. Those rules are set forth in OAR 952-001-0010 through OAR 952-001-0090. You may obtain copies of the rules by calling the center at (503) 232-1987.

B.5.6 Failure to comply with any or all of the requirements of B.5.1 through B.5.5 shall be a breach of Contract and constitute grounds for Contract termination. Damages or costs resulting from such noncompliance shall be the responsibility of Contractor.

B.6 SUPERINTENDENCE

Contractor shall keep on the site, during the progress of the Work, a competent superintendent and any necessary assistants who shall be satisfactory to the Owner and who shall represent the Contractor on the site. Directions given to the superintendent by the Owner shall be confirmed in writing to the Contractor.

B.7 INSPECTION

B.7.1 Owner shall have access to the Work at all times.

B.7.2 Inspection of the Work will be made by the Owner at its discretion. The Owner will have authority to reject Work that does not conform to the Contract Documents. Any Work found to be not in conformance with the Contract Documents, in the discretion of the Owner, shall be removed and replaced at the Contractor's expense.

B.7.3 Contractor shall make or obtain at the appropriate time all tests, inspections and approvals of portions of the Work required by the Contract Documents or by Applicable Laws or orders of public authorities having jurisdiction. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections and approvals. Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work. The Contractor shall give the Owner timely notice of when and where tests and inspections are to be made so that the Owner may be present for such procedures. Required certificates of testing, inspection or approval shall, unless otherwise required

by the Contract Documents, be secured by the Contractor and promptly delivered to the Owner.

B.7.4 As required by the Contract Documents, Work done or material used without required inspection or testing and/or without providing timely notice to the Owner may be ordered removed at the Contractor's expense.

B.7.5 If directed to do so any time before the Work is accepted, the Contractor shall uncover portions of the completed Work for inspection. After inspection, the Contractor shall restore such portions of Work to the standard required by the Contract. If the Work uncovered is unacceptable or was done without required testing or inspection or sufficient notice to the Owner, the uncovering and restoration shall be done at the Contractor's expense. If the Work uncovered is acceptable and was done with sufficient notice to the Owner, the uncovering and restoration will be paid for pursuant to a Change Order.

B.7.6 If any testing or inspection reveals failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure, including those of repeated procedures and compensation for the Owner's and Architect/Engineer's services and expenses, shall be at the Contractor's expense.

B.7.7 When the United States government participates in the cost of the Work, or the Owner has an agreement with other public or private organizations, or if any portion of the Work is being performed for a third party or in close proximity to third party facilities, representatives of these organizations shall have the right to inspect the Work affecting their interests or property. Their right to inspect shall not make them a party to the Contract and shall not interfere with the rights of the parties of the Contract. Instructions or orders of such parties shall be transmitted to the Contractor, through the Owner.

B.8 SEVERABILITY

If any provision of this Contract is declared by a court to be unenforceable, illegal, or in conflict with any law, the validity of the remaining terms and provisions shall not be affected and the rights and obligations of the parties shall be construed and enforced as if the Contract did not contain the particular provision held to be invalid.

B.9 ACCESS TO RECORDS

B.9.1 Contractor shall keep, at all times on the Work site, one record copy of the complete Contract Documents, including the Plans, Specifications, Construction Change Directives and addenda, in good order and marked currently to record field changes and selections made during construction, and one record copy of Shop Drawings, Product Data, Samples and similar submittals, and shall at all times give the Owner access thereto.

B.9.2 Contractor shall retain and the Owner and its duly authorized representatives shall have access, for a period not less than ten (10) years, to all Record Documents, financial and accounting records, and other books, documents, papers and records of Contractor which are pertinent to the Contract, including records pertaining to Overhead and indirect costs, for the purpose of making audit, examination, excerpts and transcripts. If for any reason, any part of the Work or this Contract shall be subject to litigation, Contractor shall retain all such records until all litigation is resolved and Contractor shall continue to provide Owner and/or its agents with full access to such records until such time as all litigation is complete and all periods for appeal have expired and full and final satisfaction of any judgment, order or decree is recorded and Owner receives a record copy of documentation from Contractor.

B.10 WAIVER

Failure of the Owner to enforce any provision of this Contract shall not constitute a waiver or relinquishment by the Owner of the right to such performance in the future nor of the right to enforce any other provision of this Contract.

B.11 SUBCONTRACTS AND ASSIGNMENT

B.11.1 Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound by the terms and conditions of these Oregon Tech General Conditions, and to assume toward the Contractor all of the obligations and responsibilities which the Contractor assumes toward the Owner thereunder, unless (1) the same are clearly inapplicable to the subcontract at issue because of legal requirements or industry practices, or (2) specific exceptions are requested by Contractor and approved in writing by Owner. Where appropriate, Contractor shall require each Subcontractor to enter into similar agreements with sub-subcontractors at any level.

B.11.2 At Owner's request, Contractor shall submit to Owner prior to their execution either Contractor's form of subcontract, or the subcontract to be executed with any particular Subcontractor. If Owner disapproves such form, Contractor shall not execute the form until the matters disapproved are resolved to Owner's satisfaction. Owner's review, comment upon or approval of any such form shall not relieve Contractor of its obligations under this Agreement or be deemed a waiver of such obligations of Contractor.

B.11.3 Contractor shall not assign, sell, or transfer its rights, or delegate its responsibilities under this Contract, in whole or in part, without the prior written approval of the Owner. No such written approval shall relieve Contractor of any obligations of this Contract, and any transferee shall be considered the agent of the Contractor and bound to perform in accordance with the Contract Documents. Contractor shall remain liable as between the original parties to the Contract as if no assignment had occurred.

B.12 SUCCESSORS IN INTEREST

The provisions of this Contract shall be binding upon and shall accrue to the benefit of the parties to the Contract and their respective permitted successors and assigns.

B.13 OWNER'S RIGHT TO DO WORK

Owner reserves the right to perform other or additional work at or near the project site with other forces than those of the Contractor. If such work takes place within or next to the project site, Contractor shall coordinate work with the other contractors or forces, cooperate with all other contractors or forces, carry out the Work in a way that will minimize interference and delay for all forces involved, place and dispose of materials being used so as not to interfere with the operations of another, and join the Work with the work of the others in an acceptable manner and perform it in proper sequence to that of the others. The Owner will resolve any disagreements that may arise between or among Contractor and the other contractors over the method or order of doing all work (including the Work). In case of unavoidable interference, the Owner will establish work priority (including the Work) which generally will be in the sequence that the contracts were awarded.

B.14 OTHER CONTRACTS

In all cases and at any time, the Owner has the right to execute other contracts related to or unrelated to the Work of this Contract. The Contractor of this Contract shall fully cooperate with any and all other contractors without additional cost to the Owner in the manner described in section B.13.

B.15 GOVERNING LAW

This Contract shall be governed by and construed in accordance with the laws of the State of Oregon without regard to principles of conflict of laws.

B.16 LITIGATION

Any Claim between Owner and Contractor that arises from or relates to this Contract and that is not resolved through the Claims Review Process in Section D.3 shall be brought and conducted solely and exclusively within the Circuit Court of Marion County for the State of Oregon; provided, however, if a Claim must be brought in a federal forum, then it shall be brought and conducted solely and exclusively within the United States District Court for the District of Oregon. In no event shall this section be construed as a waiver by the State of Oregon on any form of defense or immunity, whether sovereign immunity, governmental immunity, immunity based on the Eleventh Amendment to the Constitution of the United States or otherwise, from any claim or from the jurisdiction of any court. CONTRACTOR, BY EXECUTION OF THIS CONTRACT, HEREBY CONSENTS TO THE IN PERSONAM JURISDICTION OF THE COURTS REFERENCED IN THIS SECTION B.16.

B.17 ALLOWANCES

B.17.1 The Contractor shall include in the Contract Price all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct.

B.17.2 Unless otherwise provided in the Contract Documents:

(a) when finally reconciled, allowances shall cover the cost of the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;

(b) Contractor's costs for unloading and handling at the site, labor, installation costs, Overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the Contract Price but not in the allowances;

(c) whenever costs are more than or less than allowances, the Contract Price shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (i) the difference between actual costs and the allowances under Section B.17.2(a) and (2) changes in Contractor's costs under Section B.17.2(b).

(d) Unless Owner requests otherwise, Contractor shall provide to Owner a proposed fixed price for any allowance work prior to its performance.

B.18 SUBMITTALS, SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

B.18.1 The Contractor shall prepare and keep current, for the Architect's/Engineer's approval (or for the approval of Owner if approval authority has not been delegated to the Architect/Engineer), a schedule and list of submittals which is coordinated with the Contractor's construction schedule and allows the Architect/Engineer reasonable time to review submittals. Owner reserves the right to finally approve the schedule and list of submittals. Submittals include, without limitation, Shop Drawings, Product Data, and Samples which are described below:

(a) Shop Drawings are drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or a Subcontractor (including any subsubcontractor), manufacturer, supplier or distributor to illustrate some portion of the Work.

(b) Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

(c) Samples are physical examples which illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.

B.18.2 Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents. The purpose of their submittal is to demonstrate for those portions of the Work for which submittals are required by the Contract Documents the way by which the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents. Review of submittals by the Architect/Engineer is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, or for approval of safety precautions or, unless otherwise specifically stated by the Architect/Engineer, of any construction means, methods, techniques, sequences or procedures, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect/Engineer's review of the Contractor's submittals shall not relieve the Contractor of its obligations under the Contract Documents. The Architect/Engineer's approval of a specific item shall not indicate approval of an assembly of which the item is a component. Informational submittals upon which the Architect/Engineer is not expected to take responsive action may be so identified in the Contract Documents. Submittals which are not required by the Contract Documents may be returned by the Architect/Engineer without action.

B.18.3 The Contractor shall review for compliance with the Contract Documents, approve and submit to the Architect/Engineer Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of separate contractors. Submittals which are not marked as reviewed for compliance with the Contract Documents and approved by the Contractor may be returned by the Architect/Engineer without action.

B.18.4 By approving and submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents that the Contractor has determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and has checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

B.18.5 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been approved by the Architect/Engineer.

B.18.6 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Architect/Engineer's review or approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Architect/Engineer in writing of such deviation at the time of submittal and (i) the Architect/Engineer has given written approval to the specific deviation as a minor change in the Work, or (ii) a Change Order or Construction Change Directive has been executed by Owner authorizing the deviation. The Contractor shall not be relieved of

responsibility for errors or omissions in Shop Drawings, Product Data, Samples or similar submittals by the Architect/Engineer's review or approval thereof.

B.18.7 In the event that Owner elects not to have the obligations and duties described under this Section B.18 performed by the Architect/Engineer, or in the event no Architect/Engineer is employed by Owner on the project, all obligations and duties assigned to the Architect/Engineer hereunder shall be performed by the Owner.

B.19 SUBSTITUTIONS

The Contractor may make Substitutions only with the consent of the Owner, after evaluation by the Owner and only in accordance with a Change Order or Construction Change Directive. Substitutions shall be subject to the requirements of the bid documents. By making requests for Substitutions, the Contractor represents that the Contractor has personally investigated the proposed substitute product; represents that the Contractor will provide the same warranty for the Substitution that the Contractor would for the product originally specified unless approved otherwise; certifies that the cost data presented is complete and includes all related costs under this Contract including redesign costs, and waives all claims for additional costs related to the Substitution which subsequently become apparent; and will coordinate the installation of the accepted Substitution, making such changes as may be required for the Work to be completed in all respects.

B.20 USE OF PLANS AND SPECIFICATIONS

Plans, Specifications and related Contract Documents furnished to Contractor by Owner or Owner's Architect/Engineer shall be used solely for the performance of the Work under this Contract. Contractor and its Subcontractors and suppliers are authorized to use and reproduce applicable portions of such documents appropriate to the execution of the Work, but shall not claim any ownership or other interest in them beyond the scope of this Contract, and no such interest shall attach. Unless otherwise indicated, all common law, statutory and other reserved rights, in addition to copyrights, are retained by Owner.

B.21 FUNDS AVAILABLE AND AUTHORIZED

If Owner fails to receive funding, appropriations, allocations or other expenditure authority as contemplated by Owner's budget and Owner determines, in its assessment and ranking of the policy objectives explicit or implicit in Owner's budget, Owner may determine it is necessary to and may terminate the Public Improvement Contract.

B.22 NO THIRD PARTY BENEFICIARIES

Owner and Contractor are the only parties to this Contract and are the only parties entitled to enforce its terms. Nothing in this Contract gives, is intended to give, or shall be construed to give or provide any benefit or right, whether directly, indirectly, or otherwise, to third persons unless such third persons are individually identified by name herein and expressly described as intended beneficiaries of the terms of this Contract.

SECTION C
WAGES AND LABOR

C.1 MINIMUM WAGE RATES ON PUBLIC WORKS

Contractor shall comply fully with the provisions of ORS 279C.800 through 279C.870. Documents establishing those conditions, as determined by the Commissioner of the Bureau of Labor and Industries (BOLI), are included as attachments to or are incorporated by reference in the Contract Documents. Pursuant to ORS 279C.830(1)(d), Contractor shall pay workers at not less than the specified minimum hourly rate of wage, and shall include that requirement in all subcontracts. If the Work is subject to both the state prevailing wage rate law and the federal Davis-Bacon Act, Contractor shall pay the higher of the applicable state or federal prevailing rate of wage. Contractor shall provide written notice to all workers of the number of hours per day and days per week such workers may be required to work.

C.2 PAYROLL CERTIFICATION AND FEE REQUIREMENTS

C.2.1 In accordance with ORS 279C.845, the Contractor and every Subcontractor shall submit written certified statements to the Owner on the form prescribed by the Commissioner of the Bureau of Labor and Industries, certifying the hourly rate of wage paid each worker which the Contractor or the Subcontractor has employed on the project and further certifying that no worker employed on the project has been paid less than the prevailing rate of wage or less than the minimum hourly rate of wage specified in the Contract, which certificate and statement shall be verified by the oath of the Contractor or the Subcontractor that the Contractor or Subcontractor has read the certified statement, that the Contractor or Subcontractor knows the contents of the certified statement, and, that to the Contractor's or Subcontractor's best knowledge and belief, the certified statement is true. The certified statements shall set out accurately and completely the payroll records for the prior week, including the name and address of each worker, the worker's correct classification, rate of pay, daily and weekly number of hours worked, deductions made, and actual wages paid. Certified statements for each week during which the Contractor or Subcontractor has employed a worker on the project shall be submitted once a month, by the fifth business day of the following month. The Contractor and Subcontractors shall preserve the certified statements for a period of ten (10) years from the date of completion of the Contract.

C.2.2 Pursuant to ORS 279C.845(7), the Owner shall retain 25 percent of any amount earned by the Contractor on this public works project until the Contractor has filed the certified statements required by section C.2.1. The Owner shall pay to the Contractor the amount retained under this subsection within 14 days after the Contractor files the required certified statements, regardless of whether a Subcontractor has failed to file certified statements.

C.2.3 Pursuant to ORS 279C.845(8), the Contractor shall retain 25 percent of any amount earned by a first-tier Subcontractor on this public works project until the first-tier Subcontractor has filed with the Owner the certified statements required by C.2.1. Before paying any amount retained under this subsection, the Contractor shall verify that the first-tier Subcontractor has filed the certified statement. Within 14 days after the first-tier Subcontractor files the required certified statement the Contractor shall pay the first-tier Subcontractor any amount retained under this subsection.

C.2.4 In accordance with statutory requirements and administrative rules promulgated by the Commissioner of the Bureau of Labor and Industries, the fee required by ORS 279C.825(1) will be paid by Owner to the Commissioner.

C.3 PROMPT PAYMENT AND CONTRACT CONDITIONS

C.3.1 As a condition to Owner's performance hereunder, the Contractor shall:

C.3.1.1 Make payment promptly, as due, to all persons supplying to Contractor labor or materials for the prosecution of the Work provided for in this Contract.

C.3.1.2 Pay all contributions or amounts due the State Industrial Accident Fund from such Contractor or Subcontractor incurred in the performance of the Contract.

C.3.1.3 Not permit any lien or claim to be filed or prosecuted against the Owner on account of any labor or material furnished. Contractor will not assign any claims that Contractor has against Owner, or assign any sums due by Owner, to Subcontractors, suppliers, or manufacturers, and will not make any agreement or act in any way to give Subcontractors a claim or standing to make a claim against the Owner.

C.3.1.4 Pay to the Department of Revenue all sums withheld from employees pursuant to ORS 316.167.

C.3.2 As a condition to Owner's performance hereunder, if Contractor fails, neglects or refuses to make prompt payment of any claim for labor or services furnished to the Contractor of a Subcontractor by any person in connection with the project as such claim becomes due, the proper officer(s) representing the Owner may pay the claim and charge the amount of the payment against funds due or to become due Contractor under this Contract. Payment of claims in this manner shall not relieve the Contractor or the Contractor's surety from obligation with respect to any unpaid claims.

C.3.3 Contractor shall include in each subcontract for property or services entered into by the Contractor and a first-tier subcontractor, including a material supplier, for the purpose of performing a construction contract, a payment clause that obligates the Contractor to pay the first-tier Subcontractor for satisfactory performance under its subcontract within ten (10) Days out of such amounts as are paid to the Contractor by the public contracting agency under such contract.

C.3.4 All employers, including Contractor, that employ subject workers who work under this contract in the State of Oregon shall comply with ORS 656.017 and provide the required Workers' Compensation coverage, unless such employers are exempt under ORS 656.126. Contractor shall ensure that each of its Subcontractors complies with these requirements.

C.4 PAYMENT FOR MEDICAL CARE

As a condition to Owner's performance hereunder, Contractor shall promptly, as due, make payment to any person, partnership, association or corporation furnishing medical, surgical, and hospital care or other needed care and attention, incident to sickness or injury, to the employees of such Contractor, all sums of which the Contractor agrees to pay for such services and all moneys and sums which the Contractor has collected or deducted from the wages of personnel pursuant to any law, contract or agreement for the purpose of providing or paying for such services.

C.5 HOURS OF LABOR

As a condition to Owner's performance hereunder, no person shall be employed to perform Work under this Contract for more than ten (10) hours in any one day or forty (40) hours in any one week, except in cases of necessity, emergency or where public policy absolutely requires it. In such instances, Contractor shall pay the employee at least time and a half pay:

(a) For all overtime in excess of eight (8) hours a day or forty (40) hours in any one week when the work week is five consecutive Days, Monday through Friday; or

(b) For all overtime in excess of ten (10) hours a day or forty (40) hours in any one week when the work week is four consecutive Days, Monday through Friday; and

(c) For all Work performed on Saturday and on any legal holiday specified in ORS 279C.540.

This section C.5 will not apply to Contractor's Work under this Contract to the extent Contractor is currently a party to a collective bargaining agreement with any labor organization.

This Section C.5 shall not excuse Contractor from completion of the Work within the time required under this Contract.

SECTION D
CHANGES IN THE WORK

D.1 CHANGES IN WORK

D.1.1 The terms of this Contract shall not be waived, altered, modified, supplemented or amended in any manner whatsoever, without prior written agreement and then only after any necessary approvals have been obtained. A Change Order is required, which shall not be effective until its execution by the parties to this Contract and all approvals required by public contracting laws have been obtained.

D.1.2 It is mutually agreed that changes in Plans, quantities, or details of construction are inherent in the nature of construction and may be necessary or desirable during the course of construction. Within the general scope of this Contract, the Owner may at any time, without notice to the sureties and without impairing the Contract, require changes consistent with this Section D.1. All changes to the Work shall be documented and Change Orders shall be executed under the conditions of the Contract Documents. Such changes may include, but are not limited to:

(a) Modification of specifications and design.
(b) Increases or decreases in quantities.
(c) Increases or decreases to the amount of Work.
(d) Addition or elimination of any Work item.
(e) Change in the duration of the project.
(f) Acceleration or delay in performance of Work.
(g) Deductive changes.

Deductive changes are those that reduce the scope of the Work, and shall be made by mutual agreement whenever feasible. In cases of suspension or partial termination under Section J, Owner reserves the right to unilaterally impose a deductive change and to self-perform such Work, for which the provisions of B.13 (Owner's Right to Do Work) shall then apply. Adjustments in compensation shall be made under the provisions of D.1.3, in which costs for deductive changes shall be based upon a Direct Costs adjustment together with the related percentage markup specified for profit, Overhead and other indirect costs, unless otherwise agreed to by Owner.

D.1.3 The Owner and Contractor agree that adjustments to or deletions from the Work shall be administered and compensated according to the following:

(a) Unit Pricing: Unit pricing may be utilized at the Owner's option when unit prices or solicitation alternates were provided that established the cost for adjustments to Work, and a binding obligation exists under the Contract on the parties covering the terms and conditions of the adjustment to Work.

(b) Fixed Fee: If the Owner elects not to utilize unit pricing, or in the event that unit pricing is not available or appropriate, fixed pricing may be used for adjustments to or deletions from the Work. In fixed pricing the basis of payments or total price shall be agreed upon in writing between the parties to the Contract, and shall be established before the Work is done whenever feasible. Notwithstanding the foregoing, the mark-ups set forth in D.1.3(c) shall be utilized in establishing fixed pricing, and such mark-ups shall not be exceeded. Cost and price data relating to adjustments to or deletions from the Work shall be supplied by Contractor to Owner upon request, but Owner shall be under no obligation to make such requests.

(c) Time and Material: In the event that unit pricing and fixed pricing are not utilized, then adjustments to or deletions from the Work

shall be performed on a cost reimbursement basis for Direct Costs. Such Work shall be compensated on the basis of the actual, reasonable and allowable cost of labor, equipment, and material furnished on the Work performed. The Contractor or Subcontractor who performs the Work shall be allowed to add up to ten percent (10%) markup to the Direct Costs as full compensation for profit, Overhead and other indirect costs for Work performed with the Contractor's or Subcontractor's own forces

Each ascending tier Subcontractor or the Contractor that did not perform the Work, will be allowed to add up to five percent (5%) supplemental markup on the Direct Costs of the Work (but not the above allowable markups) covered by a Change Orders. No additional markup shall be permitted for any third tier or greater descending Subcontractor.

Example: $20,000 of Direct Costs Work performed by a 2nd Tier Subcontractor

	Markup	Allowed Total Fee Plus Markup
General Contractor	5%	$1,000.00
1st Tier Sub Contractor	5%	$1,000.00
2nd Tier Sub Contractor	10%	$22,000.00

(d) Payments made to the Contractor shall be complete compensation for Overhead, profit, and all costs that were incurred by the Contractor or by other forces furnished by the Contractor, including Subcontractors, for adjustments to or deletions from the Work pursuant to a Change Order. Owner may establish a maximum cost for additional Work under this Section D.1.3, which shall not be exceeded for reimbursement without additional written authorization from Owner in the form of a Change Order. Contractor shall not be required to complete such additional Work without additional authorization.

D.1.4 Any necessary adjustment of Contract Time that may be required as a result of adjustments to or deletions from the Work must be agreed upon by the parties before the start of the revised Work unless Owner authorizes Contractor to start the revised Work before agreement on Contract Time adjustment.

Contractor shall submit any request for additional compensation (and additional Contract Time if Contractor was authorized to start Work before an adjustment of Contract Time was approved) as soon as possible but no later than thirty (30) Days after receipt of Owner's request for additional Work . If Contractor's request for additional compensation or adjustment of Contract Time is not made within the thirty (30) Day time limit, Contractor's requests pertaining to that additional Work shall be barred. The thirty (30) Day time limit for making requests shall not be extended for any reason, including without limitation Contractor's claimed inability to determine the amount of additional compensation or adjustment of Contract Time, unless an extension is granted in writing by Owner. If the Owner denies Contractor's request for additional compensation or adjustment of Contract Time, Contractor may proceed to file a Claim under Section D.3, Claims Review Process. No other reimbursement, compensation, or payment will be made, except as provided in Section D.1.5 for impact claims.

D.1.5 If any adjustment to Work under Section D.1.3 causes an increase or decrease in the Contractor's cost of, or the Contract Time required for the performance of any other part of the Work under this Contract, Contractor shall submit a written request to the Owner, setting forth the nature and specific extent of the request, including all time and cost impacts against the Contract as soon as possible, but no later than thirty (30) Days after receipt of Owner's request for adjustments to or deletions from the Work by Contractor.

The thirty (30) Day time limit applies to claims of Subcontractors, suppliers, or manufacturers who may be affected by Owner's request for adjustments to or deletions from the Work and who request additional compensation or an extension of Contract Time to perform; Contractor has responsibility for contacting its Subcontractors, suppliers, or manufacturers within the thirty (30) Day time limit, and including their requests with Contractor's requests. If the request involves Work to be completed by Subcontractors, or materials to be furnished by suppliers or manufacturers, such requests shall be submitted to the Contractor in writing with full analysis and justification for the adjustments to compensation and Contract Time requested. The Contractor shall analyze and evaluate the merits of the requests submitted by Subcontractors, suppliers, and manufacturers to Contractor prior to including those requests and Contractor's analysis and evaluation of those requests with Contractor's requests for adjustments to compensation or Contract Time that Contractor submits to the Owner. Failure of Subcontractors, suppliers, manufacturers or others to submit their requests to Contractor for inclusion with Contractor's requests submitted to Owner within the time period and by the means described in this section shall constitute a waiver of these Subcontractor claims. The Owner will not consider direct requests or claims from Subcontractors, suppliers, manufacturers or others not a party to this Contract. The consideration of such requests and claims under this section does not give any Person, not a party to the Contract the right to bring a claim against Owner, whether in this claims process, in litigation, or in any dispute resolution process.

If the Owner denies the Contractor's request for adjustment to compensation or Contract Time, the Contractor may proceed to file a Claim under Section D.3, Claims Review Process.

D.1.6 No request or Claim by the Contractor for additional costs or an adjustment of Contract Time shall be allowed if made after receipt of final payment application under this Contract. Final payment application must be made by Contractor within the time required under Section E.6.4.

D.1.7 It is understood that changes in the Work are inherent in construction of this type. The number of changes, the scope of those changes, and the effect they have on the progress of the original Work cannot be defined at this time. The Contractor is notified that numerous changes may be required and that there will be no compensation made, unless and only to the extent otherwise provided in the Contract Documents, to the Contractor directly related to the number of changes. Each change will be evaluated for extension of Contract Time and increase or decrease in compensation based on its own merit.

D.2 DELAYS

D.2.1 Delays in construction include "Avoidable Delays", which are defined in Section D.2.1.1, and "Unavoidable Delays", which are defined in Section D.2.1.2. The effect of Avoidable Delays is described in Section D.2.2 and the effect of Unavoidable Delays is described in Section D.2.3.

D.2.1.1 Avoidable Delays include any delays other than Unavoidable Delays, and include delays that otherwise would be considered Unavoidable Delays but that:

(a) Could have been avoided by the exercise of care, prudence, foresight, and diligence on the part of the Contractor or its Subcontractors.

(b) Affect only a portion of the Work and do not necessarily prevent or delay the prosecution of neither other parts of the Work nor the completion of the whole Work within the Contract Time.

(c) Do not impact activities on the accepted critical path schedule.

(d) Are associated with the reasonable interference of other contractors employed by the Owner that do not necessarily

prevent the completion of the whole Work within the Contract Time.

D.2.1.2 Unavoidable Delays include delays other than Avoidable Delays that are:

(a) To the extent caused by any actions of the Owner, or any other employee or agent of the Owner, or by separate contractor employed by the Owner.

(b) To the extent caused by any site conditions which differ materially from what was represented in the Contract Documents or from conditions that would normally be expected to exist and be inherent to the construction activities defined in the Contract Documents. The Contractor shall notify the Owner immediately of differing site conditions before the area has been disturbed. The Owner will investigate the area and make a determination as to whether or not the conditions differ materially from either the conditions stated in the Contract Documents or those which could reasonably be expected in execution of this particular Contract. If Contractor and the Owner agrees that a differing site condition exists, any adjustment to compensation or Contract Time will be determined based on the process set forth in Section D.1.5 for adjustments to or deletions from Work. If the Owner disagrees that a differing site condition exists and denies Contractor's request for additional compensation or Contract Time, Contractor may proceed to file a Claim under Section D.3, Claims Review Process.

(c) To the extent caused by Force Majeure acts, events or occurrences that could not have been avoided by the exercise of care, prudence, foresight, and diligence on the part of the Contractor or its Subcontractors.

(d) To the extent caused by adverse weather conditions. Any adverse weather conditions must be substantiated by documentary evidence that weather conditions were abnormal for the specific time period claimed, could not have been anticipated by the Contractor, and adversely impacted the project in a manner that could not be avoided by rescheduling the Work or by implementing measures to protect against the weather so that the Work could proceed. A rain, windstorm, high water, or other natural phenomenon for the specific locality of the Work, which might reasonably have been anticipated from the previous 10-year historical records of the general locality of the Work, shall not be construed as abnormal. The parties agree that rainfall greater than the following levels cannot be reasonably anticipated:

(i) Daily rainfall equal to, or greater than, 0.50 inch during a month when the monthly rainfall exceeds the normal monthly average by twenty-five percent (25%) or more.

(ii) daily rainfall equal to, or greater than, 0.75 inch at any time.

The Office of the Environmental Data Service of the National Oceanic and Atmospheric Administration of the U.S. Department of Commerce nearest the project site shall be considered the official agency of record for weather information.

D.2.2 Contractor shall not be entitled to additional compensation or additional Contract Time for Avoidable Delays.

D.2.3 In the event of Unavoidable Delays, based on principles of equitable adjustment, Contractor may be entitled to the following:

(a) Contractor may be entitled to additional compensation or additional Contract Time, or both, for Unavoidable Delays described in Section D.2.1.2 (a) and (b).

(b) Contractor may be entitled to additional Contract Time for Unavoidable Delays described in Section D.2.1.2(c) and (d).

In the event of any requests for additional compensation or additional Contract Time, or both, as applicable, arising under this Section D.2.3 for Unavoidable Delays, other than requests for additional compensation or additional Contract Time for differing site conditions for which a review process is established under Section D.2.1.2 (b), Contractor shall submit a written notification of the delay to the Owner within two (2) Days of the occurrence of the cause of the delay. This written notification shall state the cause of the potential delay, the project components impacted by the delay, and the anticipated additional Contract Time extension or the additional compensation, or both, as applicable, resulting from the delay. Within seven (7) Days after the cause of the delay has been mitigated, or in no case more than thirty (30) Days after the initial written notification, the Contractor shall submit to the Owner, a complete and detailed request for additional compensation or additional Contract Time, or both, as applicable, resulting from the delay. If the Owner denies Contractor's request for additional compensation or adjustment of Contract Time, the Contractor may proceed to file a Claim under Section D.3, Claims Review Process.

If Contractor does not timely submit the notices required under this Section D.2, then unless otherwise prohibited by law, Contractor's Claim shall be barred.

D.3 CLAIMS REVIEW PROCESS

D.3.1 All Contractor Claims shall be referred to the Owner for review. Contractor's Claims, including Claims for adjustments to compensation or Contract Time, shall be submitted in writing by Contractor to the Owner within five (5) Days after a denial of Contractor's initial request for an adjustment of Contract terms, payment of money, extension of Contract Time or other relief, provided that such initial request has been submitted in accordance with the requirements and within the time limits established in these Oregon Tech General Conditions. Within thirty (30) Days after the initial Claim, Contractor shall submit to the Owner a complete and detailed description of the Claim (the "Detailed Notice") that includes all information required by Section D.3.2. Unless the Claim is made in accordance with these time requirements, it shall be waived by Contractor.

D.3.2 The Detailed Notice of the Claim shall be submitted in writing by Contractor and shall include a detailed, factual statement of the basis of the Claim, pertinent dates, Contract provisions which support or allow the Claim, reference to or copies of any documents which support the Claim, the dollar value of the Claim, and the Contract Time adjustment requested for the Claim. If the Claim involves Work to be completed by Subcontractors, the Contractor will analyze and evaluate the merits of the Subcontractor claim prior to forwarding it and that analysis and evaluation to the Owner. The Owner will not consider direct claims from Subcontractors, suppliers, manufacturers, or others not a party to this Contract. Contractor agrees that it will make no agreement, covenant, or assignment, nor will it commit any other act that will permit or assist any Subcontractor, supplier, manufacturer, or other to directly or indirectly make a claim against Owner.

D.3.3 The Owner will review all Claims and take one or more of the following preliminary actions within ten (10) Days of receipt of the Detailed Notice of a Claim: (1) request additional supporting information from the Contractor; (2) inform the Contractor and Owner in writing of the time required for adequate review and response; (3) reject the Claim in whole or in part and identify the

reasons for rejection; (4) based on principles of equitable adjustment, recommend approval of all or part of the Claim; or (5) propose an alternate resolution.

D.3.4 The Owner's decision shall be final and binding on the Contractor unless appealed by written notice to the Owner within fifteen (15) Days of receipt of the decision. The Contractor must present written documentation supporting the Claim within fifteen (15) Days of the notice of appeal. After receiving the appeal documentation, the Owner shall review the materials and render a decision within thirty (30) Days after receiving the appeal documents.

D.3.5 The decision of the Owner shall be final and binding unless the Contractor delivers to the Owner its request for mediation, which shall be a non-binding process, within fifteen (15) Days of the date of the Owner's decision. The mediation process will be considered to have commenced as of the date the Contractor delivers the request. Both parties acknowledge and agree that participation in mediation is a prerequisite to commencement of litigation of any disputes relating to the Contract. Both parties further agree to exercise their best efforts in good faith to resolve all disputes within sixty (60) Days of the commencement of the mediation through the mediation process set forth herein.

In the event that a lawsuit must be filed within this sixty (60) Day period in order to preserve a cause of action, the parties agree that, notwithstanding the filing, they shall proceed diligently with the mediation to its conclusion prior to actively prosecuting the lawsuit, and shall seek from the Court in which the lawsuit is pending such stays or extensions, including the filing of an answer, as may be necessary to facilitate the mediation process. Further, in the event settlements are reached on any issues through mediation, the plaintiff shall promptly cause to be entered by the Court a stipulated general judgment of dismissal with prejudice, or other appropriate order limiting the scope of litigation as provided in the settlement.

D.3.6 Should the parties arrive at an impasse regarding any Claims or disputed Claims, it is agreed that the parties shall participate in mediation as specified in Section D.3.5. The mediation process will be considered to have been commenced as of the date one party delivers to the other its request in writing to mediate. The mediator shall be an individual mutually acceptable to both parties, but in the absence of agreement each party shall select a temporary mediator and the temporary mediators shall jointly select the permanent mediator. Each party shall pay its own costs for the time and effort involved in mediation. The cost of the mediator shall be split equally between the two parties. Both parties agree to exercise their best effort in good faith to resolve all disputes in mediation. Participation in mediation is a mandatory requirement of both the Owner and the Contractor. The schedule, time and place for mediation will be mutually acceptable, or, failing mutual agreement, shall be as established by the mediator. The parties agree to comply with Owner's administrative rules governing the confidentiality of mediation, if any, and shall execute all necessary documents to give effect to such confidentiality rules. In any event, the parties shall not subpoena the mediator or otherwise require the mediator to produce records, notes or work product, or to testify in any future proceedings as to information disclosed or representations made in the course of mediation, except to the extent disclosure is required by law.

D.3.7 Unless otherwise directed by Owner, Contractor shall proceed with the Work while any Claim, or mediation or litigation arising from a Claim, is pending. Regardless of the review period or the final decision of the Owner, the Contractor shall continue to diligently pursue the Work as identified in the Contract Documents. In no case is the Contractor justified or allowed to cease or Delay Work, in whole or in part, without a written stop work order from the Owner.

SECTION E
PAYMENTS

E.1 SCHEDULE OF VALUES

The Contractor shall submit, by or before the pre-construction conference, a schedule of values ("Schedule of Values") for the contracted Work. This schedule shall provide a breakdown of values for the contracted Work and will be the basis for progress payments. The breakdown shall demonstrate reasonable, identifiable, and measurable components of the Work. Unless objected to by the Owner, this schedule shall be used as the basis for reviewing Contractor's applications for payment. If objected to by Owner, Contractor shall revise the schedule of values and resubmit the same for approval of Owner.

E.2 APPLICATIONS FOR PAYMENT

E.2.1 Owner shall make progress payments on the Contract monthly as Work progresses, in accordance with the requirements of this Section E.2. Applications for payment shall be based upon estimates of Work completed and the Schedule of Values. As a condition precedent to Owner's obligation to pay, all applications for payment shall be approved by the Owner. A progress payment shall not be considered acceptance or approval of any Work or waiver of any defects therein. Owner shall pay to Contractor interest for overdue invoices at the rate of two thirds of one percent per month on the progress payment, not including retainage, due the Contractor. Overdue invoices will be those that have not been paid within forty five (45) days from the latest of:

(a) The date of the receipt of the accurate invoice;

(b) The date Owner receives the correct application for payment if no invoice is received;

(c) The date all goods and services have been received; or

(d) The date a Claim is made certain by agreement of the parties or by operation of law.

Notwithstanding the foregoing, in instances when an application for payment is filled out incorrectly, or when there is any defect or impropriety in any submitted application or when there is a good faith dispute, Owner shall so notify the Contractor within fifteen (15) Days stating the reason or reasons the application for payment is defective or improper or the reasons for the dispute. A defective or improper application for payment, if corrected by the Contractor within seven (7) Days of being notified by the Owner, shall not cause a payment to be made later than specified in this section unless interest is also paid. Payment of interest will be postponed when payment on the principal is delayed because of disagreement between the Owner and the Contractor.

Owner reserves the right, instead of requiring the Contractor to correct or resubmit a defective or improper application for payment, to reject the defective or improper portion of the application for payment and pay the remainder of the application for such amounts which are correct and proper.

Owner, upon written notice to the Contractor, may elect to make payments to the Contractor only by means of Electronic Funds Transfers (EFT) through Automated Clearing House (ACH) payments. If Owner makes this election, the Contractor shall arrange for receipt of the EFT/ACH payments.

E.2.2 Contractor shall submit to the Owner an application for each payment and, if required, receipts or other vouchers showing payments for materials and labor including payments to Subcontractors. Contractor shall include in its application for payment a schedule of the percentages of the various parts of the Work completed, based on the Schedule of Values which shall aggregate to the payment application total, and shall include, on the

face of each copy thereof, a certificate in substantially the following form:

"I, the undersigned, hereby certify that the above bill is true and correct, and the payment therefore, has not been received.

Signed: _____
Dated: _____"

E.2.3 Generally, applications for payment will be accepted only for materials that have been installed. Under special conditions, applications for payment for stored materials will be accepted at Owner's sole discretion. Such a payment, if made, will be subject to the following conditions:

(a) The request for stored material shall be submitted at least thirty (30) Days in advance of the application for payment on which it appears. Applications for payment shall be entertained for major equipment, components or expenditures only.

(b) The Contractor shall submit applications for payment showing the quantity and cost of the material stored.

(c) The material shall be stored in a bonded warehouse and Owner shall be granted the right to access the material for the purpose of removal or inspection at any time during the Contract Period.

(d) The Contractor shall name the Owner as co-insured on the insurance policy covering the full value of the property while in the care and custody of the Contractor until it is installed. A certificate noting this coverage shall be issued to the Owner.

(e) Payments shall be made for materials and equipment only. The submitted amount in the application for payment shall be reduced by the cost of transportation from the storage site to the project site and for the cost of an inspector to verify delivery and condition of the goods at the storage site. The cost of storage and inspection shall be borne solely by the Contractor.

(f) Within sixty (60) Days of the application for payment, the Contractor shall submit evidence of payment covering the material and/or equipment stored and of payment for the storage site.

(g) Payment for stored materials and/or equipment shall in no way indicate acceptance of the materials and/or equipment or waive any rights under this Contract for the rejection of the Work or materials and/or equipment not in conformance with the Contract Documents.

(h) All required documentation shall be submitted with the respective application for payment.

E.2.4 The Owner reserves the right to withhold all or part of a payment, or may nullify in whole or part any payment previously made, to such extent as may be necessary in the Owner's opinion to protect the Owner from loss because of:

(a) Work that is defective and not remedied, or that has been demonstrated or identified as failing to conform with Applicable Laws or the Contract Documents,

(b) third party claims filed or evidence reasonably indicating that such claims will likely be filed unless security acceptable to the Owner is provided by the Contractor;

(c) failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment (in which case Owner may issue checks made payable jointly to Contractor and such unpaid persons under this provision, or directly to Subcontractors and suppliers at any level under Section C.3.2.1);

(d) reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Price;

(e) damage to the Work, Owner or another contractor;

(f) reasonable evidence that the Work will not be completed within the Contract Time required by the Contract, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay;

(g) failure to carry out the Work in accordance with the Contract Documents; or

(h) assessment of liquidated damages, when withholding is made for offset purposes.

E.2.5 Subject to the provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

(a) Take that portion of the Contract Price properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Work by the share of the total Contract Price allocated to that portion of the Work in the Schedule of Values, less retainage as provided in Section E.5. Pending final determination of cost to the Owner of changes in the Work, no amounts for changes in the Work can be included in applications for payment until the Contract Price has been adjusted by a payment until the Contract Price has been adjusted by a Change Order;

(b) Add that portion of the Contract Price properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction (or, if approved in advance by the Owner pursuant to Section E.2.3, suitably stored off the site at a location agreed upon in writing), less retainage as provided in Section E.5;

(c) Subtract the aggregate of previous payments made by the Owner; and

(d) Subtract any amounts for which the Owner has withheld or nullified payment as provided in the Contract Documents.

E.2.6 Contractor's applications for payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay to a Subcontractor or material supplier.

E.2.7 The Contractor warrants to Owner that title to all Work covered by an application for payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an application for payment all Work for which payments are received from the Owner shall be free and clear of liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided financing, labor, materials and equipment relating to the Work.

E.2.8 If Contractor disputes any determination by Owner with regard to any application for payment, Contractor nevertheless shall continue to expeditiously perform the Work. No payment made hereunder shall be or be construed to be final acceptance or approval of that portion of the Work to which such partial payment relates or shall relieve Contractor of any of its obligations hereunder.

E.2.9 Contractor shall submit its initial MWESB Report within ten (10) Days of Contractor's execution of the Contract, or if there will be a Guaranteed Maximum Price (GMP) Amendment, then within ten (10) Days of Contractor's execution of the GMP Amendment.

Contractor shall submit annual MWESB Reports on June 30 of each year the Contract is active. Contracts (or GMP Amendments) first executed by Contractor within ninety (90) Days before June 30 of the year of execution by Contractor may at the discretion of Owner be exempt from submitting the annual MWESB Report otherwise due on that June 30. The final MWESB Report shall be filed with the application for final payment. Timely receipt of MWESB Reports by Owner shall be a condition precedent to Owner's obligation to pay any progress payments or final payment otherwise due.

E.3 PAYROLL CERTIFICATION REQUIREMENT

Owner's receipt of payroll certification pursuant to Section C.2 of this Contract shall be a condition precedent to Owner's obligation to pay any progress payments or final payment otherwise due.

E.4 DUAL PAYMENT SOURCES

Contractor shall not be compensated for Work performed under this Contract from any state agency other than the agency that is a party to this Contract.

E.5 RETAINAGE

E.5.1 Retainage shall be withheld and released in accordance with the requirements set forth in OAR 580-063-0045, or the applicable Oregon Tech standard.

E.5.1.1 Owner may reserve as retainage from any progress payment an amount not to exceed five percent of the payment. As Work progresses, Owner may reduce the amount of retainage on or may eliminate retainage on any remaining monthly Contract payments after 50 percent of the Work under the Contract is completed if, in the Owner's discretion, such Work is progressing satisfactorily. Elimination or reduction of retainage shall be allowed only upon written application by the Contractor, which application shall include written approval of Contractor's surety; except that when the Work is 97-1/2 percent completed the Owner may, at its discretion and without application by the Contractor, reduce the retained amount to 100 percent of the value of the Work remaining to be done. Upon receipt of written application by the Contractor, Owner shall respond in writing within a reasonable time.

E.5.1.2 Contractor may request in writing:

(a) to be paid amounts which would otherwise have been retained from progress payments where Contractor has deposited acceptable bonds and securities of equal value with Owner or in a custodial account or other mutually agreed account satisfactory to Owner, with an approved bank or trust company to be held in lieu of the cash retainage for the benefit of Owner;

(b) for construction projects over $1,000,000, that retainage be deposited in an interest bearing account, established through the State Treasurer for state agencies, in a bank, savings bank, trust company or savings association for the benefit of Owner, with earnings from such account accruing to the Contractor; or

(c) that the Owner allow Contractor to deposit a surety bond for the benefit of Owner, in a form acceptable to Owner, in lieu of all or a portion of funds retained, or to be retained. Such bond and any proceeds therefrom shall be made subject to all claims in the manner and priority as set forth for retainage.

When the Owner has accepted the Contractor's election of option (a) or (b), Owner may recover from Contractor any additional costs incurred through such election by reducing Contractor's final payment. Where the Owner has agreed to Contractor's request for option (c), Contractor shall accept like bonds from Subcontractors and suppliers on the project from which Contractor has required retainages.

E. 5.1.3 The retainage held by Owner shall be included in and paid to the Contractor as part of the final payment of the Contract Price. The Owner shall pay to Contractor interest at the rate of two thirds of one percent per month on the final payment due Contractor, interest to commence forty five (45) Days after the date which Owner receives Contractor's final approved application for payment and Work under the Contract has been completed and accepted and to run until the date when final payment is tendered to Contractor. The Contractor shall notify Owner in writing when the Contractor considers the Work complete and deliver to Owner its final application for payment and Owner shall, within fifteen (15) Days after receiving the written notice and the application for payment, either accept the Work or notify the Contractor of Work yet to be performed on the Contract. If Owner does not within the time allowed notify the Contractor of Work yet to be performed to fulfill contractual obligations, the interest provided by this subsection shall commence to run forty five (45) Days after the end of the 15 Day period.

E.5.1.4 Owner will reduce the amount of the retainage if the Contractor notifies the controller of the Owner that the Contractor has deposited in an escrow account with a bank or trust company, in a manner authorized by the Owner, bonds and securities of equal value of a kind approved by the Owner and such bonds and securities have in fact been deposited.

E.5.1.5 Contractor agrees that if Contractor elects to reserve a retainage from any progress payment due to any Subcontractor or supplier, such retainage shall not exceed five percent of the payment, and such retainage withheld from Subcontractors and suppliers shall be subject to the same terms and conditions stated in Subsection E.5 as apply to Owner's retainage from any progress payment due to Contractor.

E.6 FINAL PAYMENT

E.6.1 Upon completion of all the Work under this Contract, the Contractor shall notify the Owner, in writing, that Contractor has completed Contractor's obligations under the Contract and shall prepare its application requesting final payment. Upon receipt of such notice and application for payment, the Owner will inspect the Work, and, if acceptable, submit to Contractor a recommendation as to acceptance of the completed Work and the final estimate of the amount due the Contractor. If the Work is not acceptable, Owner will notify Contractor within fifteen (15) Days of Contractor's request for final payment. Upon approval of this final application for payment by the Owner and compliance by the Contractor with provisions in Section K, and Contractor's satisfaction of other provisions of the Contract Documents as may be applicable, the Owner shall pay to the Contractor all monies due under the provisions of these Contract Documents.

E.6.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Owner (1) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least thirty (30) Days' prior written notice has been given to the Owner, (2) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (3) consent of surety, if any, to final payment and (4), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to

indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

E.6.3 Acceptance of final payment by the Contractor, a Subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final application for payment.

E.6.4 Contractor agrees to submit its final payment application within ninety (90) Days after Substantial Completion, unless written extension is granted by Owner. Contractor shall not delay final payment application for any reason, including without limitation nonpayment of Subcontractors, suppliers, manufacturers or others not a party to this Contract, or lack of resolution of a dispute with Owner or any other person of matters arising out of or relating to the Contract. If Contractor fails to submit its final payment application within ninety (90) Days after Substantial Completion, and Contractor has not obtained written extension by Owner, all requests or Claims for additional costs or an extension of Contract Time shall be waived.

SECTION F
JOB SITE CONDITIONS

F.1 USE OF PREMISES

Contractor shall confine equipment, storage of materials and operation of Work to the limits indicated by Contract Documents, Applicable Laws, permits or directions of the Owner. Contractor shall follow the Owner's instructions regarding use of premises, if any.

F.2 PROTECTION OF WORKERS, PROPERTY AND THE PUBLIC

F.2.1 Contractor shall maintain continuous and adequate protection of all of the Work from damage and shall protect the Owner, workers and property from injury or loss arising in connection with this Contract. Contractor shall remedy acceptably to the Owner any damage, injury, or loss, except such as may be directly due to errors in the Contract Documents or caused by authorized representatives or personnel of the Owner. Contractor shall adequately protect adjacent property as provided by law and the Contract Documents.

F.2.2 Contractor shall take all necessary precautions for the safety of all personnel on the job site or otherwise engaged in the undertaking of the Work and shall comply with the Contract Documents, best practices and all applicable provisions of federal, state and municipal safety laws and building codes to prevent accidents or injury to persons on, about or adjacent to the premises where the Work is being performed. Contractor shall erect and properly maintain at all times, as required by the conditions and progress of the Work, all necessary safeguards for protection of workers and the public against any hazards created by construction. Contractor shall designate a responsible employee or associate on the Work site, whose duty shall be the prevention of accidents. The name and position of the person designated shall be reported to the Owner. The Owner has no responsibility for Work site safety. Work site safety shall be the responsibility of the Contractor.

F.2.3 Contractor shall not enter upon private property without first obtaining permission from the property owner or its duly authorized representative. Contractor shall be responsible for the preservation of all public and private property along and adjacent to the Work contemplated under the Contract and shall use every precaution necessary to prevent damage thereto. In the event the Contractor damages any property, the Contractor shall at once notify the property owner and make, or arrange to make, full restitution. Contractor shall, immediately and in writing, report to the Owner, all pertinent facts relating to such property damage and the ultimate disposition of the claim for damage.

F.2.4 Contractor shall be responsible for protection of adjacent work areas including impacts brought about by activities, equipment, labor, utilities, vehicles and materials on the site.

F.2.5 Contractor shall at all times direct its activities in such a manner as to minimize adverse effects on the environment. Handling of all materials shall be conducted so no release will occur that may pollute or become hazardous.

F.2.6 In an emergency affecting the safety of life or limb or of the Work or of adjoining property, the Contractor, without special instruction or authorization from the Owner, shall act reasonably to prevent threatened loss or injury, and shall so act, without appeal, if instructed by the Owner. Any compensation claimed by the Contractor on account of emergency work shall be determined in accordance with section D.

F.2.7 Contractor shall comply with all Owner safety rules and regulations. Prior to commencement of any Work, Contractor shall be required to complete an Owner Contractor Safety Orientation and submit all Owner required safety plans.

F.3 CUTTING AND PATCHING

F.3.1 Contractor shall be responsible for coordinating all cutting, fitting, or patching of the Work to make its several parts come together properly and fit to receive or be received by work of other contractors or Subcontractors shown upon, or reasonably implied by, the Contract Documents.

F.3.2 Contractor shall be responsible for restoring all cut, fitted, or patched surfaces to an original condition; provided, however, that if a different condition is specified in the Contract Documents, then Contractor shall be responsible for restoring such surfaces to the condition specified in the Contract Documents.

F.4 CLEANING UP

From time to time as may be prudent or ordered by the Owner and, in any event, immediately after completion of the Work, the Contractor shall, at its own expense, clean up and remove all refuse and unused materials of any kind resulting from the Work. If Contractor fails to do so within twenty-four hours after notification by the Owner the work may be done by others and the cost charged to the Contractor and deducted from payment due the Contractor.

F.5 ENVIRONMENTAL CONTAMINATION

F.5.1. Contractor shall be held responsible for and shall indemnify, defend (with counsel of Owner's choice),and hold harmless Owner from and against any costs, expenses, damages, claims, and causes of action, (including attorney fees), or any of them, resulting from all spills, releases, discharges, leaks and disposal of environmental pollution, including storage, transportation, and handling during the performance of the Work or Contractor's obligations under the Contract which occur as a result of, or are contributed by, the negligence or actions of Contractor or its personnel, agents, or Subcontractors or any failure to perform in accordance with the Contract Documents (except to the extent otherwise void under ORS 30.140). Nothing in this section F.5.1 shall limit Contractor's responsibility for obtaining insurance coverages required under Section G.3 of this Contract, and Contractor shall take no action that would void or impair such coverages.

F.5.1.1 Contractor agrees to promptly dispose of such spills, releases, discharge or leaks to the satisfaction of Owner and regulatory agencies having jurisdiction in a manner that complies with Applicable Laws. Cleanup shall be at no cost to the Owner and

shall be performed by properly qualified and, if applicable, licensed personnel.

F.5.1.2 Contractor shall obtain the Owner's written consent prior to bringing onto the Work site any (i) environmental pollutants or (ii) hazardous substances or materials, as the same or reasonably similar terms are used in any Applicable Laws. Notwithstanding such written consent from the Owner, the Contractor, at all times, shall:

(a) properly handle, use and dispose of all environmental pollutants and hazardous substances or materials brought onto the Work site, in accordance with all Applicable Laws;

(b) be responsible for any and all spills, releases, discharges, or leaks of (or from) environmental pollutants or hazardous substances or materials which Contractor has brought onto the Work site; and

(c) promptly clean up and remediate, without cost to the Owner, such spills, releases, discharges, or leaks to the Owner's satisfaction and in compliance with all Applicable Laws.

F.5.2 Contractor shall report all reportable quantity releases, as such releases are defined in Applicable Laws, including but not limited to 40 CFR Part 302, Table 302.4 and in OAR 340-1420050 , to applicable federal, state, and local regulatory and emergency response agencies. Upon discovery, regardless of quantity, Contractor must telephonically report all releases to the Owner. A written follow-up report shall be submitted to Owner within 48 hours of the telephonic report. Such written report shall contain, as a minimum:

(a) Description of items released (identity, quantity, manifest numbers, and any and all other documentation required by law.)

(b) Whether amount of items released is EPA/DEQ reportable, and, if so, when reported.

(c) Exact time and location of release, including a description of the area involved.

(d) Containment procedures initiated.

(e) Summary of communications about the release between Contractor and members of the press or State, local or federal officials other than Owner.

(f) Description of cleanup procedures employed or to be employed at the site, including disposal location of spill residue.

(g) Personal injuries, if any, resulting from, or aggravated by, the release.

F.6 ENVIRONMENTAL CLEAN-UP

F.6.1 Unless disposition of environmental pollution is specifically a part of this Contract, or was caused by the Contractor (reference F.5 Environmental Contamination), Contractor shall immediately notify Owner of any hazardous substance(s) which Contractor discovers or encounters during performance of the Work required by this Contract. "Hazardous substance(s)" means any hazardous, toxic and radioactive materials and those substances defined as “hazardous substances,” “hazardous materials,” “hazardous wastes,” “toxic substances,” or other similar designations in any federal, state, or local law, regulation, or ordinance, including without limitation asbestos, polychlorinated biphenyl (PCB), or petroleum, and any substances, materials or wastes regulated by 40 CFR, Part 261 and defined as hazardous in 40 CFR S 261.3. In addition to notifying Owner of any hazardous substance(s) discovered or encountered, Contractor shall immediately cease working in any particular area of the project where a hazardous substance(s) has been discovered or encountered if continued work in such area would present a risk or danger to the health or wellbeing of Contractor's or any Subcontractor's work force, property or the environment.

F.6.2 Upon being notified by Contractor of the presence of hazardous substance(s) on the project site, Owner shall arrange for the proper disposition of such hazardous substance(s).

F.7 FORCE MAJEURE

A party to this Contract shall not be held responsible for delay or default due to Force Majeure acts, events or occurrences unless they could have been avoided by the exercise of reasonable care, prudence, foresight, and diligence by that party. The Owner may terminate this Contract upon written notice after determining that delay or default caused by Force Majeure acts, events or occurrences will reasonably prevent successful performance of the Contract.

SECTION G
INDEMNITY, BONDING, AND INSURANCE

G.1 RESPONSIBILITY FOR DAMAGES / INDEMNITY

G.1.1 Contractor shall be responsible for all damage to property, injury to persons, and loss, expense, inconvenience, and delay that may be caused by, or result from, the carrying out of the Work to be done under this Contract, or from any act, omission or neglect of the Contractor, its Subcontractors, employees, guests, visitors, invitees and agents.

G.1.2 To the fullest extent permitted by law, Contractor shall indemnify, defend (with counsel approved by Owner) and hold harmless the Owner, Architect/Engineer, Architect/Engineer’s consultants, and their respective officers, directors, agents, employees, partners, members, stockholders and affiliated companies (collectively "Indemnitees") from and against all liabilities, damages, losses, claims, expenses (including reasonable attorney fees), demands and actions of any nature whatsoever which arise out of, result from or are related to, (a) any damage, injury, loss, expense, inconvenience or delay described in this Section G.1., (b) any accident or occurrence which happens or is alleged to have happened in or about the project site or any place where the Work is being performed, or in the vicinity of either, at any time prior to the time the Work is fully completed in all respects, (c) any failure of the Contractor to observe or perform any duty or obligation under the Contract Documents which is to be observed or performed by the Contractor, or any breach of any agreement, representation or warranty of the Contractor contained in the Contract Documents or in any subcontract, (d) the negligent acts or omissions of the Contractor, a Subcontractor or anyone directly or indirectly employed by them or any one of them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder (except to the extent otherwise void under ORS 30.140), and (e) any lien filed upon the project or bond claim in connection with the Work. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this Section G.1.2.

G.1.3 In claims against any person or entity indemnified under Section G.1.2 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under Section G.1.2 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under

workers' compensation acts, disability benefit acts or other employee benefit acts.

G.2 PERFORMANCE AND PAYMENT SECURITY; PUBLIC WORKS BOND

G.2.1 When the Contract Price is $100,000 or more (or $50,000 or more in the case of Contracts for highways, bridges and other transportation projects), the Contractor shall furnish and maintain in effect at all times during the Contract Period a performance bond in a sum equal to the Contract Price and a separate payment bond also in a sum equal to the Contract Price. Contractor shall furnish such bonds even if the Contract Price is less than the above thresholds if otherwise required by the Contract Documents.

G.2.2 Bond forms furnished by the Owner and notarized by awarded Contractor's surety company authorized to do business in Oregon are the only acceptable forms of performance and payment security, unless otherwise specified in the Contract Documents.

G.2.3 Before execution of the Contract the Contractor shall file with the Construction Contractors Board, and maintain in full force and effect, the separate public works bond required by Oregon Laws 2005, Chapter 360, and OAR 839-025-0015, unless otherwise exempt under those provisions. The Contractor shall also include in every subcontract a provision requiring the Subcontractor to have a public works bond filed with the Construction Contractors Board before starting Work, unless otherwise exempt, and shall verify that the Subcontractor has filed a public works bond before permitting any Subcontractor to start Work.

G.3 INSURANCE

G.3.1 Primary Coverage: Insurance carried by Contractor under this Contract shall be the primary coverage. The coverages indicated are minimums unless otherwise specified in the Contract Documents.

G.3.2 Workers' Compensation: All employers, including Contractor, that employ subject workers who work under this Contract in the State of Oregon shall comply with ORS 656.017 and provide the required Workers' Compensation coverage, unless such employers are exempt under ORS 656.126. This shall include Employer's Liability Insurance with coverage limits of not less than the minimum amount required by statute for each accident. Contractors who perform the Work without the assistance or labor of any employee need not obtain such coverage if the Contractor certifies so in writing. Contractor shall ensure that each of its Subcontractors complies with these requirements. The Contractor shall require proof of such Workers' Compensation coverage by receiving and keeping on file a certificate of insurance from each Subcontractor or anyone else directly employed by either the Contractor or its Subcontractors.

G.3.3 Builder's Risk Insurance:

G.3.3.1 Builder's Risk: During the term of this Contract, for new construction the Contractor shall obtain and keep in effect Builder's Risk insurance on an all risk forms, including earthquake and flood, for an amount equal to the full amount of the Contract, plus any changes in values due to modifications, Change Orders and loss of materials added. Such Builder's Risk shall include, in addition to earthquake and flood, theft, vandalism, mischief, collapse, transit, debris removal, and architect's fees "soft costs" associated with delay of project due to insured peril. Any deductible shall not exceed $50,000 for each loss, except the earthquake and flood deductible which shall not exceed 2 percent of each loss or $50,000, whichever is greater. The deductible shall be paid by Contractor if Contractor is negligent. The policy will include as loss payees Owner, the Contractor and its Subcontractors as their interests may appear.

G.3.3.2 Builder's Risk Installation Floater: For Work other than new construction, Contractor shall obtain and keep in effect during the term of this Contract, a Builder's Risk Installation Floater for coverage of the Contractor's labor, materials and equipment to be used for completion of the Work performed under this Contract. The minimum amount of coverage to be carried shall be equal to the full amount of the Contract. The policy will include as loss payees Owner, the Contractor and its Subcontractors as their interests may appear. Owner may waive this requirement at its sole and absolute discretion.

G.3.3.3 Such insurance shall be maintained until Owner has occupied the facility.

G.3.3.4 A loss insured under the Builder's Risk insurance shall be adjusted by the Owner and made payable to the Owner as loss payee. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner. The Owner shall have power to adjust and settle a loss with insurers.

G.3.4 General Liability Insurance:

G.3.4.1 Commercial General Liability: Upon execution of a Contract, Contractor shall obtain, and keep in effect at Contractor's expense for the term of the Contract, Commercial General Liability Insurance ("CGL") covering bodily injury and property damage in the amount of not less than $1,000,000 per claim and $2,000,000 per occurrence in a form satisfactory to Owner. This insurance shall include personal injury liability, products and completed operations, and contractual liability coverage for the indemnities provided under this Contract (to the extent contractual liability coverage for the indemnity is available in the marketplace), and shall be issued on an occurrence basis written on ISO Form GC 00 01 (12 04 or later) or an equivalent form approved in advance by Owner. The CGL shall provide separation of insured language.

G.3.4.2 Automobile Liability: Contractor shall obtain, at Contractor's expense, and keep in effect during the term of this Contract, Automobile Liability Insurance covering owned, and/or hired vehicles, as applicable. The coverage may be written in combination with the Commercial General Liability Insurance. Contractor shall provide proof of insurance of not less than $1,000,000 per claim and $2,000,000 per occurrence. Contractor and its Subcontractors shall be responsible for ensuring that all non-owned vehicles maintain adequate Automobile Liability insurance while on site.

G.3.4.3 Owner may adjust the insurance amounts required in Section G.3.4.1 and G.3.4.2 based upon institution specific risk assessments through the issuance of Supplemental General Conditions and a Contract.

G.3.4.4 To the extent that the Contract Documents require the Contractor to provide professional design services, design-build, or certifications related to systems, materials, or equipment, the Contractor shall (1) purchase and maintain professional liability/errors-and-omissions insurance with limits of not less than $1,000,000 for each claim and (2) cause those Subcontractors (of any tier) who are providing professional design services including any design-build services to procure and maintain professional liability/errors-and-omissions insurance with limits of not less than $1,000,000 for each claim.

G.3.4.5 "Tail" Coverage: If any of the required liability insurance is arranged on a "claims made" basis, "tail" coverage will be required at the completion of this Contract for a duration of 36 months or the maximum time period available in the marketplace

if less than 36 months. Contractor shall furnish certification of "tail" coverage as described or continuous "claims made" liability coverage for 36 months following Final Completion. Continuous "claims made" coverage will be acceptable in lieu of "tail" coverage, provided its retroactive date is on or before the effective date of this Contract. Owner's receipt of the policy endorsement evidencing such coverage shall be a condition precedent to Owner's obligation to make final payment and to Owner's final acceptance of Work or services and related warranty (if any).

G.3.4.6 Umbrella Liability (if required by Owner through issuance of Supplemental General Conditions): Contractor shall obtain, at Contractor's expense, and keep in effect during the term of the Contract, Umbrella liability Insurance over and above the general liability, automobile liability and workers' compensation coverage if required by Owner in specified limits at time of requirement.

G.3.4.6 Pollution Liability (if required by Owner through issuance of Supplemental General Conditions): Contractor shall obtain, at Contractor's expense, and keep in effect during the term of the Contract, Pollution liability Insurance in minimum amounts of $3,000,000 naming Owner as "additional insured," as noted in the "additional insured section below.

G.3.5 Additional Insured: The general liability insurance coverage, automobile liability, umbrella, and pollution liability if required, shall include the Owner as additional insureds but only with respect to the Contractor's activities to be performed under this Contract. The additional-insured endorsement for CGL insurance must be written on ISO Form CG 20 10 (10 01) and CG 20 37 (10 01), or their equivalent, but shall not use either of the following forms: CG 20 10 (10 93) or CG 20 10 (03 94).

If Contractor cannot obtain an insurer to name the Owner as additional insureds, Contractor shall obtain at Contractor's expense, and keep in effect during the term of this Contract, Owners and Contractors Protective Liability Insurance, naming the Owner as additional insureds with not less than a $2,000,000 limit per occurrence. This policy must be kept in effect for 36 months following Final Completion. As evidence of coverage, Contractor shall furnish the actual policy to Owner prior to execution of the Contract.

G.3.6 Notice of Cancellation or Change: If the Contractor receives a non-renewal or cancellation notice from an insurance carrier affording coverage required herein, or receives notice that coverage no longer complies with the insurance requirements herein, Contractor agrees to notify Owner by fax within five (5) business days with a copy of the non-renewal or cancellation notice, or written specifics as to which coverage is no longer in compliance. When notified by Owner, the Contractor agrees to stop Work pursuant to this Contract, unless all required insurance remain in effect. Any failure to comply with the reporting provisions of this insurance, except for the potential exhaustion of aggregate limits, shall not affect the coverages provided to the Owner and its institutions, divisions, officers, and employees.

Owner shall have the right, but not the obligation, of prohibiting Contractor from entering the Work site until a new certificate(s) of insurance is provided to Owner evidencing the replacement coverage. The Contractor agrees that Owner reserves the right to withhold payment to Contractor until evidence of reinstated or replacement coverage is provided to Owner.

G.3.7 Certificate(s) of Insurance: As evidence of the insurance coverage required by the Contract, the Contractor shall furnish certificate(s) of insurance to the Owner prior to execution of the Contract. The certificate(s) will specify all of the parties who are additional insureds or loss payees for the contract. Insurance coverage required under this Contract shall be obtained from insurance companies or entities acceptable to the Owner and that are eligible to provide such insurance under Oregon law. Eligible insurers include admitted insurers that have been issued a certificate of authority from the Oregon Department of Consumer and Business Services authorizing them to conduct an insurance business and issue policies of insurance in the state of Oregon, and certain non-admitted surplus lines insurers that satisfy the requirements of applicable Oregon law and which are subject to approval by the Owner. The Contractor shall be financially responsible for all deductibles, self-insured retentions and/or self-insurance included hereunder. Any deductible, self-insured retention and/or self-insurance in excess of $50,000 shall be subject to approval by the Owner in writing and shall be a condition precedent to the effectiveness of any Contract.

SECTION H
SCHEDULE OF WORK

H.1 CONTRACT PERIOD

H.1.1 Time is of the essence. The Contractor shall at all times carry on the Work diligently, without delay and punctually fulfill all requirements herein. If required by the Contract Documents, Contractor shall commence Work on the site within fifteen (15) Days of Notice to Proceed, unless directed otherwise.

H.1.2 Unless specifically extended by a Change Order, all Work shall be complete by the date contained in the Contract Documents. The Owner shall have the right to accelerate the completion date of the Work, which may require the use of overtime. Such accelerated Work schedule shall be an acceleration in performance of Work under Section D.1.2 (f) and shall be subject to the provisions of Section D.1.

H.1.3 The Owner shall not waive any rights under the Contract by permitting the Contractor to continue or complete in whole or in part the Work after the date described in Section H.1.2 above.

H.2 SCHEDULE

H.2.1 Contractor shall provide, by or before the pre-construction conference, the initial as-planned schedule for review and acceptance by the Owner. The submitted schedule must illustrate Work by project components, labor trades, and long lead items broken down by building and/or floor where applicable. If Owner shall so elect, Contractor shall provide the schedule in CPM format showing the graphical network of planned activities, including i) a reasonably detailed list of all activities required to complete the Work; ii) the time and duration that each activity will take to completion; and iii) the dependencies between the activities. Schedules lacking adequate detail, or unreasonably detailed, will be rejected. The schedule shall include the following: Notice to Proceed or the date the Work commences, if no Notice to Proceed is issued by Owner, Substantial Completion, and Final Completion. Schedules shall be updated monthly, unless otherwise required by the Contract Documents, and submitted with the monthly application for payment. Acceptance of the Schedule by the Owner does not constitute agreement by the Owner as to the Contractor's sequencing, means, methods, or durations. Any positive difference between the Contractor's scheduled completion and the Contract completion date is float owned by the Owner. Owner reserves the right to negotiate the float if it is deemed to be in Owner's best interest to do so. In no case shall the Contractor make a claim for delays if the Work is completed within the Contract Time but after Contractor's scheduled completion.

H.2.2 All Work shall be completed during normal weekdays (Monday through Friday) between the hours of 7:00 a.m. and 5:00 p.m. unless otherwise specified in the Contract Documents. Unless

otherwise specified in the Contract Documents, no Work shall be performed during the following holidays:

- New Year's Day
- Martin Luther King Day
- Memorial Day
- Independence Day
- Labor Day
- Veterans Day
- Thanksgiving Day
- Christmas Day

When a holiday falls on a Sunday, the following Monday shall be recognized as a legal holiday. When a holiday falls on Saturday, the preceding Friday shall be recognized as a legal holiday.

H.3 PARTIAL OCCUPANCY OR USE

H.3.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage, provided such occupancy or use is consented to by public authorities having jurisdiction over the Work. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have reasonably accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, insurance or self-insurance, maintenance, heat, utilities, and damage to the Work, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents with respect to such portion of the Work. Approval by the Contractor to partial occupancy or use shall not be unreasonably withheld. Immediately prior to such partial occupancy or use, the Owner and Contractor shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work. Partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

SECTION I
CORRECTION OF WORK

I.1 CORRECTION OF WORK BEFORE FINAL PAYMENT

The Contractor warrants to the Owner that materials and equipment furnished under the Contract will be of good quality and new unless otherwise required or permitted by the Contract Documents, that the Work will be free from defects, and that the Work will conform to the requirements of the Contract Documents. Work failing to conform to these requirements shall be deemed defective. Contractor shall promptly remove from the premises and replace all defective materials and equipment as determined by the Owner, whether incorporated in the Work or not. Removal and replacement shall be without loss or expense to the Owner, and Contractor shall bear the cost of repairing all Work destroyed or damaged by such removal or replacement. Contractor shall be allowed a period of no longer than thirty (30) Days after Substantial Completion for completion of defective (Punch List) work. At the end of the thirty-day period, or earlier if requested by the Contractor, Owner shall arrange for inspection of the Work by the Architect/Engineer. Should the work not be complete, and all corrections made, the costs for all subsequent reinspections shall be borne by the Contractor. If Contractor fails to complete the Punch List work within the thirty (30) Day period, Owner may perform such work and Contractor shall reimburse Owner all costs of the same within ten (10) Days after demand without affecting Contractor's obligations.

I.2 WARRANTY WORK

I.2.1 Neither the final certificate of payment nor any provision of the Contract Documents shall relieve the Contractor from responsibility for defective Work and, unless a longer period is specified, Contractor shall correct all defects that appear in the Work within a period of one year from the date of issuance of the written notice of Substantial Completion by the Owner except for latent defects which will be remedied by the Contractor at any time they become apparent. The Owner shall give Contractor notice of defects with reasonable promptness. Contractor shall perform such warranty work within a reasonable time after Owner's demand. If Contractor fails to complete the warranty work within such period as Owner determines reasonable, or at any time in the event of warranty work consisting of emergency repairs, Owner may perform such work and Contractor shall reimburse Owner all costs of the same within ten (10) Days after demand, without affecting Contractor's obligations. The Contractor shall perform the warranty Work by correcting defects within twenty-four (24) hours of notification by Owner, unless otherwise specified in the Contract Documents. Should the Contractor fail to respond within the specified response time, the Owner may, at its option, complete the necessary repairs using another contractor or its own forces. If Owner completes the repairs using Owner's own forces, Contractor shall pay Owner at the rate of one and one-half (1½) times the standard hourly rate of Owner's forces, plus related overhead and any direct non-salary costs. If Owner completes the repairs using another contractor, Contractor shall pay Owner the amount of Owner's direct costs billed by the other contractor for the work, plus the direct salary costs and related overhead and direct non-salary expenses of Owner's forces who are required to monitor that contractor's work. Work performed by Owner using Owner's own forces or those of another contractor shall not affect the Contractor's contractual duties under these provisions, including warranty provisions.

I.2.2 Nothing in this Section I.2 provision shall negate guarantees or warranties for periods longer than one year including without limitation, such guarantees or warranties required by other sections of the Contract Documents for specific installations, materials, processes, equipment or fixtures.

I.2.3 In addition to Contractor's warranty, manufacturer's warranties shall pass to the Owner and shall not take effect until such portion of the Work covered by the applicable warranty has been accepted in writing by the Owner.

I.2.4 The one-year period for correction of Work shall be extended with respect to portions of Work performed after Substantial Completion by the period of time between Substantial Completion and the actual performance of the Work, and shall be extended by corrective Work performed by the Contractor pursuant to this Section, as to the Work corrected. The Contractor shall remove from the site portions of the Work which are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

I.2.5 Nothing contained in this Section I.2 shall be construed to establish a period of limitation with respect to other obligations which the Contractor might have under the Contract Documents. Establishment of the period for correction of Work as described in this Section I.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

I.2.6 If the Owner prefers to accept Work which is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Price will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

SECTION J
SUSPENSION AND/OR TERMINATION OF THE WORK

J.1 OWNER'S RIGHT TO SUSPEND THE WORK

J.1.1 The Owner has the authority to suspend portions or all of the Work due to the following causes:

(a) Failure of the Contractor to correct unsafe conditions;

(b) Failure of the Contractor to carry out any provision of the Contract;

(c) Failure of the Contractor to carry out orders;

(d) Conditions, in the opinion of the Owner, which are unsuitable for performing the Work;

(e) Time required to investigate differing site conditions;

(f) Any reason considered to be in the public interest.

J.1.2 The Owner shall notify Contractor and the Contractor's Surety in writing of the effective date and time of the suspension, and Owner shall notify Contractor and Contractor's surety in writing to resume Work.

J.2 CONTRACTOR'S RESPONSIBILITIES

J.2.1 During the period of the suspension, Contractor is responsible to continue maintenance at the project just as if the Work were in progress. This includes, but is not limited to, protection of completed Work, maintenance of access, protection of stored materials, temporary facilities, and clean-up.

J.2.2 When the Work is recommenced after the suspension, the Contractor shall replace or renew any Work damaged during the suspension, remove any materials or facilities used as part of temporary maintenance, and complete the Work in every respect as though its prosecution had been continuous and without suspension.

J.3 COMPENSATION FOR SUSPENSION

J.3.1 Depending on the reason for suspension of the Work, the Contractor or the Owner may be due compensation by the other party. If the suspension was required due to acts or omissions of Contractor, the Owner may assess the Contractor actual costs of the suspension in terms of administration, remedial work by the Owner's forces or another contractor to correct the problem associated with the suspension, rent of temporary facilities, and other actual costs related to the suspension. If the suspension was caused by acts or omissions of the Owner, the Contractor may be due compensation which shall be defined using Section D, Changes in Work. If the suspension was required through no fault of the Contractor or the Owner, neither party shall owe the other for the impact.

J.4 OWNER'S RIGHT TO TERMINATE CONTRACT

J.4.1 The Owner may, without prejudice to any other right or remedy, and after giving Contractor seven (7) Days' written notice and an opportunity to cure, terminate the Contract in whole or in part under the following conditions:

(a) If Contractor should, voluntarily or involuntarily, seek protection under the United States Bankruptcy Code and Contractor as debtor-in-possession or the Trustee for the estate fails to assume the Contract within a reasonable time;

(b) If Contractor should make a general assignment for the benefit of Contractor's creditors;

(c) If a receiver should be appointed on account of Contractor's insolvency;

(d) If Contractor should repeatedly refuse or fail to supply an adequate number of skilled workers or proper materials to carry on the Work as required by the Contract Documents, or otherwise fail to perform the Work in a timely manner;

(e) If Contractor should repeatedly fail to make prompt payment to Subcontractors or for material or labor, or should disregard laws, ordinances or the instructions of the Owner; or

(f) If Contractor is otherwise in breach of any part of the Contract.

(g) If Contractor is in violation of Applicable Laws, either in the conduct of its business or in its performance of the Work.

J.4.2 At any time that any of the above occurs, Owner may exercise all rights and remedies available to Owner at law or in equity, and, in addition, Owner may take possession of the premises and of all materials and appliances and finish the Work by whatever method it may deem expedient. In such case, the Contractor shall not be entitled to receive further payment until the Work is completed. If the Owner's cost of finishing the Work exceeds the unpaid balance of the Contract Price, Contractor shall pay the difference to the Owner.

J.5 TERMINATION FOR CONVENIENCE

J.5.1 Owner may terminate the Contract in whole or in part whenever Owner determines that termination of the Contract is in the best interest of Owner or the public.

J.5.2 The Owner shall provide the Contractor with seven (7) Days prior written notice of a termination for Owner's or for public convenience. After such notice, the Contractor shall provide the Owner with immediate and peaceful possession of the premises and materials located on and off the premises for which the Contractor received progress payment under Section E. Compensation for Work terminated by the Owner under this provision will be according to Section E. In no circumstance shall Contractor be entitled to lost profits for Work not performed due to termination.

J.6 ACTION UPON TERMINATION

J.6.1 Upon receiving a notice of termination, and except as directed otherwise by the Owner, Contractor shall immediately cease placing further subcontracts or orders for materials, services, or facilities. In addition, Contractor shall terminate all subcontracts or orders to the extent they relate to the Work terminated and, with the prior written approval of the Owner, settle all outstanding liabilities and termination settlement proposals arising from the termination of subcontracts and orders.

J.6.2 As directed by the Owner, Contractor shall, upon termination, transfer title and deliver to the Owner all Record Documents, information, and other property that, if the Contract had been completed, would have been required to be furnished to the Owner.

I.6.3 Upon Owner's notice of termination pursuant to either Section J.4 or J.5, if Owner shall so elect, Contractor shall assign to the Owner such subcontracts and orders as Owner shall specify. In the event Owner elects to take assignment of any such subcontract or order, Contractor shall take such action and shall execute such documents as Owner shall reasonably require for the effectiveness of such assignment and Contractor shall ensure that no contractual arrangement between it and its subcontractors or suppliers of any tier or sub-tier shall prevent such assignment.

SECTION K
CONTRACT CLOSE OUT

K.1 RECORD DOCUMENTS

As a condition of final payment (refer also to section E.6), Contractor shall comply with the following: Contractor shall provide Record Documents for the entire project to Owner. Record Documents shall depict the project as constructed and shall reflect each and every change, modification, and deletion made during the construction. Record Documents are part of the Work and shall be provided prior to the Owner's issuance of final payment. Record Documents include all modifications to the Contract Documents unless otherwise directed, and accurate MWESB Reports.

K.2 OPERATION AND MAINTENANCE MANUALS

As part of the Work, Contractor shall submit two completed operation and maintenance manuals ("O & M Manuals") for review by the Owner prior to submission of any pay request for more than 75% of the Work. Owner's receipt of the O & M Manuals shall be a condition precedent to any payment thereafter due. The O & M Manuals shall contain a complete set of all submittals, all product data as required by the specifications, training information, telephone list and contact information for all consultants, manufacturers, installer and suppliers, manufacturer's printed data, record and shop drawings, schematic diagrams of systems, appropriate equipment indices, warranties and bonds. The Owner shall review and return one O & M Manual for any modifications or adjustments required. Prior to submission of its final pay request, Contractor shall deliver two (2) complete and approved sets of O & M Manuals in paper form and one (1) complete and approved set in electronic form to the Owner and Owner's receipt of the O & M Manuals shall be a condition precedent to Owner's obligation to make final payment.

K.3 COMPLETION NOTICES

K.3.1 Contractor shall provide Owner written notice of both Substantial and Final Completion. The certificate of Substantial Completion shall state the date of Substantial Completion, the responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and the time within which the Contractor shall finish all items on the Punch List accompanying the Certificate. Both completion notices must be signed and notarized by the Contractor and signed by the Architect/Engineer (if applicable) and Owner to be valid. The Owner shall provide the final signature on the notices. The notices shall take effect on the date they are signed by the Owner.

K.3.2 Substantial Completion of a facility with operating systems (e.g., mechanical, electrical, HVAC) shall be that degree of completion that has provided a minimum of thirty (30) continuous Days of successful, trouble-free operation, which period shall begin after all performance and acceptance testing has been successfully demonstrated to the Owner. All equipment contained in the Work, plus all other components necessary to enable the Owner to operate the facility in the manner that was intended, shall be complete on the Substantial Completion date. The Contractor may request that a Punch List be prepared by the Owner with submission of the request for the Substantial Completion notice.

K.4 TRAINING

As part of the Work, and prior to submission of the final application for payment, the Contractor shall schedule with the Owner training sessions for all equipment and systems as required by the Contract Documents. Contractor shall schedule training sessions at least two weeks in advance of the date of training to allow Owner to provide its personnel with adequate notice. The O & M Manual shall be used as a basis for training. In addition to any off-site training required by the Contract Documents, training shall include a formal session conducted at the Work site after the equipment and/or system is completely installed and operational in its normal operating environment.

K.5 EXTRA MATERIALS

As part of the Work, Contractor shall provide spare parts, extra maintenance materials, and other materials or products in the quantities specified in the Contract Documents prior to final payment. Delivery point for extra materials shall be designated by the Owner.

K.6 ENVIRONMENTAL CLEAN-UP

As part of the Final Completion notice, or as a separate written notice submitted with or before the notice of Final Completion, the Contractor shall notify the Owner that all environmental and pollution clean-up, remediation and closure have been completed in accordance with all Applicable Laws and pursuant to the authority of all agencies having jurisdiction, and Contractor shall provide Owner with any and all documentation related to the same, including but not limited to directives, orders, letters, certificates and permits related to or arising from such environmental pollution. The notice shall reaffirm the indemnification given under Section F.5.1 above. Contractor's completion of its obligations under this Section K.6 and Owner's receipt of documents evidencing such completion shall be a condition precedent to Owner's obligation to make final payment.

K.7 CERTIFICATE OF OCCUPANCY

Owner's receipt of an unconditioned certificate of occupancy from the appropriate state and/or local building officials shall be a condition precedent to Owner's obligation to make final payment, except to the extent failure to obtain an unconditional certificate of occupancy is due to the fault or neglect of Owner.

K.8 OTHER CONTRACTOR RESPONSIBILITIES

The Contractor shall be responsible for returning to the Owner all property of Owner issued to Contractor during construction such as keys, security passes, site admittance badges, and all other pertinent items. Upon notice from Owner, Contractor shall be responsible for notifying the appropriate utility companies to transfer utility charges from the Contractor to the Owner. The utility transfer date shall not be before Substantial Completion and may not be until Final Completion, if the Owner does not take beneficial use of the facility and the Contractor's forces continue with the Work.

The Owner's property is tobacco free, drug free, and weapons free areas. Contractor shall be required to ensure that its employees, Subcontractors and agents shall comply with the Owner Drug, Tobacco and Weapon Free Campus policies, hereby incorporated by reference.

K.9 SURVIVAL

All warranty and indemnification provisions of this Contract, and all of Contractor's other obligations under this Contract that are not fully performed by the time of Final Completion or termination, shall survive Final Completion or any termination of the Contract.

OREGON INSTITUTE OF TECHNOLOGY
PUBLIC IMPROVEMENT CONTRACT

PERFORMANCE BOND

Bond No.:_____
Solicitation: Bid #2015-01
Project Name: Track & Soccer Project

_____(Surety #1)	Bond Amount No. 1:	$_____
_____(Surety #2)*	Bond Amount No. 2:*	$_____
** If using multiple sureties*	Total Penal Sum of Bond:	$_____

We, _____as Principal, and the above identified Surety(ies), authorized to transact surety business in Oregon, as Surety, hereby jointly and severally bind ourselves, our respective heirs, executors, administrators, successors and assigns firmly by these presents to pay unto the State of Oregon, Oregon State Board of Higher Education (OSBHE), on behalf of the Oregon Institute of Technology, the sum of (Total Penal Sum of Bond) _____ (Provided, that we the Sureties bind ourselves in such sum "jointly and severally" as well as "severally" only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sum only as is set forth opposite the name of such Surety), and

WHEREAS, the Principal has entered into a contract with the State of Oregon, the plans, specifications, terms and conditions of which are contained in the above-referenced Solicitation;

WHEREAS, the terms and conditions of the contract, together with applicable plans, standard specifications, special provisions, schedule of performance, and schedule of contract prices, are made a part of this Performance Bond by reference, whether or not attached to the contract (all hereafter called "Contract"); and

WHEREAS, the Principal has agreed to perform the Contract in accordance with the terms, conditions, requirements, plans and specifications, and all authorized modifications of the Contract which increase the amount of the work, the amount of the Contract, or constitute an authorized extension of the time for performance, notice of any such modifications hereby being waived by the Surety:

NOW, THEREFORE, THE CONDITION OF THIS BOND IS SUCH that if the Principal herein shall faithfully and truly observe and comply with the terms, conditions and provisions of the Contract, in all respects, and shall well and truly and fully do and perform all matters and things undertaken by Contractor to be performed under the Contract, upon the terms set forth therein, and within the time prescribed therein, or as extended as provided in the Contract, with or

without notice to the Sureties, and shall indemnify and save harmless the State of Oregon, OSBHE, and the Oregon Institute of Technology, and members thereof, its officers, employees and agents, against any direct or indirect damages or claim of every kind and description that shall be suffered or claimed to be suffered in connection with or arising out of the performance of the Contract by the Principal or its subcontractors, and shall in all respects perform said contract according to law, then this obligation is to be void; otherwise, it shall remain in full force and effect.

Nonpayment of the bond premium will not invalidate this bond nor shall the State of Oregon, OSBHE or the Oregon Institute of Technology, be obligated for the payment of any premiums.

This bond is given and received under authority of ORS Chapters 279C and 351, the provisions of which hereby are incorporated into this bond and made a part hereof.

IN WITNESS WHEREOF, WE HAVE CAUSED THIS INSTRUMENT TO BE EXECUTED AND SEALED BY OUR DULY AUTHORIZED LEGAL REPRESENTATIVES.

Dated this _____ day of _____, 20__.

PRINCIPAL: _____

By_____
Signature

_____
Official Capacity

Attest: _____
Corporation Secretary

SURETY: _____
[Add signatures for each surety if using multiple bonds]

BY ATTORNEY-IN-FACT:
[Power-of-Attorney must accompany each surety bond]

_____
Name

_____
Signature

_____
Address

_____
City State Zip

_____ _____
Phone Fax

OREGON INSTITUTE OF TECHNOLOGY
PUBLIC IMPROVEMENT CONTRACT

PAYMENT BOND

Bond No.: _____
Solicitation: Bid #2015-01
Project Name: Track & Soccer Project

_____(Surety #1)	Bond Amount No. 1:	$ _____
_____(Surety #2)*	Bond Amount No. 2:*	$ _____
** If using multiple sureties*	Total Penal Sum of Bond:	$ _____

We, _____, as Principal, and the above identified Surety(ies), authorized to transact surety business in Oregon, as Surety, hereby jointly and severally bind ourselves, our respective heirs, executors, administrators, successors and assigns firmly by these presents to pay unto the State of Oregon, Oregon State Board of Higher Education (OSBHE), on behalf of the Oregon Institute of Technology, the sum of (Total Penal Sum of Bond) _____ _____ (Provided, that we the Sureties bind ourselves in such sum "jointly and severally" as well as "severally" only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sum only as is set forth opposite the name of such Surety), and

WHEREAS, the Principal has entered into a contract with the State of Oregon, the plans, specifications, terms and conditions of which are contained in above-referenced Solicitation;

WHEREAS, the terms and conditions of the contract, together with applicable plans, standard specifications, special provisions, schedule of performance, and schedule of contract prices, are made a part of this Payment Bond by reference, whether or not attached to the contract (all hereafter called "Contract"); and

WHEREAS, the Principal has agreed to perform the Contract in accordance with the terms, conditions, requirements, plans and specifications, and schedule of contract prices which are set forth in the Contract and any attachments, and all authorized modifications of the Contract which increase the amount of the work, or the cost of the Contract, or constitute authorized extensions of time for performance of the Contract, notice of any such modifications hereby being waived by the Surety:

NOW, THEREFORE, THE CONDITION OF THIS BOND IS SUCH that if the Principal shall faithfully and truly observe and comply with the terms, conditions and provisions of the Contract, in all respects, and shall well and truly and fully do and perform all matters and things by it undertaken to be performed under said Contract and any duly authorized modifications that are made, upon the terms set forth therein, and within the time prescribed therein, or as extended therein as provided in the Contract, with or without notice to the Sureties, and shall indemnify and save harmless the State of Oregon, OSBHE and the Oregon Institute of Technology, and members thereof, its officers, employees and agents, against any claim for direct or indirect damages of every kind and description that shall be suffered or claimed to be suffered in connection with or arising out of the performance of the Contract by the Contractor or its subcontractors, and shall promptly

pay all persons supplying labor, materials or both to the Principal or its subcontractors for prosecution of the work provided in the Contract; and shall promptly pay all contributions due the State Industrial Accident Fund and the State Unemployment Compensation Fund from the Principal or its subcontractors in connection with the performance of the Contract; and shall pay over to the Oregon Department of Revenue all sums required to be deducted and retained from the wages of employees of the Principal and its subcontractors pursuant to ORS 316.167, and shall permit no lien nor claim to be filed or prosecuted against the State on account of any labor or materials furnished; and shall do all things required of the Principal by the laws of this State, then this obligation shall be void; otherwise, it shall remain in full force and effect.

Nonpayment of the bond premium will not invalidate this bond nor shall the State of Oregon, OSBHE or the Oregon Institute of Technology, be obligated for the payment of any premiums.

This bond is given and received under authority of ORS Chapters 279C and 351, the provisions of which hereby are incorporated into this bond and made a part hereof.

IN WITNESS WHEREOF, WE HAVE CAUSED THIS INSTRUMENT TO BE EXECUTED AND SEALED BY OUR DULY AUTHORIZED LEGAL REPRESENTATIVES:

Dated this _____day of _____, 20__.

PRINCIPAL: _____

By _____
Signature

_____
Official Capacity

Attest: _____
Corporation Secretary

SURETY: _____
[Add signatures for each if using multiple bonds]

BY ATTORNEY-IN-FACT:
[Power-of-Attorney must accompany each bond]

_____
Name

_____
Signature

_____
Address

_____
City State Zip

_____
Phone Fax

OREGON INSTITUTE OF TECHNOLOLGY
PUBLIC IMPROVEMENT CONTRACT
PLANS, SPECIFICATIONS AND DRAWINGS

PROJECT: TRACK & SOCCER PROJECT

Critical Dates: Time is of the essence for this Project. Note the Liquidated Damages requirements as described in the Supplemental General Conditions and in the Public Improvement Agreement Form.

Campus Closed/No Work Dates:	June 7, 2015 through June 14, 2015 July 4, 2015
Substantial Completion:	August 24, 2015
Final Completion:	September 24, 2015

Project Scope: Briefly and without force and effect on requirements of the Contract Documents, the description of the Work of the Contract can be summarized as follows: To furnish all labor, materials and equipment for supervision and other facilities necessary to complete the track and soccer facility improvements at John F. Moehl Stadium including construction of a new rubberized running track and synthetic turf field and throwing events venue. Generally, the project includes removal of the existing rubberized track and related field events, natural grass field, light poles and fixtures, and underlying utilities, and replacement with a new rubberized track and field related field events, synthetic turf field, and sports field lighting, and a separate and distinct track and field throwing events venue across the adjacent private road. The work shall be performed under a single prime contract.

Contacts: Contractors or Subcontractors interested in this Project may **only** contact the below referenced individuals for Project information. Except for the below listed individuals, no interested Contractor or Subcontractor may contact any other individual at Oregon Tech or at the Architect/Engineer design team.

Bid Process/Contract Questions: George Marlton, George.Marlton@oit.edu, 503-821-1277
Owner Project Manager: Scott Pigman, Scott.Pigman@oit.edu, 541-885-1225

Design Team: Ausland Group:
Kelsy Ausland, kausland@auslandgroup.com, 541-659-8729
Todd Powell, tpowell@auslandgroup.com, 541-476-3788

Alternates: There are 5 Alternates for this Project.

ALTERNATE #1: Provide “Sandwich System” Track Surfacing
ALTERNATE #2: Improved Throwing Events Venue Lawn and Irrigation
ALTERNATE #3: Add Geothermal Heat Tubing at Slot Drains
ALTERNATE #4: Bidder Design – Build Geothermal Systems
ALTERNATE #5: Storage Shed, Perimeter Drainage

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Section Includes:

1. Project information.
2. Work covered by Contract Documents.
3. Owner-furnished products.
4. Access to site.
5. Work restrictions.
6. Specification and drawing conventions.

B. Related Requirements:

1. Section 015000 "Construction Facilities" for limitations and procedures governing temporary use of Owner's facilities.

1.03 PROJECT INFORMATION

A. Project Identification:

1. Project Name: Oregon Tech Track & Soccer Project

2. Project Location:

Oregon Institute of Technology
John F. Moehl Stadium
College Way
Klamath Falls, OR 97601

3. Owner: Oregon University System, Oregon Institute of Technology

4. Owner's Representative:

Scott Pigman
Facilities Project and Planning Manager
Oregon Institute of Technology

3201 Campus Drive, Klamath Falls, OR. 97601
541.885.1225 (office) 541.885.1809 (fax)

5. Project Engineer:

Todd Powell, P.E.
Director of Engineering
Ausland Group
541.476.3788

1.04 WORK COVERED BY CONTRACT DOCUMENTS

A. Briefly and without force and effect on requirements of the Contract Documents, the description of the Work of the Contract can be summarized as follows: To furnish all labor, materials and equipment for supervision and other facilities necessary to complete the track and soccer facility improvements at John F. Moehl Stadium including construction of a new rubberized running track and synthetic turf field and throwing events venue. Generally, the project includes removal of the existing rubberized track and related field events, natural grass field, light poles and fixtures, and underlying utilities, and replacement with a new rubberized track and field related field events, synthetic turf field, and sports field lighting, and a separate and distinct track and field throwing events venue across the adjacent private road. The work shall be performed under a single prime contract.

B. BASE BID Work of Project is defined by the Contract Documents and consists of the following:

1. Assumption of permit responsibility and management of all permit requirements;
2. Protection of existing utilities including electrical and water for the purposes of maintaining operation of life safety, fire suppression, and landscape maintenance functions on and around the project site;
3. Temporary erosion and sedimentation control facilities and management of sitework in a manner consistent with permit requirements;
4. Temporary chain link fencing as required to secure all construction, temporary power, water, telecommunications, and all utilities necessary to operate the project on site, temporary sanitary facilities, temporary office and meeting space, management and maintenance of all necessary stockpile, storage, laydown, and parking areas including offsite as necessary;
5. Traffic control including vehicular and pedestrian, including coordination and cooperation with OIT student and daily operations schedules;
6. Protection and Preservation of certain areas of the existing improvements as required for the temporary cessation of work and University Commencement exercise, temporary establishment of the Work Site as shown and described,

and relocation of all equipment and materials, by the Close of Business June 6 until no sooner than 7am, June 15.

7. Removal and on-campus disposal of the existing turf grass and root material including clearing, stripping, loading, transport, and placement as directed; and clearing and grubbing of existing vegetation for off-site disposal;
8. Demolition and offsite disposal including storm drainage, water systems, and irrigation piping and related appurtenances, asphalt paving including rubberized surfacing, various track and field equipment including foundations and anchorages, and other complete and selective demolition;
9. Earthwork including mass excavation and fills, on-site cut and fill, trenching and backfill including trench safety systems, compaction, and fine grading of subgrade surfaces;
10. Storm drainage systems including connection to existing conveyance, new conveyance pipe, manholes and catch basins, inlets, specialty slot-type drains and appurtenances;
11. Wash water, field cooling, and irrigation systems including backflow prevention devices, isolation valves, piping, spray and rotor-type sprinkler heads, automatic solenoid valves, quick coupling valves and fully automatic controllers;
12. Electrical work including demolition of existing panels, wood floodlight poles and floodlights from existing wood floodlight poles to remain. Modification of electrical and sports lighting systems including providing new secondary electrical service, electrical pedestal, floodlight poles, precast foundations, metal poles, brackets, floodlights, conduit, wire, junction boxes, and control system. Provide new floodlights on existing poles;
13. Furnish and install scoreboard conduit and junction boxes;
14. Subsurface perforated drainage systems;
15. Cast in place concrete including perimeter concrete curbing, synthetic turf anchor, walks, slabs;
16. Asphalt concrete paving including site paving and track asphalt paving;
17. Furnish and install rubberized track and field event surfacing;
18. Permeable aggregate materials for the synthetic field areas including edge anchor/nailer;
19. Furnish and install field event components, and other site furnishings;
20. Construction of chain link fencing and gates of various heights;
21. Coordination for installation of an infilled synthetic turf surfacing;
22. Restoration of all disturbed areas including soil improvement, seeding, and establishment.

C. Alternate Bid Items

1. Alternate Bid Item 1, Track Surfacing Upgrade

In lieu of the specified "sealed base matt / structural spray" rubberized track and field event surfacing, provide a "sandwich system" surface at all locations as specified by Section 32 1823 Rubberized Track Surfacing.

2. Alternate Bid Item 2, Improved Irrigation and Soil Preparation

   Provides for improved lawn cover by adding automatic irrigation coverage at Throws Venue landing areas, improving soil amendment requirements at Stadium landscape lawns, Throws Venue landing areas, and Throws Venue grading transition areas, and modifying seed species at Throws Venue landing area. This work is further described in specification Sections 32 9219 Landscape Restoration and 32 8423 Washwater & Irrigation Systems.

3. Alternate Bid Item 3, Slot Drain Geothermal Tubing

   Provide continuous embedded tubing in concrete slot drain encasement as shown and described.

4. Alternate Bid Item 4, Bidder Design - Build Geothermal Systems

   Bidder Design – Build Geothermal Snow Melt System for Base Bid Concrete Sidewalks at John F. Moehl Stadium Parking and Entrance on Campus Way as shown and described. Refer to Specification Section Snow Melting System Section 32 84 40.

5. Alternate Bid Item 5, Storage Shed Perimeter Drainage

   Install perimeter drainage piping as shown and described.

D. Allowance Item: Include in the Base Bid, a Cash Allowance of Five Thousand ($5,000) dollars for exploratory excavation, utility locate, and retrofit of existing water utilities.
   1. Allowance in accordance with Section B.17 of the Oregon Tech General Conditions
   2. Allowance includes materials, delivery, equipment, labor and installation only.
   3. Contractor shall be responsible for all other expenses relating to work, including but not limited to: preparation, storage, coordination, cleaning, etc.
   4. Unused amount of Allowance shall be credited back to the Owner.
   5. Revisions to Allowance and Contract Price shall be by Change Order procedure.

E. Unit Pricing: Provide Unit Pricing for Soil Cement Treatment, to be provided as directed.

F. Type of Contract:

1. Project will be constructed under a single prime contract.

G. Schedule of Project Milestone Dates:

1. Notice to Proceed – March 16, 2015
2. On-Site Occupancy by Contractor – May 4, 2015
3. Temporary Cessation of Site Work, C.o.B. June 6, 2015
4. Worksite Closed for Graduation – June 7, 8, 9, 10, 11, 12, 13, & 14, 2015
5. Resume Work on Site, 7am June 15, 2015
6. Campus Closed for Holiday – July 4, 2015
7. Start of Fall Athletic Practice – August 24, 2015
8. Key Milestone Completion Dates
   a. Track Asphalt Paving and Field Base Complete – June 30, 2015
   b. Synthetic Turf Field Surface – July 24, 2015
   c. Rubberized Track Surface including striping – August 21, 2015
   d. Final Synthetic Turf adjustments following track installation – August 24, 2015
9. Substantial Completion, Owner Occupancy – August 24, 2015 Date of Final Completion – September 24, 2015

1.05 OWNER-FURNISHED PRODUCTS

A. Owner will furnish products indicated. The Work includes receiving, handling, storing, cleaning, protecting, and installing Owner-furnished products.

1. Items include specific Track & Field Event equipment as specifically itemized in Section 11 68 24Equipment & Furnishings.

1.06 SALVAGE

A. The Owner retains first right of refusal to the salvage or salvage value of any and all materials, equipment, furnishings, or artifacts occurring as a part of the work. Specific items to be selectively demolished or removed to the Owner include irrigation valves, sprinkler heads, copper, and appurtenances, wiring, track & field equipment, and select organic components of field grass sod, root zone growing medium, and fill soils.

1.07 ACCESS TO SITE

A. General: Contractor shall have full use of Project site for construction operations during construction period prior to start of Fall Athletic Practice as identified in

Schedule of Milestone Dates above. Contractor's use of Project site is limited only by Owner's right to perform work or to retain other contractors on portions of Project as well as campus and worksite closures for Holidays and Special Events.

B. General: Contractor shall have limited use of Project site for construction operations as indicated on Drawings by the limits of the work and as indicated by requirements of this Section.

C. Access: Keep driveways and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on site.

D. Use of Site: Limit use of Project site to areas within the Contract limits indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.

1. Limits: Confine construction operations to area as directed by Owner's Representative.
2. Driveways, Walkways and Entrances: Keep driveways, loading areas, and entrances serving premises clear and available to Owner, Owner's employees, and emergency and service vehicles at all times. Do not use these areas for parking or storage of materials.
   a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
   b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
   c. No deliveries will be allowed or accepted at campus building loading docks.

1.08 WORK RESTRICTIONS

A. Work Restrictions, General: Comply with restrictions on construction operations.

1. Comply with limitations on use of public streets and private roadways, and with other requirements of authorities having jurisdiction.

B. On-Site Work Hours: Limit work as follows except as specifically authorized in writing.

1. Weekdays: 7:00 am – 7:00 pm.
2. Weekend Hours: Saturday 7:00 am to 7:00 pm.
3. Early Morning Hours: Not permitted before 7:00 am.
4. Hours for site-specific Utility Shutdowns: Coordinate with Owner.

C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:

1. Notify Owner not less than two days in advance of proposed utility interruptions.

D. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.

1. Notify Owner not less than two days in advance of proposed disruptive operations.

E. Nonsmoking Campus: Smoking is not permitted on the project site.

F. Controlled Substances: Use of tobacco products and other controlled substances on Project site is not permitted.

G. Employee Screening: Comply with Owner's requirements for drug and background screening of Contractor personnel working on Project site.

1. Maintain list of approved screened personnel with Owner's representative.

H. Enclosure Fence: Install a 6 ft. ht. enclosure fence with lockable entrance gates where necessary to enclose the project site including equipment and materials as required to ensure security of the site, work in progress, and the general public.

1.09 SPECIFICATION AND DRAWING CONVENTIONS

A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.

B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.

C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:

1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
2. Abbreviations: Materials and products are identified by abbreviations published as part of the U.S. National CAD Standard and scheduled on Drawings.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 01 00

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Schedule of Values

B. Applications for Payment

1.02 REFERENCED DOCUMENTS

General Conditions of the Contract, Section E.1, E.2
Example Schedule of Values 01 0201 (follows)
American Institute of Architects (AIA) Form G702 Application for Payment
AIA Form G703 Schedule of Values
01 31 00 Schedules & Reports
01 70 00 Project Closeout

1.03 SUBMITTALS

A. Under provisions of this Section and Section E.1 of the General Conditions, submit a detailed Schedule of Values for approval within 5 business days of site mobilization and prior to first application for payment.

1.04 SCHEDULE OF VALUES

A. Schedule of Values shall:

1. Break down Contract price into specific tasks and areas of work similar to that shown on the example Schedule of Values form provided; no exceptions allowed.
    a. Identify each line item with number and title of respective Specification Section where applicable.
    b. Where payment for materials on hand will be requested, divide divisions of Work into separate line items for materials and labor.
    c. For individual line items exceeding 5% of the total Contract Value, break out further into specific area or location.
2. Include "Contract Closeout" per Section 01 70 00 as a separate item in the amount of not less than two percent (2%) of the total Contract sum. Do not assign closeout values to individual Specification Sections. Retain contract closeout as one lump sum under Section 01 70 00.
3. For Awarded Alternate Bid Item(s), identify each under a separate header, breaking out the total value into individual applicable specified scopes of work as above.
4. Make sum of all scheduled values equal to the total Awarded Contract sum.

5. Distribute overhead and profit over the duration of the Project and prorate overhead and profit over each line item.

B. Upon request, support values given in the Schedule of Values with data that will substantiate their correctness.

C. Revise and resubmit Schedule of Values as required by Engineer.

D. After acceptance, the Schedule of Values will be used as the basis for review of payment applications.

E. No application for payment will be considered until the Schedule of Values is received, reviewed, and accepted by the Engineer.

1.05 APPLICATIONS FOR PAYMENT

A. Contractor's applications for payment will be reviewed by the Engineer, Engineer's consultants, Owner, and Client Agency at monthly intervals unless determined otherwise by the Owner.

B. Monthly cut-off dates for each month's application shall be as acceptable to Owner, Engineer, and Contractor.

C. Itemize each application in accordance with the accepted Schedule of Values. Furnish data to substantiate amounts requested as required by the Owner or Engineer.

D. Prepare Applications for Payment on AIA Form G702 and G703 continuation sheets.

E. Prior to submitting the final draft of each pay application, electronically submit a rough-draft to the Engineer for review of percentage completion claimed. Engineer will review progress of work relative to the pay application. Revise and resubmit payment application until acceptable to Engineer.

F. Analyze and reconcile, to the satisfaction of the Owner, the actual progress of the Work with the progress schedule required by Section 01 31 00.

G. Refer to General Conditions regarding payment for stored materials, progress payments, retainage, payments withheld, and additional information.

H. Submit 3 notarized hardcopy originals to the Engineer upon final acceptance of the percentages completion claimed.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Not used.

END OF SECTION 01 02 00

OREGON TECH

Track & Soccer Project

01 02 00 Schedule of Values (Example AIA G703 Continuation Form)

Contractor:

Application No.

Date:

Item Description	Total Value	Percent Complete	Total Progress	Prior Payments	This Period	Balance
General Conditions						
Project Superintendence	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Temporary Facilities	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Contract Administration	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Bonding & Insurance	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Total for General Conditions	$ 4.00	0%	$ -	$ -	$ -	$ 4.00
Stadium Site Preparation & Earthwork						
Construction Survey & Staking	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Selective Demolition of Utilities (Irrig., Low Voltage)	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Miscellaneous Demolition Allowance	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Rubberized Surfacing & ACP Removal	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Sod & Organics, Stripping & Stockpiling @ 5" / 0.417'	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Sod & Organics, Hauling & Placement (on campus)	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Excavation to Subgrade, All competition areas (-0.58')	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Excavation Allowance, Crown & Javelin (avg. +1.0')	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Excavation Hauling & Placement (at Throws Venue)	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Storm Drainage Demolition - Laterals, Mains, CB/MH	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Total for Stadium Site Prep	$ 10.00	0%	$ -	$ -	$ -	$ 10.00
Stadium Field & Track Construction						
Construction Survey	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Type 1 Catch Basins	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Type 2 Catch Basin	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
8" CPEP Drainage Piping	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
12" CPEP Drain & Connection	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Track Subgrade Establishment	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Interior Edge Track Slot Drain	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Track Perimeter Concrete Curb	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Track & Events Areas Aggregate Base (7.5" depth)	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Track & D Area Asphalt Paving (2", 1 lift, with Base Aggregate)	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Track & Events Area Concrete Paving (4" reinforced)	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Radius Point Monuments	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Track Perimeter Removable Curb	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Pole Vault Boxes & Stanchion Pad	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Long Jump Curb Pit 9 x30	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Long Jump Pit Sand	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Long Jump Take Off Boards & Trays	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Discus Pad, Ring	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Discus Cage, Portable	$ 1.00	0%	$ -	$ -	$ -	$ 1.00

OREGON TECH

Track & Soccer Project

01 02 00 Schedule of Values (Example AIA G703 Continuation Form)

Contractor:

Application No.

Date:

Item Description	Total Value	Percent Complete	Total Progress	Prior Payments	This Period	Balance
Steeplechase Water Jump/Pit/Cover	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Potable Water Supply - Jump Pit	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Drain from Jump Pit to Track Drainage	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Hand Holes for Track Timing/Power	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Spare Conduit for Track Timing/Power	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Field Subgrade Establishment	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Synthetic Turf Edge Anchor	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Washwater Irrigation Piping (3" Restrained IPS PVC)	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Hunter STK-2 Turf Cooler Assembly	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Structural Fabric	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Subsurface Drainage (12" Flat Drainage)	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Permeable Base Aggregate (8" avg.)	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Permeable Aggregate Fine Grading	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Total for Field & Track Construction	$ 32.00	0%	$ -	$ -	$ -	$ 32.00
Off Site Throws Venue Site Prep						
Stripping & Outhaul, 100,000sf @ 2"	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Grading & Compaction, Imported Fills, Avg. 2.7'	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Fine Grading to Subgrade	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Miscellaneous	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Total for Throws Venue Site Prep	$ 4.00	0%	$ -	$ -	$ -	$ 4.00
Off Site Throws Venue Improvements						
Javelin Runway Concrete	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Discus Pad, Ring	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Hammer Pad, Ring	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Discus/Hammer Cage	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Throwing Events Landing Area Soil Prep & Hydroseed	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Miscellaneous	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Total for Throws Venue Improvements	$ 6.00	0%	$ -	$ -	$ -	$ 6.00
Rubberized Surfacing						
13mm Sealed Base Matt / Structural Spray Track Surfacing	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
13mm Sealed Base Matt / Structural Spray Field Events	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Javelin Runway Sealed Base Matt / Structural Spray	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Running Track Striping & Markings	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Total for Rubberized Surfacing	$ 4.00	0%	$ -	$ -	$ -	$ 4.00
Field Synthetic Turf						
Infilled Synthetic Turf, 2.25" Slit Film, Competetive	$ 1.00	0%	$ -	$ -	$ -	$ 1.00

OREGON TECH

Track & Soccer Project

01 02 00 Schedule of Values (Example AIA G703 Continuation Form)

Contractor:

Application No.

Date:

Item Description	Total Value	Percent Complete	Total Progress	Prior Payments	This Period	Balance
Pre-Fabricated Mid-Field Logo	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Synthetic Turf Materials - Surplus	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Maintenance Equipment	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Pre-shipment Testing	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
G-Max Testing	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Total for Field Synthetic Turf	$ 6.00	0%	$ -	$ -	$ -	$ 6.00
Stadium Site Restoration						
Reconfigure Ex. Irrigation P.O.C.	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Irrigation Mainlines - 2" Sch. 40 PVC	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Controllers, Rainbird ESP-MC-12 and -24, Pedestal	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Lawn Irrigation Zones	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Rough Grading	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Reclaimed Topsoil, 2" incorporated to 4"	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Finished Grade	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Hydroseeding & Establishment	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Total for Stadium Site Restoration	$ 8.00	0%	$ -	$ -	$ -	$ 8.00
01 70 00 Contract Closeout (+/-2% of Total)	$ 1.48	0%	$ -	$ -	$ -	$ 1.48
Total Track & Soccer Project	**$ 74.00**	**0%**	**$ -**	**$ -**	**$ -**	**$ 74.00**
Alternate Bid Items						
Upgrade to Sandwich System Rubberized Track Surfacing	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Improved Soil Prep., & Auto Irrigation @ Throwing Events	$ 1.00	0%	$ -	$ -	$ -	$ 1.00
Total Alternate Bid Items	**$ 2.00**	**0%**	**$ -**	**$ -**	**$ -**	**$ 2.00**

PART 1 - GENERAL

1.01 Related Documents

A. Drawings and general provisions of the Contract, including General Conditions and other Division 0 and 1 Specification Sections, apply to this Section.

B. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 1 Section "Field Engineering" specifies procedures for field engineering services, including establishment of benchmarks and control points.
2. Division 1 Section "Project Meetings" for progress meetings, coordination meetings, and preinstallation conferences.
3. Division 1 Section "Schedules and Reports" for preparing and submitting the Contractor's Construction Schedule.
4. Division 1 Section "Project Closeout" for coordinating contract closeout.

1.02 Summary

A. This Section includes administrative, supervisory, and operational requirements necessary for coordinating the construction including, but not necessarily limited to, the following:

1. General project coordination procedures
2. Coordination with the Owners daily operational requirements
2. Coordination Drawings
3. Cleaning and protection

1.03 Coordination

A. The Contractor shall coordinate and cooperate with the Owners daily operations, i.e., there is acknowledgement and agreement that the work site is on an active college campus and as such in addition to a daily routine including patterns of vehicular and pedestrian traffic, service vehicles, there will be occasional one-time events where increased traffic may make the logistics of the work difficult or impossible. These inconveniences are accepted as a condition of the work.

B. Coordinate construction operations included in various Sections of these Specifications and in other Contract Documents to assure efficient and orderly installation of each part of the Work within the allowed duration. Coordinate construction operations included under different Sections that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in the sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
2. Coordinate installation of different components to assure maximum accessibility for required maintenance, service, and repair.
3. Make provisions to accommodate items scheduled for later installation.
4. At all times that Work is underway on the Project, the Contractor's superintendent or a fully knowledgeable and qualified foreman, shall be on the site to assure proper coordination of the Work.

C. Where necessary, prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and attendance at meetings.

1. Prepare similar memoranda for the Owner and separate contractors where coordination of their work is required.

D. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and assure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of schedules.
2. Installation and removal of temporary facilities.
3. Delivery and processing of submittals.
4. Progress meetings.
5. All inspections.
6. Project closeout activities.

PART 2 – PRODUCTS – NOT USED

PART 3 - EXECUTION

3.01 General Coordination Provisions

A. Inspection of Conditions: Require the Installer of each major component to inspect both the substrate and conditions under which Work is to be performed. Do not proceed until unsatisfactory conditions have been corrected in an acceptable manner.

B. Coordinate temporary enclosures with required inspections and tests to minimize the necessity of uncovering completed construction for that purpose.

3.02 Campus Operations

A. Provide temporary fencing, ground plates, railings, and other pedestrian aids to insure safe passage near and around the work. Where requested by the Owner, provide additional safety barricades or alternate routes to maintain the safe separation of pedestrians and construction activities.

B. Store all equipment, materials, vehicles, debris, and refuse beyond the reach of pedestrian traffic in secure enclosures.

C. Make modifications to construction haul routes and schedules as necessary to insure that campus operations are not unduly impacted.

D. Remove all gravel, dirt, dust, mud, and debris from construction haul routes daily at a minimum, or immediately when accumulation results in a specific complaint or Owner request for cleanup.

3.03 Cleaning And Protection

A. Clean and protect construction in progress and adjoining materials in place, during handling and installation. Apply protective covering where required to assure protection from damage or deterioration until Substantial Completion.

B. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to assure operability without damaging effects.

C. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

END OF SECTION 01 04 00

PART 1 - GENERAL

1.01 Related Documents

A. Drawings and general provisions of the Contract, including General Conditions and other Division 0 & 1 Specification Sections, apply to this Section.

1.02 Summary

A. This Section includes administrative and procedural requirements for all cutting and patching necessary to complete the Work.

B. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 1 Section "Coordination" for procedures for coordinating cutting and patching with other construction activities and daily campus operations.
2. Refer to other Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.

1.03 Planning/ Engineering

A. Cutting and Patching Plan: Prepare a plan describing procedures well in advance of the time cutting and patching will be performed. Include the following information, as applicable, in the plan:

1. Describe the extent of cutting and patching required. Show how it will be performed and indicate why it cannot be avoided.
2. Describe anticipated results in terms of changes to existing construction. Include changes to structural elements and operating components as well as changes in the building's appearance and other significant visual elements.
3. List products to be used and firms or entities that will perform Work.
4. Indicate dates when cutting and patching will be performed.
5. Utilities: List utilities that cutting and patching procedures will disturb or affect. List utilities that will be relocated and those that will be temporarily out-of-service. Indicate how long service will be disrupted.
6. Where cutting and patching involves adding reinforcement to, or shoring of, structural elements, have details and calculations prepared by a licensed engineer showing integration of reinforcement with the original structure.
7. Planning and engineering of the Contractor's cutting and patching does not waive the Owner or Engineer's right to later require complete removal and replacement of unsatisfactory work.

B. Traffic Management

1. Schedule work in coordination with Campus Operations to insure uninterrupted traffic flow.
2. Provide certified flaggers where lane restrictions will be imposed by the work. Install temporary signage and barricades to properly channelize traffic within a safe distance of the work and workers.
3. Where the work cannot be completed within one days' work provide adequate temporary measures to allow free flow of traffic, including steel plates etc.

1.04 Quality Assurance

A. Operational Limitations: Do not cut and patch operating elements or related components in a manner that would result in reducing their capacity to perform as intended. Do not cut and patch operating elements or related components in a manner that would result in increased maintenance or decreased operational life or safety.

B. Visual Requirements: Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in the Engineer's opinion, reduce the building's aesthetic qualities. Do not cut and patch construction in a manner that would result in visual evidence of cutting and patching. Remove and replace construction cut and patched in a visually unsatisfactory manner.

1.05 Warranty

A. Existing Warranties: Replace, patch, and repair material and surfaces cut or damaged by methods and with materials in such a manner, and with certified specialists where required, so as not to void any warranties required or existing.

PART 2 - PRODUCTS

2.01 Materials

A. Use materials identical to existing materials or as otherwise specified. For exposed surfaces, use materials that visually match existing adjacent surfaces if identical materials are unavailable or cannot be used. If matching material is not available, replace entire surface, component or assembly so that patch is not visible. Use materials whose installed performance will equal or surpass that of existing materials.

PART 3 - EXECUTION

3.01 Inspection

A. Examine surfaces to be cut and patched and conditions under which cutting and patching is to be performed before cutting. If unsafe or unsatisfactory conditions are encountered, take corrective action before proceeding and notify the Owner and Engineer.

3.02 Preparation

A. Temporary Support: Provide temporary support and bracing of work to be cut.

B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of the Project that might be exposed during cutting and patching operations.

C. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

3.03 Performance

A. General: Employ skilled workmen to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time and complete without delay. Where original work required specialists or used a specific trade, the same specialist and/ or trade shall execute the cutting and patching unless another specialist/ trade is better suited due to conditions present. Cut existing construction to provide for installation of other components or performance of other construction activities and the subsequent fitting and patching required to restore surfaces to their original condition.

B. Cutting: Cut existing construction using methods least likely to damage elements retained or adjoining construction. Where possible, review proposed procedures with the original Installer; comply with the original Installer's recommendations.

1. In general, where cutting, use hand or small power tools designed for sawing or grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
2. To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces. Use conventional drills, not roto-hammers.
4. Comply with requirements of applicable Technical Specificationss where cutting and patching requires excavating and backfilling.
5. Where services are required to be removed, relocated, or abandoned, by-pass utility services, such as pipe or conduit, before cutting. Cut-off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal the remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after by-passing and cutting.

C. Patching: Patch with durable seams that are as invisible as possible. Comply with specified tolerances.

1. Where feasible, inspect and test patched areas to demonstrate integrity of the installation.
2. Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.

3.04 Cleaning

A. Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, solder, oils, putty, sealant and similar items. Thoroughly clean piping, conduit, and similar features before applying paint or other finishing materials. Restore damaged pipe covering to its original condition.

END OF SECTION 01 04 50

PART 1 - GENERAL

1.01 Related Documents

A. Drawings and general provisions of the Contract, including General Conditions and other Division 0 and 1 Specification Sections, apply to this Section.

B. Section 31 00 00 Earthwork contains requirements specific to the layout of the work.

C. Section 32 18 23 Rubberized Track Surfacing requires preparation of record documents certifying compliance with NCAA requirements for the measurement of track event distances.

1.02 Summary

A. General: This Section specifies administrative and procedural requirements for field-engineering services including, but not limited to land survey and construction layout work.

B. The Contractor shall employ an Oregon Licensed Land Surveyor (“the Surveyor”) to establish the major horizontal and vertical layout and control of the work.

C. Provide an as-built Record of the work.

PART 2 – PRODUCTS – NOT USED

PART 3 - EXECUTION

3.01 Examination

A. Identification: The documents will identify existing control points and property line corner stakes where known. Where not so identified in the documents, Surveyor to locate and identify.

B. Verify layout information shown on the Drawings, in relation to the site survey and existing benchmarks, before proceeding to lay out the Work. Locate and protect existing benchmarks and control points. Preserve permanent reference points during construction.

1. Do not change or relocate benchmarks or control points without prior written approval. Promptly report lost or destroyed reference points or requirements to relocate reference points because of necessary changes in grades or locations.

2. Promptly replace lost or destroyed Project control points. Base replacements on the original survey control points.

C. Establish and maintain the number of permanent benchmarks on the site as required by the Work, but not less than 2, referenced to data established by survey control points.

1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.

D. Existing Utilities and Equipment: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning site work, investigate and verify the existence and location of underground utilities and other construction.

1. Prior to construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping.

3.02 Performance

A. Work from lines and levels established by the property survey. Establish benchmarks and markers to set lines and levels at each story of construction and elsewhere as needed to locate each element of the Project. Calculate and measure required dimensions within indicated or recognized tolerances. Do not scale Drawings to determine dimensions.

1. Advise entities engaged in construction activities of marked lines and levels provided for their use.
2. As construction proceeds, check every major element for line, level, and plumb.

B. Surveyor's Log: Maintain a surveyor's log of control and other survey work. Make this log legible and available for reference.

1. Record deviations from required lines and levels, and advise the Engineer when deviations that exceed indicated or recognized tolerances are detected. On Project Record Drawings, record deviations that are accepted and not corrected.

C. Site Improvements: Locate and lay out site improvements, including pavements, stakes for grading, fill and topsoil placement, utility slopes, and invert elevations.

D. Existing Utilities: Furnish information necessary to adjust, move, protect or relocate existing structures, utility poles, lines, services, or other appurtenances

located in or affected by construction. Coordinate with local authorities having jurisdiction.

3.03 Record Drawings

A. From the Surveyors Log and Field Books, prepare and submit a record drawing of the work including location of the following physical improvements;

1. Track Layout Radius Monuments
2. Track Rubberized Surfacing limits
3. Track Measuring Line
4. Storm Drainage Catch Basins, Manholes, and Junctions including pipe inverts, sump bottom, and rim
5. Water Systems appurtenances including valves and points of connection
6. Conduits (includes electrical raceways and sleeves for other utilities, empty or otherwise)

END OF SECTION 01 05 00

PART 1 - GENERAL

1.01 Related Documents

A. Drawings and general provisions of the Contract, including General Conditions and other Division 0 and 1 Specification Sections, apply to this Section.

1.02 Summary

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

1. Pre-construction conferences.
2. Pre-installation conferences.
3. Progress meetings.
4. Coordination meetings.

B. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 1 Section "Coordination" for procedures for coordinating project meetings with other construction activities.
2. Division 1 Section "Submittals" for submitting the Contractor's Construction Schedule.
3. Technical Specification Sections requiring preconstruction, coordination or preinstallation meetings.

C. Recording: The Owner has the right to record all events and actions related to the Work by the most convenient means necessary. Such recording may include, but is not limited to, the electronic collection of voice and images by tape recorders, videography and electronic or standard camera. Such recording may occur at anytime and at any location where Work, including component storage, manufacture or fabrication, or meetings related to the project are occurring, on or off the site. This right shall be included in all sub-contractor and supplier agreements with the Contractor.

1.03 Preconstruction Conference

A. The Owner will schedule a preconstruction conference before the start of construction, at a time convenient to the Owner, Contractor and the Engineer, but no later than 15 days after execution of the Agreement. The conference will be held at the Project Site or another convenient location. The meeting shall be conducted to review responsibilities and personnel assignments.

B. Attendees: Authorized representatives of the Owner, Engineer, and their consultants; the Contractor and its superintendent; major subcontractors; manufacturers; suppliers; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with the Project and authorized to conclude matters relating to the Work.

C. Agenda: Discuss items of significance that could affect progress, including the following:

1. Outstanding Contract issues, if any, to include the Contract, Bonds, Insurance or other requirements.
2. Designation of responsible personnel to include representative(s) of the Owner; the Engineer; Contractor's project manager and superintendent; major sub-contractors and Owner's on-site staff/ occupant representative.
3. Tentative construction schedule.
4. Critical work sequencing.
5. Review of concurrent work by Owner or others.
6. Status of outstanding Permits.
7. Coordination issues relative to on-going Owner occupancy and site use, if any.
8. Coordination issues relative to maintaining good neighborhood relations and achieving noise, storm water run-off and dust control.
9. Procedures and routing of communications for processing field decisions and Change Orders.
10. Procedures and routing of communications for processing Applications for Payment.
11. Distribution of Contract Documents.
12. Procedures and routing of communications for Shop Drawings, Product Data, and Samples.
13. Special Inspections, Testing and Quality Control.
14. Preparation of record documents including daily logs.
15. Use of the premises.
16. Establishment of regular progress meeting schedule.
17. Site access and parking availability.
18. On-site office, work, and storage areas.
19. Equipment deliveries and priorities.
20. Safety procedures.
21. Security.
22. Housekeeping and sanitary facilities.
23. Working hours.
24. Review of Contract Documents and outstanding questions related thereto.
25. Review of Owner furnished items.

1.04 Preinstallation Conferences

A. Conduct a preinstallation conference at the Project Site before each construction activity that requires coordination with other Contracts of the Owner or major subcontractors.

B. Attendees: The Installer and representatives of manufacturers, sub-contractors, Contractor, Owner's representative and Owner's special inspector involved in or affected by the installation, and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise the Engineer of scheduled meeting dates.

1. Review the progress of other construction activities and preparations for the particular activity under consideration at each preinstallation conference, including requirements for the following:
   a. Contract Documents.
   b. Deliveries.
   c. Shop Drawings, Product Data, and quality-control samples.
   d. Possible conflicts.
   e. Time schedules.
   f. Weather limitations.
   g. Manufacturer's recommendations.
   h. Acceptability of substrates.
   i. Temporary facilities.
   j. Space and access limitations.
   k. Safety.
   l. Inspecting and testing requirements.
   m. Protection.
2. Meetings shall be held on-site. Record significant discussions and agreements and disagreements of each conference, and the approved schedule. Distribute the record of the meeting to everyone concerned, including the Owner and the Engineer within two days.
3. Do not proceed with the installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of Work and reconvene the conference at the earliest feasible date.

1.05 Progress Meetings

A. Conduct progress meetings at the Project Site on a weekly basis. The schedule of the meetings shall be established by mutual consent of the Owner, Engineer and Contractor. No changes to said schedule shall be made without mutual consent of the same parties. Coordinate dates of meetings with preparation of the payment request.

B. Attendees: In addition to representatives of the Owner and the Engineer, each subcontractor, supplier, special inspector or other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with the Project and authorized to conclude matters relating to the Work.

C. Agenda: Review and correct or approve minutes of the previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to the status of the Project.

1. Contractor's Construction Schedule: Review progress since the last meeting. Distribute Contractor's two week look ahead schedule. Determine where each activity is in relation to the Contractor's Schedule, whether on time or ahead or behind schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to insure that current and subsequent activities will be completed within the Contract Time.
2. Review unresolved issues previously discussed or reported. (Old Business).
3. Review the present and future needs (New Business) of each entity present, including, but not limited to, the following:
   a. Interface requirements.
   b. Time.
   c. Sequences.
   d. Status of submittals.
   e. Status of Requests for Information
   e. Deliveries.
   f. Off-site fabrication or delivery problems.
   g. Access.
   h. Site utilization.
   i. Temporary facilities and services.
   j. Hours of work.
   k. Hazards and risks.
   l. Housekeeping.
   m. Quality and work standards.
   n. Status of Field Directives and Change Orders.
   o. Documentation of information for payment requests.
   p. Problems from or affecting Occupants.
   q. Problems from or affecting neighbors.

D. Reporting: The Engineer shall, no later than 7 days after each meeting, distribute minutes of the meeting to each party present and to parties who should have been present. Include a brief summary, in narrative form, of progress since the previous meeting and report.

1. Schedule Updating: Revise the Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue the revised schedule by the next meeting.

PART 2 – PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION 01 20 00

PART 1 - GENERAL

1.01 Related Sections

A. Supplemental General Conditions

B. Technical Specifications

1.02 Requirements

A. General Conditions of the Contract govern. Augmented details include but are not limited to the following:

1. Construction Schedules per 01 3110
2. Schedule of Values per 01 2000
3. Shop Drawings, Product Data, and Samples
4. Material Safety Data Sheets (MSDS)
5. List of Subcontractors
6. Manufacturer's Certificates

B. Electronic File Transfer

1. Reference to hardcopy submittal requirements may be waived and over-ridden where the Engineer has negotiated agreement on electronic file format between the Owner, Engineer, and Contractor (typically .pdf). Electronic files shall be transferred in true, original document size.
2. Record Drawings and Survey Data Files shall be submitted in both vectorised and rasterized formats (AutoCAD 2014 compatible, Adobe PDF compatible).
3. Electronic File Page Limit: Do not submit electronic files containing over 20 pages of data. Break files into logical groups of information and submit separately.
4. File Size Limitation: Electronic submittals should be kept to a 5MB limit wherever possible to allow transfer between all parties. Where excessive file size is anticipated make arrangements in advance for third-party file sharing or the use of alternative media such as compact disc.

1.03 Shop Drawings, Product Data and Samples

A. The Contractual requirements for shop drawings, product data, and samples are specified. Submit three (3) copies for Engineer approval.

B. Shop Drawings: submit Shop Drawings for fabricated and other work, as required by Specifications and Drawings. Fabricate no work until Shop Drawings have been accepted.

1. Show by whom materials, items, work, and installation are supplied, performed, or installed. Designate every item, material article, and the like, of installations. DO NOT use the expression "by others".
2. Shop Drawings will not be reviewed without the General Contractor's signed review stamp affixed. It is the General Contractor's responsibility to verify dimensions and verify the number of each item required to complete the Work.
3. If Shop Drawings show variations from Contract requirements because of standard shop practices or other reason, make specific mention of such variations in your transmittal.
    a. If indicated departures affect a correlated function, item, article, work, installation or construction of other trades, make note of it in your transmittal. If extra cost is involved in related changes, you assume all such costs.

C. Product Data: submit six copies unless otherwise requested. Mark each copy to identify applicable products, models, options, and other data; supplement manufacturers' standard data to provide information unique to the Work. Include manufacturers' installation instructions when required by the Specification section.

D. MSDS: For each and any chemical which is known to be present in the workplace, submit Materials Safety Data sheets (MSDS).

1. Attach to each copy of product data above and submit one extra copy for Engineer's use.
2. Copies submitted to Engineer are for Engineer's information and use and will not be reviewed for completeness or appropriateness on project site.

E. Samples:

1. Submit full range of manufacturer's colors, textures, and patterns for Engineer's selection prior to ordering.
2. Samples are required to illustrate product's functional characteristics with integral parts and attachment devices. Coordinate submittal of different categories for interfacing work.
3. Include identification on each sample, giving full information.
4. Provide field finishes at Project as required by individual specification section. Install sample complete and finished. Acceptable finishes in place may be retained in completed Work.

1.06 List of Proposed Subcontractors

A. Submit for Engineer’s approval, at the pre-construction meeting, a list of proposed subcontractors and suppliers who shall install, or furnish and install work in the Project.

B. Major Subcontractors have been pre-qualified through the Pre-Qualification process – changes in this area requires approval.

1.07 Prevailing Wages

A. Submit all documentation in compliance with ORS 279C.845, the State of Oregon Bureau of Labor and Industries, and Section C Paragraph 2 of the General Conditions.

1.08 Warranties

A. Submit upon completion of the project Warranties specified.

1.09 Engineer's Review Responsibilities

A. Engineer shall review only for general conformance and compliance with Project design concept and Contract Documents. Any action shown is subject to Contract Document requirements. Contractor responsible for dimensions (confirm and correlate at job site); fabrication processes; construction techniques; quantities, space requirements, coordination of work with that of all other trades; union jurisdiction, infringements of patent rights, possible cause of injury to persons or property; satisfactory performance of the Work, and the like.

B. Engineer's review of separate items does not constitute review of assembly in which it functions.

PART 2 – PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION 01 30 00

PART 1 - GENERAL

1.01 Related Documents

A. Drawings and general provisions of the Contract, including General Conditions and other Division 0 and 1 Specification Sections, apply to this Section.

1.02 Summary

A. This Section includes administrative and procedural requirements for schedules and reports required for proper performance of the Work, including:

1. Contractor's construction schedule.
2. Two week look ahead bar chart schedules.
3. Daily construction reports.
4. Field correction reports.
5. Special reports.

B. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 1 Section "Applications for Payment" specifies requirements for submittal of the Schedule of Values.
2. Division 1 Section "Project Meetings" specifies requirements for submittal and distribution of meeting and conference minutes.
3. Division 1 Section "Quality Control" specifies requirements for submittal of inspection and test reports.
4. Division 1 Section "Materials and Equipment" specifies requirements for submittal of the list of products.

1.03 Submittal Procedures

A. Coordination: Coordinate preparation and processing of schedules and reports with performance of other construction activities; all sub-contractors; suppliers and fabricators; the Owner and Engineer.

1.04 Contractor's Construction Schedule

A. Schedule: Submit four copies of a schedule within 15 days of the Notice to Proceed to the Engineer. For ease of analysis, computer color coded and color printed schedules are preferred.

1. Provide a separate time bar for each significant construction activity. Coordinate with the Schedule of Values and further subdivide as necessary to

properly track all significant work activity. Use the specification Section numbers and Titles as a standard.

2. Provide a continuous vertical line to identify the first working day of each week.
3. Prepare the schedule on a sheet, or series of sheets, of sufficient width to show data for the entire construction period. Format as appropriate to produce an easily legible document at minimum 8-1/2”x11”, maximum 11”x17”.
4. Secure time commitments for performing critical elements of the Work from parties involved. Coordinate each element on schedule with other construction activities. Include minor elements involved in the overall sequence of the Work. Show each activity in proper sequence. Indicate graphically the sequences necessary for completion of related portions of the Work.
5. Indicate completion in advance of the date established for Substantial Completion. Indicate Substantial Completion on the schedule to allow time for the Engineer's administrative procedures necessary for certification of Substantial Completion.
6. No Application for Payment will be reviewed nor payment made, beyond the initial mobilization payment, if the complete Schedule has not been submitted and approved or is not up to date. The complete schedule must be reviewed and approved in writing by the Owner and Engineer before becoming part of the Contract. The approved Schedule will be a tool for the Engineer and Owner to evaluate project progress, allocate funds and assess the reasonableness of Application for Payment amounts and Owner's disbursements related thereto.

B. Work Stages: Use crosshatched bars or other acceptable highlighting to indicate important stages of construction for each major portion of the Work.

C. Distribution: Following response to the initial submittal, print and distribute four copies to the Engineer. Provide copies to subcontractors and other parties required to comply with scheduled dates. Post copies in the Project meeting room and temporary field office. When revisions are made, distribute in the same numbers to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in construction activities.

D. Schedule Updating: Revise the schedule after each meeting, event, or activity where revisions have been recognized or made and where mutually agreed upon by the Owner and Engineers. Issue the updated schedule within seven days of the agreement for the revisions.

1. If the overall schedule falls more than one week behind schedule the Contractor shall immediately prepare a written explanation of the delay and proposed course of action, including specifics of manpower, scheduling, use of

premium time, etc. to bring the project back onto the original schedule or a new schedule that reaches the same date of Substantial Completion.

2. Revised schedules shall show actual start/stop/completion dates overlaid with original planned dates.

1.05 Two Week Look Ahead Schedule

A. Each week the Contractor shall prepare and present a bar chart type schedule showing the planned activities for the next two weeks. The time bars shall be coordinated with the activities list. Unless otherwise directed by the Owner, this schedule shall be presented at the weekly meeting by the Contractor.

1. Provide four copies to the Engineer at the time of the weekly Progress Meeting.
2. Format as necessary to be easily legible. If hand drawn, all graphics and text shall be clear to all recipients.

1.06 Reports

A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at the site. Submit duplicate copies to the Engineer and the Owner, or the Owner's Clerk of the Works if the Owner so designates, at weekly intervals:

1. List of subcontractors at the site.
2. Count of personnel at the site by trade and man-hours per day.
3. Actual work accomplished broken down by trade.
4. General weather conditions.
5. Accidents.
6. Meetings and significant decisions.
7. Unusual events (refer to special reports).
8. Stoppages, delays, shortages, and losses.
9. Inspections and tests performed and their results, if known.
10. Orders and requests of governing authorities.
11. Services connected, disconnected.

PART 2 – PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION 01 31 10

PART 1 - GENERAL

1.01 Related Documents

A. Drawings and general provisions of the Contract, including General Conditions and other Division 0 and 1 Specification Sections, apply to this Section.

1.02 Summary

A. This Section includes administrative and procedural requirements for submittal of Shop Drawings, Product Data and Samples.

B. Shop Drawings include, but are not limited to, the following:

1. Shop drawings for prefabricated products

C. Product Data include, but are not limited to, the following:

1. Manufacturer's product specifications.
2. Manufacturer's installation instructions.
3. Standard color charts.
4. Catalog cuts.
5. Standard product operating and maintenance manuals.

D. Samples include, but are not limited to, the following:

1. Permeable Aggregate materials
2. Subsurface Drainage Backfill
3. Field Imported Sands

E. Administrative Submittals: Refer to other Division 1 Sections and other Contract Documents for requirements for administrative submittals. Such submittals include, but are not limited to, the following:

1. Permits.
2. Applications for payment.
3. Performance and payment bonds.
4. Insurance certificates.
5. Listing of subcontractors.

F. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 1 Section "Coordination" specifies requirements governing preparation and submittal of required Coordination Drawings.

2. Division 1 Section "Schedules and Reports" specifies requirements for submittal of required schedules and reports, including the Submittal Schedule.
3. Division 1 Section "Quality Control" specifies requirements for submittal of inspection and test reports and the erection of mockups.
4. Division 1 Section "Project Closeout" specifies requirements for submittal of Project Record Documents, including copies of final Shop Drawings, at project closeout.

1.03 Definitions

A. Coordination Drawings show the relationship and integration of different construction elements that require careful coordination during fabrication or installation to fit in the space provided or to function as intended.

1.04 Submittal Procedures

A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal to the Engineer sufficiently in advance of scheduled performance of related construction activities to allow for review, re-submittals and avoid delay.

B. Processing Time: To avoid the need to delay installation as a result of the time required to process submittals, allow sufficient time for submittal review, including time for re-submittals. Allow 14 days for the initial review of each submittal when only the Engineer must review. Allow additional time if the Engineer must delay processing to permit coordination with subsequent submittals. The Engineer will advise the Contractor when a submittal being processed must be delayed for coordination. No extension of Contract Time will be authorized due to delays caused by the Contractor's failure to transmit submittals to the Engineer sufficiently in advance of the Work to permit timely processing. Deficiencies in the submittals and any delays related thereto are solely the responsibility of the Contractor. The Owner and Engineer make no guarantee for turnaround time when submittals involve the input, review or other action by the authority having jurisdiction or other entities and agencies over which the Owner has no control or authority.

C. Submittal Preparation: Place a permanent label or title block on each submittal for identification.

1. Indicate name, address, telephone number, fax number and responsible contact person of the firm or entity that prepared each submittal on the label or title block.

2. Provide a dedicated space approximately 4 by 5 inches (100 by 125 mm) on the label or beside the title block to record the review markings and the action taken by the Engineer.

3. Include the following information on the label for processing and recording action taken.
   a. Project name.
   b. Original date.
   c. Name and telephone number of the supplier.
   d. Name and telephone number of the manufacturer.
   e. Number and title of appropriate Specification Section.
   f. Drawing number and detail references, as appropriate.

D. Submittal Transmittal: Package each submittal appropriately for transmittal and handling. Transmit each submittal from the Contractor to the Engineer and to other destinations by use of a common, approved transmittal form. The Engineer will return without comment or action submittals received from sources other than the Contractor or submittals that do not have the Contractor's stamp of review for conformance to the Contract Documents.

1.05 Shop Drawings

A. Submit newly prepared information, drawn accurately to scale. Do not reproduce Contract Documents or copy standard printed information as the basis of Shop Drawings.

1. Include the following information on Shop Drawings:
   a. Dimensions.
   b. Identification of products and materials included and their finishes.
   c. Notation of dimensions established by field measurement.
2. Highlight, encircle, or otherwise indicate deviations from the Contract Documents on the Shop Drawings.
3. Do not allow Shop Drawing copies that do not contain an appropriate final stamp or other marking indicating the action taken by the Engineer to be used in construction.

1.06 Product Data

A. Collect Product Data into a single submittal for each element of construction or system. Mark each copy to show which choices and options are applicable to the Project.

1. Where Product Data includes information on several similar products, some of which are not required for use on the Project, mark copies clearly to indicate which products are applicable. Product Data submitted with multiple product information and not clearly marked as too which is the submitted product will be returned without action.
2. Do not submit Product Data until compliance with requirements of the Contract Documents has been confirmed and the submittal is so stamped by

the Contractor's with notation of review for conformance to the Contract Documents.

B. Submittals: Submit 6 copies of each required Product Data submittal. Submit additional copies as required for maintenance manuals or extra distribution. The Engineer, Owner and each relevant consultant will retain a copy each. The remainder will be returned marked with the action taken and corrections or modifications required.

1. Unless the Engineer observes noncompliance with provisions of the Contract Documents, the submittal may serve as the final submittal.
2. Where product data sheet(s) do not have a 4 by 5 inch clear space for Engineer stamp and review comments, provide a staple attached clean white sheet of paper for this purpose. Such sheet shall have the typed or neatly hand printed name of the product and the specification section to which it is relevant.

1.07 Engineer's Action

A. Except for submittals for the record or for information, where action and return of submittals is required, the Engineer will review each submittal, mark to indicate the action taken, and return. Compliance with specified characteristics is the Contractor's responsibility and not considered part of the Engineer's review and indication of action taken.

B. Action Stamp: The Engineer will stamp each submittal with a uniform, action stamp. The Engineer will mark the stamp appropriately to indicate the action taken, as follows:

1. Final Unrestricted Release: Where submittals are marked "No Exception Taken," the Work covered by the submittal may proceed provided it complies with requirements of the Contract Documents. Final acceptance will depend on that compliance.
2. Final-but-Restricted Release: When submittals are marked "See Consultant Comments" or "Note Markings on Drawing/Resubmission Not Required", the Work covered by the submittal may proceed provided it complies with both the Engineer's notations or corrections on the submittal and requirements of the Contract Documents. Final acceptance will depend on that compliance.
3. Returned for Resubmittal: When submittal is marked "Revise and Resubmit," do not proceed with the Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal according to the Engineer's notations. Resubmit without delay. Repeat if necessary to obtain a different action mark. Do not permit submittals marked "Revise and Resubmit" to be used at the Project Site or elsewhere where construction is in progress.

4. Rejected: When submittal is marked "Rejected," do not proceed with the Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Do not revise this submittal as it is substantively unacceptable for the intended purpose or is otherwise out of conformance with Contract Documents. Prepare a new submittal according to the Engineer's notations and in conformance with the Contract Documents. Provide an appropriate and correct submittal without delay. Do not permit submittals marked "Rejected" to be used at the Project Site or elsewhere where construction is in progress.
5. Other Action: Where a submittal is primarily for information or record purposes or for special processing or other contractor activity, the submittal will be returned, marked "Action Not Required."

END OF SECTION 01 34 00

PART 1 - GENERAL

1.01 Related Documents

A. Drawings and general provisions of the Contract, including General Conditions and other Division 0 and 1 Specification Sections, apply to this Section.

1.02 Summary

A. This Section includes administrative and procedural requirements for quality-control services.

B. Quality-control services include inspections, tests, and related actions, including reports performed by Contractor, by independent agencies, and by governing authorities. They do not include contract enforcement activities performed by Engineer.

C. Inspection and testing services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with Contract Document requirements.

D. Requirements of this Section relate to customized fabrication and installation procedures, not production of standard products.

1. Specific quality-control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
2. Specified inspections, tests, and related actions do not limit Contractor's quality-control procedures that facilitate compliance with Contract Document requirements.
3. Requirements for Contractor to provide quality-control services required by Engineer, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

E. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 1 Section "Cutting and Patching" specifies requirements for repair and restoration of construction disturbed by inspection and testing activities.
2. The following Technical Specifications may include very specific language as to the properties or performance of materials in their finished condition. The Contractor shall perform such testing and inspection to insure compliance;

31 00 00 Earthwork
31 22 16 Subgrade Establishment

32 12 18	Track Asphalt Paving
32 18 23	Rubberized Track Surfacing
32 18 24	Infilled Synthetic Turf
32 18 25	Imported Sands
33 46 16	Subsurface Drainage
33 46 23	Permeable Aggregate

1.03 Responsibilities

A. Contractor Responsibilities: Unless otherwise indicated as the responsibility of another identified entity, Contractor shall provide inspections, tests, and other quality-control services specified elsewhere in the Contract Documents and required by authorities having jurisdiction.

1. Where individual Sections specifically indicate that certain inspections, tests, and other quality-control services are the Owner's responsibility, the Owner will employ and pay a qualified independent testing agency to perform those services.
2. The Owner reserves the right to employ independent inspectors and observers for any and all aspects of the Work. These inspectors and observers may be assigned or reassigned at any time during the Project. Items of the Work frequently subject to Owner's special inspection include, but are not limited to:
   a. Earthwork & Soil Compaction
   b. Imported Granular Materials
   c. Asphaltic Concrete Paving
   d. Concrete and Reinforcing Steel (Site & pre-cast shop, if any)

B. Retesting: The Contractor is responsible for retesting where results of inspections, tests, or other quality-control services prove unsatisfactory and indicate noncompliance with Contract Document requirements, regardless of whether the original test was Contractor's responsibility.

1. The cost and time of retesting construction, revised or replaced by the Contractor, is the Contractor's responsibility where required tests performed on original construction indicated noncompliance with Contract Document requirements.

C. Associated Services: Cooperate with agencies performing required inspections, tests, and similar services, and provide reasonable auxiliary services as requested. Notify the agency sufficiently in advance of operations to permit assignment of personnel. Auxiliary services required include, but are not limited to, the following:

1. Provide access to the Work.
2. Furnish incidental labor and facilities necessary to facilitate inspections and tests.

3. Take adequate quantities of representative samples of materials that require testing or assist the agency in taking samples.
4. Provide facilities for protective storage and curing of test samples.
5. Deliver samples to testing laboratories.
6. Provide the agency with a preliminary design mix proposed for use for materials mixes that require control by the testing agency.
7. Provide security and protection of samples and test equipment at the Project Site.

D. Duties of the Testing Agency: The independent agency engaged to perform inspections, sampling, and testing of materials and construction specified in individual Sections shall cooperate with the Engineer and the Contractor in performance of the agency's duties. The testing agency shall provide qualified personnel to perform required inspections and tests.

1. The agency shall perform whatever inspections, tests and sampling is necessary to reasonably ensure that the Work is in conformance with the Contract Documents, industry standards and requirements of the authority having jurisdiction, whichever is the most stringent. Inspection and testing methods shall be of the highest quality in conformance with appropriate recognized standards such as those published by ACI, ASTM, ANSI, ICBO, etc.; as specified in the technical Sections of this manual and as required by the authority having jurisdiction.
2. The agency shall notify the Engineer and the Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services. Notification shall consist of direct verbal conversation in person or by telephone within one hour of detection of the deficiency. Copies of draft field notes shall be left at the site with the Contractor and the Clerk of the Works, if any. Copies of the same shall be faxed to the Engineer within two hours. A more formal typewritten and neatly printed report shall be delivered or faxed to all parties noted above within 48 hours. A final fully reviewed and edited report shall be delivered to all parties within five working days.
3. The agency is not authorized to release, revoke, alter, or enlarge requirements of the Contract Documents or approve or accept any portion of the Work.
4. The agency shall not perform any duties of the Contractor.

E. Coordination: Coordinate the sequence of activities to accommodate required services with a minimum of delay. Coordinate activities to avoid the necessity of removing and replacing construction to accommodate inspections and tests.

1. The Contractor is responsible for scheduling times for inspections, tests, taking samples, and similar activities.

F. Notification: The Contract is responsible for scheduling times for all inspections, tests, taking samples and similar activities.

1. Notify Owner's Representative at least 48 hours in advance before inspection will be required.
2. Notify testing laboratory sufficiently in advance of operations (not less than 48 hours) to allow for laboratory assignment of personnel and scheduling of tests.
3. Contractor shall be responsible for costs incurred when testing agency is notified for services but work is not ready or complete for inspection, testing, taking samples, and / or similar activities.

1.04 Submittals

A. Unless the Contractor is responsible for this service, the independent testing agency shall submit a certified written report, in duplicate, of each inspection, test, or similar service to the Engineer with copies to the Owner and Contractor. If the Contractor is responsible for the service, submit a certified written report, in duplicate, of each inspection, test, or similar service through the Contractor.

1. Submit additional copies of each written report directly to the governing authority, when the authority so directs.
2. Report Data: Written reports of each inspection, test, or similar service include, but are not limited to, the following:
   a. Date of issue.
   b. Project title, address and number.
   c. Name, address, and telephone number of testing agency.
   d. Dates and locations of samples and tests or inspections.
   e. Names of individuals making the inspection or test.
   f. Designation of the Work and test method.
   g. Identification of product and Specification Section.
   h. Complete inspection or test data.
   i. Test results and an interpretation of test results.
   j. Ambient conditions at the time of sample taking and testing.
   k. Comments or professional opinion on whether inspected or tested Work complies with Contract Document requirements.
   l. Name and signature of laboratory inspector.
   m. Recommendations on retesting.

1.05 Quality Assurance

A. Qualifications for Service Agencies: Engage inspection and testing service agencies, including independent testing laboratories, that are pre-qualified as complying with the American Council of Independent Laboratories' "Recommended Requirements for Independent Laboratory Qualification" and that specialize in the types of inspections and tests to be performed.

1. Each independent inspection and testing agency engaged on the Project shall be authorized by authorities having jurisdiction to operate in the jurisdiction where the Project is located.

PART 2 – PRODUCTS – NOT USED

PART 3 - EXECUTION

3.01 Repair and Protection

A. General: Upon completion of inspection, testing, sample taking and similar services, repair damaged construction and restore substrates and finishes. Comply with Contract Document requirements for Division 1 Section "Cutting and Patching."

B. Protect construction exposed by or for quality-control service activities, and protect repaired construction.

C. Repair and protection is Contractor's responsibility, regardless of the assignment of responsibility for inspection, testing, or similar services.

END OF SECTION 01 40 00

PART 1 - GENERAL

1.01 Related Documents

A. Drawings and general provisions of the Contract, including General Conditions and other Division 0 and 1 Specification Sections, apply to this Section.

1.02 Summary – Owner Furnished Utilities

A. Owner shall make available and pay for the following utilities:

1. Water service and distribution
2. Temporary electric power and light.

B. Contractor shall be responsible for all cost, time, and administrative function necessary to effect any modification related to the connection and or extension of utilities to the project work area.

1.03 Summary – Contractor Furnished Utilities

This Section includes requirements for construction facilities and temporary controls, including temporary utilities, support facilities, and security and protection. Contractor shall pay all costs associated with items listed.

A. Temporary utilities include, but are not limited to, the following:

1. Telephone and facsimile service.
2. Sanitary facilities and services, including drinking water.
3. Proper disposal of Construction Site Stormwater runoff.

B. Support facilities include, but are not limited to, the following:

1. Field offices and storage sheds.
2. Dewatering facilities and drains.
3. Temporary enclosures.
4. Temporary project identification signs.
5. Waste disposal services.
6. Construction aids and miscellaneous services and facilities.

C. Security and protection facilities include, but are not limited to, the following:

1. Barricades.
2. Secure enclosure fence for the site or work areas.
3. Landscape protection.
4. Environmental protection.

5. Traffic Control Devices.

1.04 Quality Assurance

A. Regulations: Comply with industry standards and applicable laws and regulations of authorities having jurisdiction including, but not limited to, the following:

1. Building code requirements.
2. Health and safety regulations.
3. Utility company regulations.
4. Police, fire department, and rescue squad rules.
5. Environmental protection regulations including, but not limited to, control of storm water runoff, dust and noise.
6. State and OSHA Safety requirements.

B. Standards: Comply with NFPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations," ANSI A10 Series standards for "Safety Requirements for Construction and Demolition," and NECA Electrical Design Library "Temporary Electrical Facilities."

1. Electrical Service: Comply with NEMA, NECA, and UL standards and regulations for temporary electric service. Install service in compliance with NFPA 70 "National Electric Code."

C. Inspections: Arrange for authorities having jurisdiction to inspect and test each temporary utility before use. Obtain required certifications and permits.

1.05 Project Conditions

A. Conditions of Use: Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Relocate temporary services and facilities as the Work progresses. Do not overload facilities or permit them to interfere with progress. Take necessary fire-prevention measures. Do not allow hazardous, dangerous, or unsanitary conditions, or public nuisances to develop or persist on-site.

B. The Contractor shall provide free, safe and unencumbered access on or across the site for personnel, vehicles and equipment authorized to use the site by the Owner but not under Contract of the Contractor.

C. The Contractor shall maintain streets and sidewalks around the project site in a clean condition. By means of a regular monitoring and maintenance program of sweeping and hosing, minimize the accumulation of dirt and dust on said areas.

D. The Contractor shall protect all adjoining private or municipal property and shall provide barricades, temporary fences and covered walkways to protect the safety of passers-by, as required by prudent construction practice, local building codes, ordinances, other laws or the Contract Documents.

E. The Contractor shall, at its sole cost and expense, promptly repair any damage or disturbance to walls, fences, utilities, sidewalks, curbs, landscaping and any other property of third parties (including municipalities) or work already existing resulting from the performance of the Work, whether by it, or by its subcontractors at any tier. The Contractor shall maintain streets in good repair and traversable condition.

F. The Contractor shall maintain both new and existing Work, materials and equipment free from injury or damage from rain, wind, storms, dust, or heat at all times.

PART 2 - PRODUCTS

2.01 Materials

A. Water: Provide potable water approved by local health authorities.

B. Open-Mesh Fencing: Provide 11 gauge, galvanized 2-inch mesh chainlink fabric fencing minimum 6 feet high. For in ground installation use galvanized steel pipe posts, 1-1/2 inches I.D. for line posts and 2-1/2 inches I.D. for corner posts. Where portable fencing is used, same gage, mesh and height but posts may be as standard for fencing system and shall seat tightly in concrete or other solid foundation blocks designed solely for use with fencing. Fencing shall be securely bolted or chained against unauthorized entry at all section joints and corners. Use of barbed, razor or electrified wire is not allowed.

2.02 Equipment

A. General: Provide new equipment. If acceptable to the Engineer, the Contractor may use undamaged, previously used equipment in serviceable condition. Provide equipment suitable for use intended.

B. Water: Provide water service as required by the work including all piping, trenching/ backfilling, valves, pressure reducing stations, taps and hose bibs. Provide water for both drinking and construction use.

C. Electricity: Obtain necessary temporary service and transformers from local utility as required to adequately power project for all activities.

D. Temporary Offices: Provide prefabricated or mobile units or similar job-built construction with lockable entrances, operable windows, and serviceable finishes.

E. Temporary Toilet Units: Provide self-contained, single-occupant toilet units of the chemical or aerated recirculation type. Provide units properly vented and fully enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material. Units to have privacy locks and to not have other types of locks that might allow personnel to be locked in.

F. Fire Extinguishers: Provide hand-carried, portable, UL-rated, Class A fire extinguishers for temporary offices and similar spaces. In other locations, provide hand-carried, portable, UL-rated, Class ABC, dry-chemical extinguishers or a combination of extinguishers of NFPA-recommended classes for the exposures.

PART 3 - EXECUTION

3.01 Installation

A. Use qualified personnel for installation of temporary facilities. Locate facilities where they will serve the Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.

B. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.02 Temporary Utility Installation

A. General: Engage the appropriate local utility company to install temporary service or connect to existing service. Where company provides only part of the service, provide the remainder with matching, compatible materials and equipment. Comply with company recommendations.

1. Arrange with company and existing users for a time when service can be interrupted, if necessary, to make connections for temporary services.
2. Provide adequate capacity at each stage of construction. Prior to temporary utility availability, provide trucked-in services.
3. Obtain easements to bring temporary utilities to the site where the Owner's easements cannot be used for that purpose.
4. Use Charges: Cost or use charges for temporary facilities are chargeable to the Owner as indicated. Cost or use charges for temporary facilities are not chargeable to the Engineer. Neither the Owner nor Engineer will accept cost or use charges as a basis of claims for Change Orders.

B. Temporary Communications Devices: Provide temporary telephone, answering machine, and facsimile service throughout the construction period for all personnel engaged in construction activities.

1. Post a list of important telephone numbers including emergency numbers.
2. Cellular telephone: The Project Superintendent(s) shall be provided with a mobile telephone to be operational and on his/ her person at all times during the Work. The number of this device shall be given to the Owner, Engineer and, if the site is Owner occupied, the Principal.

C. Sanitary facilities: Include temporary toilets and drinking-water fixtures. Comply with regulations and health codes for the type, number, location, operation, and maintenance of fixtures and facilities. Use of permanent facilities existing or provided under this contract is not permitted unless explicitly noted.

1. Provide toilet tissue, paper cups, and similar disposable materials for each facility. Provide covered waste containers for used material.
2. Provide safety showers, eyewash fountains, and similar facilities for convenience, safety, and sanitation of personnel where materials being handled or governing regulations and health codes require.

D. Drinking-Water Facilities: Provide containerized, tap-dispenser, bottled-water drinking-water units, including paper supply.

E. Filter site runoff and employ further purification as required by local jurisdiction prior to discharging into storm drainage system. Provide drainage ditches, erosion control, pumping and similar facilities as required by local jurisdiction and as required to prevent all uncontrolled or unacceptable run-off from reaching neighboring properties, drainage ways, streams, rivers, ponds, lakes or other wetlands, Owner occupied portions of the site or public right of ways.

1. Filter out soil, construction debris, chemicals, oils, and all contaminants that might clog sewers, drainage ways or pollute waterways or soils, before discharge.
2. Maintain temporary storm sewers and drainage facilities in a clean, sanitary and fully functioning condition. Following use, restore to clean fully functioning conditions promptly. Assign responsible personnel and monitor facilities during storms and similar events to ensure full function of facilities and protections noted above. This monitoring shall take place around the clock and over weekends and holidays as events warrant. Damage to neighboring properties, waterways, public right of ways, the Owner's property or the Work of this Contract due to failure to monitor or maintain shall be solely the responsibility of the Contractor. Damage shall be repaired to original or better condition and all fines/ penalties paid promptly.

3. Provide and maintain any temporary erosion and sedimentation control measures required by the local jurisdiction and the Contract Documents and any additional measures prudent to prevent uncontrolled or unacceptable storm water runoff from leaving the property.

F. Provide earthen embankments, solid covers and similar barriers in and around excavations and subgrade construction, sufficient to prevent flooding by rain or runoff of storm water and any additional measures prudent to allow maximally productive pursuit of the Work. Provide flashing marker lights, barricades, solid covers and other devices as necessary to keep workers or passersby from falling in excavations or tripping/falling over hazards.

3.03 Support Facilities Installation

A. Locate field offices, storage sheds, and other temporary construction and support facilities for easy access. Maintain support facilities until near Substantial Completion. Remove prior to Substantial Completion, if possible. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, where conditions acceptable to the Owner can be met.

B. Provide incombustible construction for offices, shops, and sheds located within the construction area or within 30 feet (9 m) of building or property lines. Comply with requirements of NFPA 241.

C. Field Offices: Provide insulated, weathertight temporary offices of sufficient size to accommodate required office personnel at the Project Site. Keep the office clean and orderly. If not otherwise noted in the Contract Documents, provide at least one dedicated 8 by 12 foot space for use for progress and other meetings. Furnish and equip with a firm table, 8 chairs, ample light, power, heat, cooling, ventilation, a four by eight foot white board, and a four by eight foot tack surface, securely wall mounted.

D. Dewatering Facilities and Drains: For temporary drainage and dewatering facilities and operations not directly associated with construction activities included under individual Sections, comply with dewatering requirements of applicable Division 2 Sections and the DEQ Permit. Where feasible, utilize the same facilities. Maintain the site, excavations, and construction free of water.

E. Collection and Disposal of Waste: Collect waste from construction areas and elsewhere daily. Comply with requirements of NFPA 241 for removal of combustible waste material and debris. Enforce requirements strictly. Do not hold materials more than 7 days during normal weather or 3 days when the temperature is expected to rise above 80 deg F (27 deg C). Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose of material lawfully.

3.04 Security and Protection Facilities Installation

A. Do not change over from use of temporary security and protection facilities to permanent facilities until Substantial Completion, or longer, as requested by the Engineer.

B. Barricades, Warning Signs, and Lights: Comply with standards and code requirements for erection of structurally adequate barricades. Paint with appropriate colors, graphics, and warning signs to inform personnel and the public of the hazard being protected against. Where appropriate and needed, provide lighting, including flashing red or amber lights.

C. Enclosure Fence: Before starting Work, install an enclosure fence with lockable entrance gates. Locate where indicated, or enclose the entire site or the portion determined sufficient to accommodate construction operations. Install in a manner that will prevent people, dogs, and other animals from easily entering the site, except by the entrance gates. Maintain strict accounting and control of keys and locks. If keys are lost or unaccounted for, the locks shall be immediately changed.

1. Where projects are phased or otherwise have multiple stages, steps or where Owner occupancy will change over the course of a project, presume that fencing will have to be reconfigured accordingly as many times as necessary to safely and securely accommodate such phases, stages and changes.
2. At no time shall fencing be allowed to become a safety hazard to anyone or be unsecured/ unmaintained so that it does not afford reasonable security protection.

D. Security Enclosure and Lockup: Install substantial temporary enclosure of partially completed areas of construction. Provide locking entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security.

1. Storage: Where materials and equipment must be stored, and are of value or attractive for theft or usable for vandalism, provide a secure lockup. Enforce discipline in connection with the installation and release of material to minimize the opportunity for theft and vandalism. Maintain strict accounting and control of keys and locks. If keys are lost or unaccounted for, the locks shall be immediately changed.

E. Landscape Protection: Protect existing trees, shrubs and lawns within and adjacent to the area of the Work where not scheduled for demolition or replacement. Where minor limb or root pruning is necessary to avoid interference with construction, employ a certified tree surgeon recognized by the International Society of Arboriculture or the National Arborist Association. Any pruning shall be

approved by the Engineer and the Owner's grounds maintenance staff prior to executing the Work.

1. If necessary and feasible, trees and shrubs may be removed, protected and maintained during the Work and reinstalled just prior to Substantial Completion. Trees and shrubs shall be moved by, or the moving supervised by, a licensed landscape contractor. Where type or size of trees and shrubs will not allow such handling, protect by means of substantial barriers that will allow organism to live but will keep people, construction operations, equipment and storage at a safe distance, especially off of the root structure - outside the drip line. Barriers shall be erected well outside the drip line. Consult with the Engineer and the Owner's grounds maintenance staff prior to executing the Work. Similar barriers shall be erected around all moved plant material. Provision shall be made for the proper care and maintenance of all plant material during construction.

F. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations, and minimize the possibility that air, waterways, and subsoil might be contaminated or polluted or that other undesirable effects might result. Avoid use of tools and equipment that produce harmful noise. Restrict use of noise-making tools and equipment to hours that will minimize complaints from persons or firms near the site.

1. Obey City of Klamath Falls Noise Control Ordinances. These ordinances shall be obeyed or where violation may be necessary for specific and justifiable reasons, the appropriate official within the jurisdiction shall be duly notified in writing well in advance of the planned occurrence. Generally, anytime during the Project where noise producing work is anticipated outside of the hours of 8:00 AM to 6:00 PM weekdays, the Contractor shall coordinate his operations with the agency responsible for enforcement of the local Noise Control Ordinance. Reschedule work where possible. If rescheduling is not possible, provide mitigation by employing noise barriers or other acoustical control where feasible.
2. The City of Klamath Falls may have Nuisance Ordinances or similar. These ordinances shall be obeyed. These ordinances cover such concerns as dust, foul smells and other nuisances to the general population. The Contractor shall coordinate his operations with the agency responsible for enforcement of such local ordinances. Provide water, water trucks, sprinklers, hoses, piping and related materials and equipment and all other requirements as needed to control dust.
3. The City of Klamath Falls and Oregon Institute of Technology places great value on the relationship between itself and the citizens it serves. Good neighbor relations are critically important to schools as they foster a strong sense of community and encourage citizen participation in schools which in turn yields a

better educational environment for students. The Contractor shall do everything within its power to avoid in anyway jeopardizing the Owner's relationship with the community in general and the Project neighbors specifically. It is suggested the Contractor select a point of contact within its organization to deal with neighborhood public relations for the duration of the Project.

3.05 Operation, Termination, and Removal

A. Supervision: Enforce strict discipline in use of temporary facilities. Limit availability of temporary facilities to essential and intended uses to minimize waste and abuse.

B. Maintenance: Maintain facilities in good operating condition until removal. Protect from damage by freezing temperatures, winds, snow loads, rain, storm water run-off, theft, vandalism, earthquake and similar elements.

C. Termination and Removal: Unless the Engineer requests that it be maintained longer, remove each temporary facility when the need has ended, when replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with the temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

1. Materials and facilities that constitute temporary facilities are the Contractor's property. The Owner reserves the right to take possession of project identification signs.
2. Remove temporary paving not intended for or acceptable for integration into permanent paving. Where the area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil in the area. Remove materials contaminated with road oil, asphalt and other chemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, landscaping and sidewalks at the temporary entrances, as required by the governing authority.
3. At Substantial Completion, clean and renovate permanent facilities used during the construction period.

END OF SECTION 01 50 00

PART 1 - GENERAL

1.01 Related Documents

A. Drawings and general provisions of Contract, including General Conditions and other Division 0 and 1 Specification Sections, apply to this Section.

1.02 Summary

A. This Section specifies administrative and procedural requirements for handling requests for substitutions made after award of the Contract.

B. The Contractor's Construction Schedule and the Schedule of Submittals are included under Section "Schedules and Reports"

C. Standards: Refer to Section "Definitions and Standards" for applicability of industry standards to products specified.

1.03 Definitions

A. Definitions used in this Article are not intended to change or modify the meaning of other terms used in the Contract Documents.

B. Substitutions: Requests for changes in products, materials, equipment, and methods of construction required by Contract Documents proposed by the Contractor after award of the Contract are considered requests for "substitutions." The following are not considered substitutions:

1. Revisions to Contract Documents requested by the Owner or Engineer.
2. Specified options of products and construction methods included in Contract Documents.
3. The Contractor's determination of and compliance with governing regulations and orders issued by governing authorities.

1.04 Submittals

A. Substitution Request Submittal During Bidding: Due to the Pre-Qualification Procedures already completed and short-duration Bid Period, Substitution Requests will not be considered during the Bid.

B. Substitution Request Submittal after Award of Contract: Requests for substitution may be considered or rejected at the discretion of the Owner.

1. Refer to the Specification Section under which the product or material is required and comply first with all Substitution Request Requirements as may

be described therein. Submit 3 copies of each request for substitution for consideration. Submit requests with procedures required for Change Order proposals.

2. Identify the product, or the fabrication or installation method to be replaced in each request. Include related Specification Section and Drawing numbers. Provide complete documentation showing compliance with the requirements for substitutions, and the following information, as appropriate:
   a. Product Data, including Drawings and descriptions of products, fabrication and installation procedures.
   b. Samples, where applicable or requested.
   c. A detailed comparison of significant qualities of the proposed substitution with those of the Work specified. Significant qualities may include elements such as size, weight, durability, performance and visual effect.
3. Engineer's Action: Within one week of receipt of the request for substitution, the Engineer will request any additional information or documentation necessary for evaluation of the request. Within 2 weeks of receipt of the request, or one week of receipt of the additional information or documentation, whichever is later, the Engineer will notify the Contractor of acceptance or rejection of the proposed substitution. If a decision on use of a proposed substitute cannot be made or obtained within the time allocated, use the product specified by name. Acceptance will be in the form of a Change Order.

PART 2 - PRODUCTS

2.01 Substitutions

A. Conditions: The Contractor's substitution request will be received and considered by the Engineer when the substitution is in the best interests of the Owner, as determined by the Owner, and when one or more of the following conditions are satisfied, as determined by the Engineer; otherwise requests will be returned without action except to record noncompliance with these requirements.

1. Proposed changes must be in keeping with the general intent of Contract Documents.
2. The request must be timely, fully documented and properly submitted.
3. Extensive revisions to Contract Documents must not be required.
4. The request is directly related to an "or equal" or similar clause or similar language in the Contract Documents.
5. The specified product or method of construction cannot be provided within the Contract Time. The request will not be considered if the product or method cannot be provided as a result of failure to pursue the Work promptly or coordinate activities properly. Written documentation of such unavailability and the cause shall be provided on the original manufacturers, fabricators or

supplier's letterhead with a signature and contact telephone number for the company. Documentation only by the Contractor, sub-contractor, local sales representative or distributor is not acceptable.

6. The specified product or method of construction cannot receive necessary approval by a governing authority; meet governing codes, ordinances, laws, utility standards or insurance requirements and the requested substitution can be approved.
7. A substantial advantage is offered the Owner, in terms of cost, time, or other considerations of merit, after deducting offsetting responsibilities the Owner may be required to bear. Additional responsibilities for the Owner may include additional compensation to the Engineer for redesign and evaluation services, increased cost of maintenance or other construction by the Owner or separate Contractors, and similar considerations.
8. Field verification or other information disclosed after the bid indicates the specified product or method of construction cannot be provided in a manner that is compatible with other materials, and where the Contractor certifies that the substitution will overcome the incompatibility.
9. Field verification or other information disclosed after the bid indicates the specified product or method of construction cannot be coordinated with other materials, and where the Contractor certifies that the proposed substitution can be coordinated.
10. The specified product or method of construction cannot provide a warranty required by the Contract Documents and where the Contractor certifies that the proposed substitution provide the required warranty.
11. The manufacturer, fabricator or supplier of the specified product is unable or unwilling to certify or guarantee the performance of specified product/ system as specified or the specified product fails UL, ICBO, ASTM or similar standard certification testing required by the specifications.

B. The Contractor's submittal and Engineer's acceptance of Shop Drawings, Product Data or Samples that relate to construction activities not complying with the Contract Documents does not constitute an acceptable or valid request for substitution, nor does it constitute approval.

PART 3 – EXECUTION (NOT USED)

END OF SECTION 01 63 10

SUBSTITUTION REQUEST FORM

TO: D.A. Hogan & Associates, Inc.
119 First Ave. S., Suite 110
Seattle WA 98104

PROJECT NAME: **OREGON TECH TRACK AND SOCCER PROJECT**

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

SECTION **PARAGRAPH** **SPECIFIED ITEM**

_____ _____ _____

Proposed substitution:

_____

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

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

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

Fill in Blanks Below:

A. Does the substitution affect dimensions shown on Drawings?:

Yes_____ No_____ If yes, clearly indicate changes.

_____

_____

_____

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

_____

_____

_____

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

_____

_____

D. What affect does substitution have on applicable code requirements?:

_____

_____

_____

E. Difference between proposed substitution and specified item?:

_____

_____

_____

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

_____ Same _____Different (explain)_____

_____

G. List the names and addresses of 3 similar projects on which product was used, date of installation, and Engineer's name and address:

_____

_____

_____

H. What is the approximate delivery time from approval of shop drawings?

_____

I. What are differences in maintenance procedures?

_____

_____

_____

J. Are spare parts and maintenance available in U.S.A.?

_____

Where? (For equipment submittals)

_____

K. Cost impact:

_____

CERTIFICATION OF EQUAL PERFORMANCE AND ASSUMPTION OF LIABILITY FOR EQUAL PERFORMANCE

Undersigned attests function and quality equivalent or superior to specified items.

Submitted By:

_____

By: _____
Signature Title

Date: _____

Firm: _____

Address:_____

Telephone: _____

Signature must be by person having authority to legally bind his/her firm to the above term.

For Use by Architect:		Initial/Date
_____Accepted	_____Accepted as Noted	_____
_____Not Accepted	_____Received Too Late	

PART 1 - GENERAL

1.01 Related Documents

A. Drawings and general provisions of Contract, including General Conditions and other Division 0 and 1 Specification Sections, apply to this Section.

1.02 Summary

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

1. Inspection procedures.
2. Project record document submittal.
3. Operating and maintenance manual submittal.
4. Submittal of warranties.
5. Final cleaning.

B. Closeout requirements for specific construction activities are included in the appropriate Sections in Divisions 2 through 16.

1.03 Substantial Completion

A. Preliminary Procedures: Before requesting inspection for certification of Substantial Completion, complete the following. List exceptions in the request. Request shall be in writing to the Engineer.

1. In the Application for Payment that coincides with, or first follows, the date Substantial Completion is claimed, show 100 percent completion for the portion of the Work claimed as substantially complete. Include supporting documentation for completion as indicated in these Contract Documents and a statement showing an accounting of changes to the Contract Sum. If 100 percent completion cannot be shown, include a list of incomplete items, the value of incomplete construction, reasons the Work is not complete and schedule for completion of remaining Work.
2. Advise Owner of pending insurance changeover requirements.
3. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications and similar documents.
4. Obtain and submit releases enabling the Owner unrestricted use of the Work and access to services and utilities; include occupancy permits, operating certificates and similar releases.
5. Submit Project Record Documents; Operations and Maintenance (O&M) Manuals, data system tests/ certifications and similar final record information.

6. Deliver tools, spare parts, extra stock, and similar items and obtain signed receipt for each from authorized Owner's representative. Items turned over without signed receipt, if misplaced, must be replaced by the Contractor.
7. Make final changeover to permanent locks and transmit keys and final keying schedule to the Owner. Advise the Owner's personnel of changeover in security provisions.
8. Discontinue or change over and remove temporary facilities from the site, along with construction tools, mock-ups, and similar elements.
9. Complete final clean up requirements, including touch-up painting. Touch-up and otherwise repair and restore marred exposed finishes.

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

1. The Engineer will repeat inspection within a reasonable period when requested in writing and assured that the Work has been 100% substantially completed.
2. Results of the completed inspection will form the basis of requirements for final acceptance.
3. If the work is not 100% substantially complete after the second request and inspection, all subsequent inspections and related travel and administrative costs will constitute Extra Services of the Engineer. The cost of these will be deducted from the Contractor's Final Payment or retainage by the Owner.
4. If the Work does not achieve Substantial Completion within two weeks of the date originally scheduled to do so, plus any time adjustments by Change Order, the Engineer's time and efforts beyond that period shall constitute Extra Services. The cost of this will be deducted from the Contractor's Final Payment or retainage by the Owner.
5. The 5% punchlist line items in the Schedule of Values will be released on any given line item only when all punchlist items relating to that line item are satisfactorily completed.

1.04 Final Acceptance

A. Preliminary Procedures: Before requesting final inspection for certification of final acceptance and final payment, complete the following and submit to the Engineer. List the exceptions and request for inspection, in writing.

1. Submit written, signed and notarized statement that "The Contract Documents have been reviewed. The Work described therein has been inspected by [Insert NAME OF CONTRACTOR] for compliance to the Contract Documents. The Work has been completed in accordance with the Contract Documents."

2. Submit the final payment request with releases of liens from all sub-contractors and supporting documentation not previously submitted and accepted. Furnish an affidavit that payrolls, bills for materials and equipment and any other indebtedness associated with the Work has been paid or otherwise satisfied. Include certificates of insurance for products and completed operations where required. Coordinate with Division 1 section, "Application for Payment".
3. Submit an updated final statement, accounting for final additional changes to the Contract Sum.
4. Submit a certified copy of the Engineer's final inspection list of items to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance, and the list has been endorsed and dated by the Engineer.
5. Submit final meter readings for utilities, a measured record of stored fuel, and similar data as of the date of Substantial Completion, or when the Owner took possession of and responsibility for corresponding elements of the Work.
6. Submit consent of surety to final payment. Include letter from Bonding Company directed to the Owner sating that Surety approves release of Final payment; Surety waives submittal of final receipts from all subcontractors and suppliers and that terms of the Bond will extend for the general warranty period. If Surety is unable to provide the letter with the statements listed, the Contractor shall submit final receipts from each subcontractor and supplier.
7. Submit a final liquidated damages settlement statement.
8. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
9. Submit Certificate of Occupancy if temporary certificate or other exemption acceptable to the Owner delayed such submission at Substantial Completion.
10. Submit Certificate of Inspections for Mechanical and Electrical work.
11. Submit Affidavit of Wages Paid for Contractor and all sub-contractors.
12. Submit Employment Security Release.

B. Re-inspection Procedure: The Engineer will re-inspect the Work within a reasonable period after 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 in writing 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.
3. If the work is not 100% complete after the second request and inspection, all subsequent inspections and related travel and administrative costs will constitute Extra Services of the Engineer. The cost of these will be deducted from the Contractor's Final Payment or retainage by the Owner.

4. If the Work does not achieve Final Completion within 30 days of the Substantial Completion date, the Engineer's time and efforts beyond that period shall constitute Extra Services. The cost of this will be deducted from the Contractor's Final Payment or retainage by the Owner.

PART 2 – PRODUCTS – NOT USED

PART 3 - EXECUTION

3.01 Closeout Procedures

A. Operating and Maintenance Instructions: Arrange for each installer of equipment that requires regular maintenance to meet with the Owner's personnel to provide instruction in proper operation and maintenance. If installers are not experienced in procedures, provide instruction by manufacturer's representatives. Include a detailed review of the following items:

1. Maintenance manuals.
2. Record documents.
3. Spare parts and materials.
4. Tools.
5. Identification systems.
6. Control sequences.
7. Hazards.
8. Cleaning.
9. Warranties and bonds.
10. Maintenance agreements and similar continuing commitments.

B. As part of instruction for operating equipment, demonstrate the following procedures:

1. Start-up.
2. Shutdown.
3. Emergency operations.
4. Noise and vibration adjustments.
5. Safety procedures.
6. Economy and efficiency adjustments.
7. Effective energy utilization.
8. Routine cleaning, maintenance and repair techniques for faults correctable by Owner's personnel without voiding the warranty.

END OF SECTION 01 70 00

PART 1 - GENERAL

1.01 SUMMARY OF WORK

A. The work consists of supply, shipping, installation, technical support, and warranty service of various athletic equipment components as further specified and approved.

B. Where specifically stated, it is the responsibility of the Contractor to certify that the products or assemblies supplied meet or exceed the reference standards when installed per the manufacturers printed instructions.

C. The Contractor is responsible for transport of all equipment to the Contract site in a new condition. Products received in a condition that is in any way deficient shall be replaced.

D. The Contractor shall provide technical support to the Owner where necessary and as requested.

E. The Contractor shall accept and install products furnished by the Owner (F.O.I.C.).

F. Equipment includes the following, as further described elsewhere;

1. Throwing Events
   a. (1) Hammer/Discus Cage Assembly, complete including ground sleeves, support poles, doors, door wheels, rigging and cables, primary and secondary netting
   b. (1) Discus Cage Assembly, Portable, including ground sleeves and covers, support poles, rigging and cables, primary and secondary netting
   c. (1) Discus Throw Ring Form Assembly, for embedment, with segmental aluminum Hammer Ring insert, F.O.I.C.
   d. (1) Discus Throwing Ring Form Assembly, for embedment
   e. (3) Shot Put Throwing Ring Form Assembly, for embedment
   g. (3) Shot Put Toe Board
2. Jumping Events
   a. (2) Pole Vault Box, F.O.I.C.
   b. (2) Pole Vault Box Full-Insert Cover
   c. (4) Take Off Board Tray, F.O.I.C.
   d. (4) Take Off Board, F.O.I.C.
   e. (4) Take Off Tray Plug
3. Track Events
   a. (1) Track Inside Lane & Water Jump Curb
   b. (1) Steeplechase Water Jump Form & Covers
   c. (1) Steeplechase Water Jump Hurdle (Adjustable)

d. (4) Steeplechase Hurdle

4. Soccer Equipment
   a. (4) (F.O.I.C.) Portable Soccer Goal including nets, net clips, and mobility wheel kits.
   b. (6) In-Ground Soccer Goal Anchors
   c. (4) Weighted Corner Flags
   d. (2) Portable Ball Control Netting assembly

1.02 REFERENCE STANDARDS

A. International Association of Athletic Federations (IAAF)

B. NCAA Track & Field Rules (Latest edition)

C. NCAA Soccer Rules (Latest edition)

1.03 QUALITY ASSURANCE

A. Equipment supplied must be as previously approved. Inclusion of product data in the formal proposal shall constitute a Product Submittal. Execution of a qualified Purchase Order shall qualify as approval of the submittal.

B. Dimensional Accuracy

1. It is the Vendors responsibility to insure that the dimensions of any product supplied meet those required by the Reference Standard claimed and the Contract layout plan.
2. Unit Conversion: Where not otherwise stated, 1 meter shall be converted as 3.280839'.

C. Products must be received in a like new condition. Any materials that are scratched, dented, misshapen, missing parts or otherwise deficient upon unpacking shall be replaced by the vendor within 72 hours of notice by the Contractor.

D. Approved Product Manufacturer Reference; factory direct or authorized dealers only, listed in no particular order.

E. Track & Field Equipment Approved Manufacturer List

1. Aluminum Athletic Equipment (AAE) 1-800-523-5471
2. UCS, Inc. (UCS) 1-800-526-4856
3. Sportsfield Specialties Inc. (SSI) 408-728-0482

F. Soccer Equipment Approved Manufacturer List

1. Sportsfield Specialties Inc. (SSI) 408-728-0482
2. Aluminum Athletic Equipment (AAE) 1-800-523-5471

G. Approved Product Manufacturer Model Numbers are referenced from the latest edition catalog available at the time of specification, as follows or as specifically identified elsewhere. Individual Vendors shall cross-reference models numbers to the more current catalog, should one be available. The Owner makes no claim that the products specified herein are equal in quality.

PART 2 - PRODUCTS

2.01 HAMMER/DISCUS CAGE

A. Constructed of aluminum offset poles set in ground sleeves support nylon safety netting to a minimum height 6.15m/20.25’ from lowest adjacent grade. Provide secondary safety netting to 7’ height around the outside of the installation. Configured to support Hammer and Discus throws.

B. Comply with NCAA Rule 1, Section 9, Article 1 (2011-2012).

C. Additional height up to 8m/26.25’ with IAAF certification may be provided as a separate line item for consideration.

D. Approved Manufacturer model numbers;

1. AAE model numbers CHDC-DUAL (NCAA - dual pad) with BN-CHDC-DUAL (backup net).
2. UCS model numbers 5703100-R (NCAA with ground sleeves). Additional Barrier Net must be provided.
3. Sportsfield Specialties model number TFDDHCCOLL with TFDHC-BUNET-COLL (backup net).

2.02 PORTABLE DISCUS CAGE

A. Constructed of aluminum offset poles set in ground sleeves support nylon safety netting to a minimum height 4m/13.25’ from lowest adjacent grade. Provide secondary safety netting to 6’ height around the outside of the installation.

B. Comply with NCAA Rule 1, Section 9, Article 1.

C. Approved Manufacturer model numbers;

1. AAE model CDC-P with BN-CDC barrier net.
2. Sportsfield Specialties Inc. (SSI) model no. TFDC-COLL with TFDC-BUNET-COLL (backup net).
3. UCS model 570-0600R NCAA Discus Cage w/ Ground Sleeves

D. Provide 2" closed-cell poly-foam padding clad in 18oz/sy vinyl on two field-side support poles, ground to 8' above grade. Color as selected by the Owner from the manufacturer's standard color range of blues, black, green, or yellow. Closure to be 1-1/2" wide Velcro / hook & loop type fastener.

2.03 DISCUS THROW RING FORM

A. Sectional or single unit aluminum form including 2.50m/8.25' diameter throw ring recess fabricated for embedment in concrete.

B. Meets or exceeds NCAA Rule 1, Section 7, Articles 1, 3, and 4, and Figure 14.

C. For use in the Stadium, provide one Approved Manufacturer's model number;

1. AAE model DFS
2. Gill model 3751
3. UCS model 725-2591

D. F.O.I.C. Throw Ring Form for use at "Throws Venue" installation will be UCS model 725-2591.

2.04 HAMMER/WEIGHT THROW RING INSERT

A. F.O.I.C. item UCS model 725-2535

2.06 SHOT PUT TOE BOARD

A. Cast aluminum, bolt-down Toe Board manufactured for recessed throw ring condition.

B. All Anchoring Hardware to be Stainless Steel.

C. Meets or exceeds NCAA Rule 1, Section 8, Article 2

D. Approved Manufacturer model numbers;

1. AAE model ATBC
2. Sportsfield Specialties Inc. (SSI) model TFSPT-001-AL.
3. UCS model 716-1630

2.07 POLE VAULT BOX & COVER

A. F.O.I.C. UCS model 711-1200 Stainless Steel Vault Box and 711-1400 Vault Box Cover.

2.08 TAKE OFF BOARD TRAY & TAKE OFF BOARD

A. F.O.I.C. UCS model 519-2100 (package includes tray, take off board, and foul line).

2.09 TRACK CURB

A. Interlocking, nominally 2" aluminum square tube with all aluminum construction, mill finish, with pre-fabricated installation pins. Curb body to site 3/8" – 5/8" above track surface.

B. Fabricated to fit on inside lane line, measured and certified in coordination and compliance with Section 32 1823 Track Rubberized Surfacing, 1.06.B Track Certification.

C. Approved Manufacturer model numbers;

1. AAE model no. 3AC
2. Gill model no. 851A
3. UCS model no. 792-9412.

2.10 STEEPLECHASE EQUIPMENT

A. Approved Steeplechase equipment supplier will be responsible for providing all necessary equipment to support the construction of the Steeplechase and water jump facilities including water jump pit/pit form, covers, and hurdles. One manufacturer shall provide all necessary components.

B. Provide Steeplechase Hurdles as a package including 3 at 4m and 1 at 5m width.

C. Provide Water Jump Pit Covers recessed for installation of synthetic track surfacing to match that provided at the track & field events surfaces.

D. Provide mobility kit, wheels, or carts for portable Steeplechase Hurdles.

E. All Equipment meets or exceeds NCAA Rule 1, Section 3, Article 5 and all Articles of Rule 2, Section 3.

F. Preferred Manufacturer model numbers;

1. AAE
    a. Water Jump Form model WJFS
    b. Water Jump Cover System model WJC
    c. Water Jump Hurdle & Seal model WJH-FS
    d. Steeple Chase Hurdles, package, model PSH-4A
2. SSI
    a. Steeple Chase Water Jump Pit Form and Covers, model WJ 5000
    b. Adjustable Water Jump & Seal model WJ 5020
    c. Steeple Chase Hurdles, model WJSCH4STM
3. UCS
    a. Water Jump Form model 506-6000
    b. Water Jump Cover System model 506-5420
    c. Water Jump Hurdle & Seal model 506-5413 (Seal model 506-5419)
    d. Steeple Chase Hurdles, package, model 506-5419

2.11 SOCCER EQUIPMENT

A. Portable Soccer Goals (F.O.I.C.) Alumagoal “Manchester Match Goal”

B. Portable Soccer Goal Anchor

1. Units shall be pre-manufactured unit consisting of an access box, cover and tethering assembly suitable for securing the backstay of a soccer goal unit. Provide two per goal.
2. Access box to be fabricated of .125” aluminum and 16 ga. stainless steel.
3. Cover to be fabricated of .25” aluminum and ¾” marine plywood.
4. Tethering cable to be 3/16” vinyl-clad stainless steel aircraft cable.
5. All connections to be welded or secured with stainless steel hardware.
6. Manufacturer Reference: Soccer Goal Anchor shall be Aluminum Athletic Equipment or approved equal.
7. Synthetic Turf Cover to identically match synthetic turf system used for field surfaces.
8. Padlock to be provided by the Owner (F.O.I.O.).

PART 3 - EXECUTION

3.01 SHIPPING

A. All products must be received in their original manufacturers shipping packaging, in new condition. Products found to be scratched, dented, marred, discolored, or otherwise defective shall be re-shipped within 72 hours of notice.

B. Return shipping of defective items will be paid for by the Contractor.

3.02 LAYOUT & FIELD ENGINEERING

A. Layout for all embedded equipment is to be performed by a Licensed Professional Land Surveyor in coordination and cooperation with the Contract Documents, Approved Manufacturers Printed Installation Instructions, and the NCAA Track and Field Rules (most recent edition).

B. Conform to NCAA Requirements for horizontal and vertical tolerance.

3.03 INSTALLATION & ASSEMBLY

A. All products shall be assembled and installed in accordance with the Contract Documents, Approved Manufacturers Printed Installation Instructions, IAAF Requirements, and the applicable NCAA Rule Book (most recent edition, Track & Field, Soccer).

3.04 WARRANTY

A. All products shall be covered by a minimum 1 year warranty covering replacement and shipping.

END OF SECTION

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. Furnish all labor, material and equipment for the earthwork indicated. Work includes but is not limited to the following:

1. Layout and Engineering;
2. Stripping and removal of selected sod or grass and other organic material from project areas, load, haul, and place at a predetermined Owner site on campus described elsewhere;
3. Stripping and disposal of surface organics and brush for disposal off-site;
4. Excavation and stockpiling of selected soil materials for re-use as described;
5. Onsite excavation and fills;
6. Trenching and controlled backfills for all utilities including water systems, storm and sanitary drainage, electrical, geothermal, and others as may apply;
7. Removal of all excess and unsuitable soil materials and legally dispose of offsite;
8. Surface water and erosion control;
9. Management of the construction sequencing and scheduling relative to soil moisture content and the use of onsite material as fill;
10. Compaction and establishment of subgrade;
11. Preparation of Treated Subgrade as directed;
12. Alert the Owner's Representative / Engineer immediately upon encountering unforeseen conditions.

B. Classification of Excavated Materials: Excavated materials are generally not classified. Excavation and trenching includes the removal and subsequent handling of all materials excavated or otherwise removed in performance of the work, regardless of the type character, composition or condition thereof.

It is anticipated that all soil materials including grass sod and roots will be disposed of on the campus disposal/compost site, all grass field topsoil will be utilized as planting soil at the Track & Field Throws Venue, and all other excavated soils, mineral aggregates, and spoils will be utilized as fill either at the stadium site or the throws venue.

All concrete, asphalt, and rubberized surfacing must be removed from the site and disposed of legally.

C. Native On-Site Materials in excess of that required to establish line and grade as shown and described elsewhere and specified herein, if any, and materials found to be unsuitable for that purpose shall be legally disposed of offsite. Fill sites on

campus are provided for selected materials.

D. Related Work in Other Sections:

1. 31 10 00 Site Preparation
2. 31 22 16 Subgrade Establishment
3. 32 13 00 Sitework Concrete
4. 32 31 13 Chainlink Fences and Gates
5. 32 84 23 Washwater and Irrigation
6. 33 40 00 Storm Drainage
7. 33 46 16 Subsurface Drainage

1.02 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. American Society for Testing and Materials
2. APWA - Standard Specifications for Road, Bridge and Municipal Construction, current edition.
3. AASHTO T176 - Plastic Fines in Graded Aggregates and Soils by use of the Sand Equivalent Test.
4. ASTM D1556-90 - Test Method for Density of Soil in Place by the Sand-Cone Method.
5. ASTM C136 - Standard Method for Sieve Analysis of Fine and Coarse Aggregate.
6. ASTM D1557-91 - Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lb/cu ft).
7. ASTM D6938-08a - Standard Test methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).

1.03 EXISTING SITE CONDITIONS

A. Refer to drawings for topographical survey and existing condition information.

B. Refer to the Geotechnical Reports appended to these specifications for existing soil conditions.

C. Owner not responsible for changes in the topography after survey record drawing verification was made or for accuracy of survey information.

D. 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.

E. The Contractor shall contact the appropriate utility agencies for identification of underground utility location. The contractor shall contact "Call Before You Dig" service at 1-800-424-5555.

1.04 SUBMITTALS

A. The Contractor shall submit a written earthwork plan to the Engineer for approval prior to commencing with any mass excavation or filling. The plan must be coordinated with the Contractor's construction schedule and shall reflect and address the historical weather conditions during the proposed scheduling of the earthwork and grading phases. The plan shall also include:

1. Sequencing of the earthwork and grading activities;
2. Proposed equipment to be utilized;
3. Surface water diversion and control;
4. Proposed protection methods for exposed soils, excavated stockpiled fill materials and trenches;
5. Soil drying procedures;
6. Phasing of the earthwork activities;
7. Any other information pertinent to the manner in which the earthwork and grading will be performed.

B. The Contractor shall submit a sieve analysis of each type of imported aggregate material from an independent testing agency. Review and acceptance of a sieve analysis does not constitute approval of the actual product installed, which may be subject to additional testing at any time.

1.05 EXISTING UTILITIES

A. It is the responsibility of the Contractor to familiarize themselves with all records of existing utilities in area of site work.

B. The Contractor will expose and verify size and, location and elevation of underground utilities and structures where conflicts might exist. This work shall be done sufficiently in advance to permit changes in the event of conflict without affecting the project schedule.

C. Should uncharted piping or other utilities be encountered, consult the Utility Purveyor and Owner immediately for instructions. Repair all damaged utilities to the satisfaction of the Engineer. The Contractor is responsible for all costs for damage to utilities shown on the drawings or identified by location service.

D. The Contractor shall carefully review the proposed site drawings, the topography and survey drawings, and shall confer with the Consultant concerning scheduling of removal or alteration of these lines.

E. If weekend work or overtime work is scheduled, it shall be the Contractor's responsibility to contact the Consultant prior to commencing such work. If the Consultant deems it necessary, Contractor, at his/her own expense, shall employ plumbing and electrical personnel on a standby basis to secure and repair any utility lines which might be broken during the scheduled override period.

1.06 DUST CONTROL

A. Contractor shall provide dust control such that it prevents wind transport of dust from the disturbed soil surfaces onto roadways, drainage ways, and surface waters and protects persons and property from damage and discomfort caused by dust. Employ Dust control BMPs per DEQ. Water may be used as necessary to quell dust but to not cause runoff, puddling, soil erosion or pollution of surface waters.

1.07 ROADWAY PROTECTION

A. Provide construction entrances and wheel-cleaning stations to clean wheels and undercarriage of trucks before leaving site, as necessary to prevent dirt from being carried onto public or campus roadways. If streets are fouled, they must be cleaned immediately in conformance with Local Code requirements, as applicable. This requirement applies to all vehicle movements for the entire period of construction.

1.08 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 Local Code for traffic control requirements.

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.

E. The school campuses are congested with student, faculty and staff throughout most of the year. Contractor shall perform excavation and hauling so as to provide the least impact to public safety and daily operations. Haul scheduling shall be coordinated to avoid the beginning and end of the school day while school is in session. All haul routes and scheduling shall be submitted to the Owner's Representative for review and approval prior to commencement of hauling operations.

F. Trucks shall be equipped with proper sidewalls and/or covers to assure total containment of debris in transit to the dump site. Haul routes are subject to review and acceptance by the Permitting Authority.

G. The Contractor shall, when hauling over existing roadways, be responsible for maintenance during use of roadway and for restoration to original condition upon completion. Also, if city streets and/or state highways are used, require Contractor to make all necessary arrangements with city and/or state. Dust and mud control shall be in compliance with City, County, State and Federal requirements.

1.09 QUALITY CONTROL

A. Testing

1. The Contractor is responsible for verifying compliance with the specifications, and shall perform their own quality control measures throughout the progress of the work. The Contractor agrees to proceed with the work at their own risk in the absence of timely independent testing and inspection reports.
2. The Owner's Representative's Testing Agency will perform compaction and density tests to verify compliance with these specifications.
3. The Owner's Representative may require that an independent testing laboratory test imported materials at any time. Where any material is found to be non-compliant with the Contract, the Contractor shall bear the cost of testing, removal of all non-compliant materials from the Project Site, and replacement of the materials with materials meeting the requirements of the Contract. If the materials tested are found to be compliant with the requirements of the Contract, the Owner will reimburse the Contractor for costs incurred by testing plus mark-ups as allowed for elsewhere in the Contract.
4. The Owner's Representative's Testing Agency presence does not include supervision or direction of the actual work by the Contractor, his employees or agents. Neither the presence of the Owner's Representative's Testing Agency, nor any observations and testing performed by him shall excuse the Contractor

from defects discovered in his work.

B. It is the responsibility of the Contractor to verify the accuracy of all survey information provided by the Owner prior to commencing excavations or filling operations. Commencement of these operations constitutes acceptance of the survey information as appropriate to meet the intent of the Contract.

1.10 MEASUREMENT & PAYMENT

A. All work except Unit Priced Treated Subgrade is payable on a percentage complete basis, pro-rated against an approved schedule of values.

B. Measurement

1. The quantities of treated subgrade will be measured on the area basis, measured along the lines and grades of the area actually treated.

2. The quantities of soil stabilizing materials will be measured on the dry weight basis. Packaged materials will be accepted at the net weight shown by the manufacturer, subject to periodic verification and approval. Provide a certificate with each shipment together with a certified copy of the weight of each delivery. Measurement of stabilizing material will not include any which is lost, displaced, used in reworking, used in restoration work or used contrary to direction.

C. Payment

1. The accepted quantities of treated subgrade and soil stabilizing materials will be paid for at the Contract unit price, per unit of measurement, for the following items as authorized and directed:

Pay Item	Unit of Measurement
(a)Treated subgrade, 18 inches Thick	per 10,000 SF
(b) Lime	per Ton
(c) Portland Cement	per Ton
(d) Calcium Chloride	per Ton
(e) Sodium Chloride	per Ton

2. Payment will be payment in full for furnishing and placing all materials, and for furnishing all equipment, labor, and incidentals necessary to complete the work as specified.

3. No separate or additional payment will be made for:

a. Draining water from the subgrade
b. Soil stabilization work
c. Smoothing the subgrade in preparation for staking
d. Blading, shaping and compacting the subgrade to final line, grade and cross section
e. Unauthorized work

PART 2 - MATERIALS

2.01 FILL MATERIAL

A. STRUCTURAL FILL: Shall consist of granular or non granular soil and/or aggregate which is free of deleterious material and is non plastic. Deleterious material includes wood, organic waste, coal, charcoal, or any other extraneous or objectionable materials. The material shall be considered non plastic if the percent by weight passing the US No. 200 sieve does not exceed 5 percent, or if the soil fraction passing the US No. 40 sieve cannot be rolled, at any moisture content, into a thread a prescribed in AASHTO Std. Test Designation T90. If requested by the Contractor, the plasticity may be increased with the approval of the Engineer if it is determined than an increased plasticity will be satisfactory for the specified embankment construction. The material shall not contain more than 3 percent organic material by weight.

B. COMMON FILL: For use in the development of landscape subgrade or as approved in larger, bulk import operations, common native soils generally devoid of rocks larger than 8” in any diameter with a soil fraction passing the #200 screen not exceeding 15%. The Contractor shall have any such materials tested for optimum moisture and maintain responsibility for managing moisture content throughout the work.

C. CRUSHED SURFACING BASE COURSE (CSBC) / GRANULAR STRUCTURAL FILL: Shall be manufactured from ledge rock, talus, or gravel. The materials shall be uniform in quality and substantially free from wood, roots, bark, and other extraneous material and shall meet the following gradation:

Sieve Size	Percent Passing
1-1/4” square	100
5/8” square	50-80
¼” square	30-50
U.S. No. 40	3-18
U.S. No 200	7.5 max.

% Fracture	75 min.
Sand Equivalent	32 min

All percentages are by weight. The fracture requirement shall be at least one fractured face for each particle and will apply to material retained on each specification sieve size U.S. No. 10 and above if that sieve retains more than 5 percent of the total sample. The portion of crushed surfacing retained on a ¼ inch sieve shall not contain more than 0.15 percent wood waste.

D. CRUSHED SURFACING TOP COURSE (CSTC): Shall be manufactured from ledge rock, talus, or gravel. The materials shall be uniform in quality and substantially free from wood, roots, bark, and other extraneous material and shall meet the following gradation:

Sieve Size	Percent Passing
1 ¼" square	100
¾" square	100
5/8" square	50-80
¼" square	55-75
#40	8-24
#200	10.0 max.
% Fracture	75 min.
Sand Equivalent	32 min.

All percentages are by weight. The fracture requirement shall be at least one fractured face and will apply to material retained on each specification sieve size U.S. No. 10 and above if that sieve retains more than 5 percent of the total sample. The portion of crushed surfacing retained on a ¼ inch sieve shall not contain more than 0.15 percent wood waste.

2.02 SAFETY, MONITORING, AND RESPONSE EQUIPMENT

A. The Contractor shall provide barricades, safety guards, temporary fencing, signage and/or other methods to secure trenches, open excavations, and other unsafe conditions resulting from this construction. Undertake work in full compliance with all applicable regulatory requirements.

2.03 PIPE BEDDING

A. Pipe bedding for storm drainage pipe shall be CSTC bedding and backfill to the pipe springline at a minimum for double-walled corrugated polyethylene pipe. Bed and backfill to ½ the pipe diameter above the crown for smooth-exterior walled pvc pipe.

B. Bedding for perforated pipes other than those specified as "Field Subsurface Drainage (refer to Section 33 46 16)", such as PVC wall drains or Infiltration Facilities as required by Permit, shall be Type 4 aggregate, 1-1/2" washed drain rock. Perforated pipe bedding shall consist of well-graded mineral aggregate meeting the particle gradation as follows:

Sieve Size	Percent Passing
1 1/2" square	100
1 ¼" square	90-100
¾" square	0-20
3/8" square	0-2

2.04 SOIL AMENDMENT

Material	Standard	Grade or Type
Hydrated Lime	AASHTO M 216, Type 1	Grade A
Granular Quicklime (CAO) *for grading and hydroxide content, with min. 85% Calcium Hydroxide*	AASHTO T 27 and T 219	100% passing 3/8" sieve; max. 15% passing No. 100 sieve
Calcium Chloride	AASHTO T143 AASHTO M 144	–
Sodium Chloride	AASHTO M 143	–
Portland Cement	AASHTO M 85	_

PART 3 - EXECUTION

3.01 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.

B. Horizontal and Vertical Layout and Staking of the following elements must be performed by a licensed professional land surveyor;

1. Track Radius Points
2. Slot Drain and Slot Drain Encasement / Track Interior Perimeter Containment Curb
3. Track Exterior Perimeter Containment Curb inside face and edge of rubberized track surfacing keyway
4. Discus and Hammer Throw Ring Form and Landing Area

3.02 SEQUENCING AND SCHEDULING

A. Submit proposed sequencing schedule for Engineer's review and verification. Refer to Submittals section.

B. All new cut and fill areas shall be roller-sealed or compacted at the end of each day to minimize moisture penetration.

C. Frozen Conditions:

1. Do not backfill or construct fills or embankments during freezing weather.
2. Do not place backfill or construct fills or embankments on frozen surfaces.
3. Do not place frozen materials, snow or ice in backfill or embankment.

D. Mandated Critical Path Work Sequence

1. Stadium Site Sod/Organic Strippings shall be segregated from all other bulk materials and transported to the designated on campus disposal site. Dump material in tight, overlapping piles as directed.
2. Stadium Infield Root Zone Sand / Topsoil shall be excavated and stockpiled by the Contractor in a location and manner that will not inhibit continuous execution of the Contract work. Upon the Engineers approval of the Throws Venue Landing Area subgrade (and all Awarded Alternate work), the Contractor shall utilize this material as topsoil for hydroseeding.
3. Bulk materials excavated form the Stadium Site including native soil and otherwise unclassified fills, pavement bases, and other mineral materials shall be incorporated as fill at the Throws Venue to establish the designed subgrade. The Contractor shall submit source, sample, and sieve analysis for any make-up volume of soil that may be required to achieve line and grade.

3.03 SHEETING AND SHORING

A. All excavation and trenching operations are to be conducted in accordance with WAC 296-155 Part N. The Contractor shall protect all persons entering and working in excavations and trenches through the use of sloping, shoring and shield systems.

B. Where the stability of adjoining buildings, wall or other structures is endangered by excavation operations, support systems such as shoring, bracing, or underpriming shall be provided to ensure the stability of such structures in accordance with WAC 296-155, Part N.

C. The general public is to be protected from open excavations and trenches by means of barricades and fences clearly marked or identified by flagging or warning signs.

3.04 UNDERGROUND OBSTRUCTIONS

A. All known underground structures have been shown on the drawings. However the possibility exists that these may prove inaccurate and that obstructions not known to the survey, etc., may be encountered.

B. The Contractor shall call the Project Officer or designated Facilities Development representative, and Local Utilities' locating services 48 hours prior to commencing excavation activities.

C. The Contractor shall immediately notify the Engineer and Owner's Representative in the event any underground obstruction or uncharted utility is encountered.

D. The Contractor will expose and verify size and, location and elevation of underground utilities and structures where conflicts might exist. This work shall be done sufficiently in advance to permit changes in the event of conflict without affecting the project schedule.

E. The Contractor is responsible for all costs for damage to utilities shown on the drawings or identified by location service.

F. Unforeseen encounters with Underground Storage Tanks (UST) of any kind requires immediate notification of the Owner’s Representative or Engineer and an immediate cessation of disturbance in the immediate vicinity until an evaluation has been undertaken and further direction provided.

3.05 EXCAVATED MATERIALS

A. All items of concrete, debris, piping, etc., are to be legally disposed of off site at Contractor's expense. The Contractor shall make efforts to have the concrete and asphalt concrete paving recycled.

3.06 EXCAVATION AND FILL

A. Place soils in loose, horizontal lifts of 12 inches. Fill soils shall be moisture conditioned to efficiently achieve the required compaction. Each lift should be spread evenly and be thoroughly compacted prior to placement of subsequent lifts.

B. Structural Fill, Crushed Surfacing Base Course and all other fills beneath hardscapes, paved or synthetic turf surfaces shall be compacted to at least 95 percent of maximum dry density (MDD), as determined by test method ASTM D 1557. All fills that will not be overlain by pavement shall be compacted to at least 90 percent of MDD, as determined by test method ASTM D 1557.

C. Machine slope banks as required, and compact as specified. Cut and fill slopes shall not exceed 3H:1V unless specifically designated as such.

D. Suitable bearing stratum shall be verified by the Engineer. If suitable bearing stratum is not encountered at the design elevation shown on the plans, over excavate and replace the unsuitable soil with imported structural fill to the depth determined necessary by the geotechnical engineer.

E. Correct unauthorized excavation as directed, at no cost to Owner.

F. Do not disturb soil within branch spread of existing trees or shrubs that are to remain.

G. If determined necessary by the Engineer to excavate through roots of trees to remain, perform work by hand and cut roots with a sharp ax.

H. Ensure areas to be backfilled are free from debris, snow, ice and water, and that ground surfaces are not in a frozen condition.

I. Do not fill or backfill over existing surfaces that are porous, wet or spongy, or exhibit pumping, rutting, or deflection under maximum construction loading, or have not been relieved of organic overburden.

J. Rework and compact existing sub-grade surfaces if the degree of compaction (percent of maximum dry density) of these materials is not equal to the degree of compaction required for backfill materials described above.

K. Backfill systematically and as early as possible to allow maximum time for natural settlement and compaction.

L. Maintain moisture content of backfill materials so as to attain required compaction density.

3.07 WET WEATHER CONDITIONS

A. The Contractor shall be knowledgeable in local area climatic conditions and Schedule work in all areas for dry weather periods wherever practical. If wet weather is encountered and earthwork is unavoidable, Contractor shall proceed as follows at no additional cost to the Owner.

B. Earthwork shall be accomplished in small sections to minimize exposure to wet weather. Excavation or the removal of unsuitable soil shall be followed promptly by the placement and compaction of a suitable thickness of clean structural fill. The size and type of construction equipment used may have to be limited to prevent soil disturbance.

C. Imported soils used to recover volume resulting from the over-excavation of excessively wet soils shall be Structural Fill as classified herein, or alternative soils approved by the Geotechnical Engineer of record.

D. Protect stockpiled soils by covering with plastic sheeting. The plastic sheeting should be anchored with sandbags or staked in place to protect the materials.

E. The ground surface within the construction area should be sloped and sealed with a smooth drum vibratory roller to promote rapid runoff of precipitation, to prevent surface water from flowing into excavations and to prevent ponding of water.

F. The near-surface soils contain a significant amount of fine-grained particles, and are considered highly moisture sensitive. The use of these soils as structural fill should be limited to extended periods of dry weather. Even during periods of dry weather, some disking for drying and watering may by necessary to achieve the required compaction. The near-surface soils are to be used for fill only if construction takes place during the drier summer months.

G. No soil should be left un-compacted so it can absorb water. All soils which become too wet for compaction should be removed and replaced with imported structural fill at no additional cost to the owner.

H. Accomplish excavation, placement and compaction of structural fill material in cooperation with the Owner's Testing Laboratory and technical representative to determine that all work is being accomplished in accordance with the Project Specifications.

3.08 COMPACTION

A. Compact all fill and backfill to prevent subsequent settlement.

B. Water settling or jetting will not be permitted as a means of compaction.

C. Furnish heavy rollers or compactors except as follows:

1. Use pneumatic hand tampers for trenches and areas not accessible to heavy equipment.
2. Compact areas within 5’ of footings, foundations, walls, and slopes exceeding 3:1 gradient with hand vibrators.

D. Required compaction: Compact fills and backfills to the following minimum relative compaction (percentage of maximum dry density determined in accordance with ASTM D1557).

Locations	Required Minimum Relative Compaction
Utility Trenches: (under non roadway/non-structural conditions)	90%
Utility Trenches: (under all structural conditions including roadways, walks, pavements, playfields, walls, and foundations)	95%
Subgrade, all Fields & Track areas	95%
Under Slabs on Grade	95%
Under Walks and Paving	95%
Against Walls (face of wall)	92%
Bedding adjacent to Utility Lines	95%
Subgrade in Planting and Landscape areas	85%
Planting soils	85%
Structural fills	95%
Fills on slopes steeper than 3:1	90%
Other	95%

3.09 SUBGRADE

A. Treated Subgrade (by Unit Price)

1. All work to be performed as authorized and directed.
2. Prior to commencing subgrade treatment, the Project Engineer will direct the appropriate amendment material and application rate to be incorporated into the work.
3. Preparation - Before starting subgrade work, including backfill, complete all underground work contemplated in the area of the subgrade. This requirement includes work by the Contractor, by the owner or by others. Drain all depressions or ruts which contain water.

4. Addition of Stabilizing Material - Apply stabilizing materials at a uniform rate as specified using equipment and methods that will ensure uniformity of distribution. The use of blade graders to distribute lime will not be allowed. Allow only equipment that is used for watering, applying and mixing the stabilizing material to pass over the material until after it is mixed into the soil. Add water, if necessary, during mixing operations to provide 3% above optimum moisture content.
5. Mixing - Perform mixing operations until the treated subgrade material is uniform and free of streaks or pockets and all material, other than stones, will pass a 1 inch sieve. Do not allow the content of stabilizing material to vary by more than plus or minus 1% from the amount specified.
6. Finishing - Immediately after mixing the treated subgrade, grade the mixture to specified line, grade and cross section and compact the mixture to the specified density. Compact and finish within 12 hours after compaction begins. If the Contractor has not compacted and finished the material within 12 hours, loosen the mixture and add stabilizing material and water as directed. Remix the freshened material, regrade and recompact, at no additional cost to the Owner. During compaction, maintain the mixture at proper grade and cross section and at optimum moisture content.
7. Curing - Limit traffic over treated subgrade to equipment which do not cause any damage to the subgrade and which do not visibly deflect, ravel or wear the surface. Keep the finished surface moist and protect from rutting, spalling, displacement and disfiguration for a period of seven days, or until a subsequent course of material is placed which will prevent drying of the mixture by evaporation or absorption.
8. Compaction:
    a. Achieve 95% of maximum density to a depth of 18 inches below established subgrade elevation.
    b. Compact the subgrade until it is firm and unyielding. Unyielding means no more than 1/4 inch deflection of the subgrade when proof-rolled with a fully loaded 10 to 12 cubic yard dump truck. Test and proof-roll within 24 hours prior to placing base material on the subgrade.
    c. Over-excavate areas of visible deflection to a depth of 12 inches or more below subgrade, as directed. Place fabric, backfill the over-excavated subbase area up to the subgrade elevation with a single lift of 1 1/2" - 0 crushed rock and compact. Apply the compactive effort until the density of the top 6 inches of the subbase rock is 95% maximum density. In addition, proof-roll these areas to verify they are firm and unyielding as specified above.
    d. Notify the Engineer if the specified compaction is not attained. The Contractor may be required to use a modified compaction procedure or apply additional compactive effort. If approved materials meeting the specifications cannot be compacted to the required density regardless of compactive effort or method, the engineer may reduce the required density or direct that

alternative material be used. Do not proceed with finishing or compaction of the subgrade until the Contractor is able to compact the material to the satisfaction of the Engineer.

9. Tolerances:
   a. Rework areas found to be deficient in thickness by more than 1/2 inch, and add fresh stabilizing material in an amount equal to one-half the original amount.
   b. Finish the surface of the treated subgrade so that it does not vary by more than 1/2 inch from the established grade and cross section at any point. When tested with a 12 foot straightedge, the maximum variation of the finished surface from the testing edge is 1/2 inch.

B. After site stripping and prior to embankment fill placement, compact subgrade to a minimum of 95% of maximum per ASTM D-1557-91 or as directed by the Owner's Representative or Engineer.

C. Soft, pumping, or rutting areas identified during subgrade preparation by the Owner's Representative must be overexcavated a minimum of 12" (one foot) to firm and unyielding material. Resulting voids to be backfilled with Structural Fill as classified herein and compacted per the location compaction schedule above.

D. If existing utilities not shown on the plans are encountered in the area of work, stop work in that area and notify the Engineer.

E. Do not perform cut and fill work in weather that will not allow reuse of site materials using wet weather methods described in Paragraph 3.07 C of this Section. Use no frozen material in fills.

F. Use normal construction methods generally, but if weather will not allow working of site soils, use wet weather methods as noted above at no additional cost to the Owner.

G. Provide temporary ditching as needed so that no areas of the site will have standing water during rainfall. Fill or pump continuously all low areas that cannot otherwise be drained.

H. All fields, pavements, and surfaced areas are to be compacted to 95% of maximum density per ASTM D-1557-91 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.

I. Care must be exercised during grading of the subgrade so as to achieve a uniform, true surface relative to finish grade.

J. Finish subgrade for all fields, tracks, field events, and paved areas, shall be established to within the tolerance of +0.00' or - 0.10' of the design subgrade elevation for these areas.

K. 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.

L. All other areas shall be compacted to a 85% maximum density. These areas shall be established to within the tolerance of +0.05' or - 0.15' of the design elevations and grades. All perimeter and swale areas shall be sloped in accordance with the grading plan. Swale grades shall include a constant slope between the designated high point and any catch basin rim elevations. Areas of ponding water in the swales will not be accepted.

END OF SECTION 31 00 00

PART 1 - GENERAL

1.01 SUMMARY

A. Work specified in this section includes, but is not necessarily limited to, the following:

1. Establishment and Maintenance of TESC/SWPPP facilities as required by Permit
2. Demolition and removal of items as shown on the plans and as required for the construction activities.
3. Demolition of existing concrete, asphalt paving including rubberized surfacing, curbs, and other hard surfaces.
4. Removal of storm drainage catch basins and piping.
5. Removal of existing electrical conduit and wiring, equipment, and poles.
6. Removal of existing irrigation components; valves, sprinkler heads, piping.
7. Protecting from harm objects selected to remain.
8. Protecting from harm objects selected to remain including the existing quick coupling valve risers and communication boxes to remain.

1.02 RELATED WORK SPECIFIED IN OTHER SECTIONS

31 00 00 Earthwork
32 13 00 Sitework Concrete
32 31 13 Chainlink Fences and Gates
32 84 23 Washwater and Irrigation
33 40 00 Storm Drainage
33 46 16 Subsurface Drainage

1.03 EXISTING SITE CONDITIONS

A. Refer to drawings for topographical and existing condition information.

B. Owner not responsible for changes in the topography after survey record drawing verification was made or for accuracy of survey information.

C. 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.

D. The Contractor shall contact the appropriate utility agencies for identification of underground utility location. The contractor shall contact "Call Before You Dig" service at 1-800-424-5555.

1.04 EXISTING UTILITIES

A. The Contractor shall call for a commercial, private utilities locate prior to commencing with demolition activities.

B. The Contractor shall coordinate all existing utilities prior to proceeding with demolition activity. Protect any active pipes encountered; notify Engineer of their existence and record on "as-built" drawings.

1.05 DUST CONTROL

A. Protect persons and property from damage and discomfort caused by dust. Water as necessary to quell dust.

1.06 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 adjacent streets. If streets are fouled, they must be cleaned immediately in conformance with these requirements, as applicable. This requirement applies to all vehicle movements for the entire period of construction.

1.07 TRAFFIC REGULATION

A. Coordinate and Cooperate with the Owners schedule of Campus activities including student movement patterns and Campus maintenance and operations activities, including occasional short-term adjustments to trucking and heavy machinery movements, excessive noise, or activities generating fugitive dust.

B. 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 or queue vehicles in traffic lanes. Provide flagmen as required. Conform to campus, city, or county traffic control requirements.

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.

1.08 DIMENSIONS AND LAYOUT

A. The Contractor shall be responsible for furnishing, setting and marking all line, grade, and location stakes, including offsets and general construction staking, together with clearing limits.

B. There shall be on site at all times, when work-requiring control is being performed, all necessary equipment, supplies, and instruments related thereto. A qualified layout engineer, surveyor, or technical specialist must be assigned to the Contractor's crew for this work. This equipment and personnel must be available at no additional cost to the Owner for the purpose of verifying layout and certifying the accuracy of work on the site.

C. The Contractor is responsible for preserving all benchmarks and stakes and replacing any that are displaced or missing as a result of the Contractor's operations.

D. The Contractor is responsible for review of all Owner and Campus records relative to the existing underground utilities. The Contractor is responsible to avoid damaging these facilities and shall repair all recorded utilities at no additional cost to the Owner.

E. The Contractor shall to notify the Owner's Representative immediately of underground utilities encountered, which are not shown on the Owner's record.

PART 2 – PRODUCTS (Not Used)

PART 3 - EXECUTION

3.01 FIELD LAYOUT AND ENGINEERING

A. The General Contractor shall be responsible for the layout of all the preparation and demolition work required to construct all work in accordance with the drawings and specifications.

3.02 EXISTING CONDITIONS

A. Do not shut off or cap utilities without prior notice. Maintain storm drains and sewers open for free drainage:

1. Provide storm drain inlet protection at catch basins in accordance with plans and permit requirements.

B. Objectionable noises: Limit use of air hammers and other noisy equipment as much as possible. Conform to Owner requirements regarding noise control.

C. Maintain vehicular and pedestrian traffic routes:

1. Ensure minimum interference with roads, sidewalks, and adjacent facilities.
2. Do not close or obstruct streets, sidewalks, alleys or passageways without permission from Owner.
3. If required by Owner or city, provide alternate routes around closed or obstructed traffic ways.

3.03 CLEARING & GRUBBING

A. Completely remove all growth and underbrush as required for new construction.

B. Grub or otherwise prepare areas where clearing has occurred to receive construction or other improvements.

3.04 DEMOLITION

A. Completely remove and dispose of on grade slabs, pavement, structures, fences, and other obstructions as applicable. See notes on drawings for items to be removed. Pavements and curbing designated for removal shall be broken up, loaded, and disposed of by the Contractor. Care shall be taken, in removing pavement, structure, and all items to be removed that damage does not occur to the existing improvements to remain in place and that all removals are accomplished by making a neat vertical saw cut at the boundaries of the area to be removed. Anticipate damage to edges caused by ongoing construction activity by performing preliminary cuts during the work and final cut prior to meeting and matching per plan. Adjacent materials designated to remain that are damaged by the Contractor's operations shall be removed and new materials shall be furnished and installed to match existing, at no additional cost to the Owner.

B. Utilities: Cap ends of all piping to be abandoned in place. Remove all piping designated for removal, including underground piping and exposed piping. All existing field subdrainage systems not designated for reuse are to be removed and the remaining voids to be backfilled with non-organic native soils or structural fill as appropriate.

C. Piping: Some utility piping and structures are to remain until new services are in operation and shall be protected during construction. Damage to existing utilities that are to remain shall be repaired at no additional cost to the Owner. In the event the Contractor encounters utility lines not shown on the site plan or

otherwise indicated to be saved, removed, or abandoned, the location of such lines shall be marked in the field and the Project Engineer shall be notified in writing.

D. Carefully dismantle and remove items, if any, to be salvaged. The salvaged items shall then be labeled, bundled, and delivered to a storage site specified by the Owner's Representative.

3.05 DISPOSAL OF MATERIALS

A. The Contractor in a manner consistent with all government regulations shall dispose the refuse resulting from clearing and grubbing.

1. No burning permitted.
2. Do not leave refuse material on the project site or buried in embankments or trenches on the project site.
3. Do not deposit debris in stream, body of water, street or alley, or upon private property except by written consent of the private property Owner.
4. Maintain hauling routes clean and free of debris resulting from work of this section.

END OF SECTION 31 10 00

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. Furnish all labor, material and equipment for subgrade establishment for all competition and adjacent similarly surfaced areas including track, field events, and synthetic turf. Work includes but is not limited to the following:

1. Layout and engineering;
2. Surface water and erosion control;
3. Management of the construction sequencing and scheduling relative to soil moisture content and the use of onsite material as fill;
4. Excavation, filling, back filling and compacting;
5. Subgrade scarification, drying, and re-compaction as required;
6. Compaction, compaction testing, and establishment of subgrade;

1.02 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 Oregon Tech for identification of underground utility location.

1.03 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.

B. Refer to the Site Preparation specification.

1.04 EXISTING UTILITIES

A. The Contractor shall coordinate all existing utilities prior to proceeding with demolition and earthwork activity. Protect any active pipes encountered.

1.05 DUST CONTROL

A. Protect persons and property from damage and discomfort caused by dust. Water as necessary to quell dust.

1.06 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.

1.07 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.

1.08 RELATED WORK IN OTHER SECTIONS

31 0000 Earthwork
33 4616 Subsurface Drainage
33 4623 Permeable Aggregate

1.09 QUALIFICATIONS

A. The subcontractor responsible for field base establishment, field subsurface drainage, and field permeable aggregate placement and compaction shall be submitted to the Field Landscape Architect 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 (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 (Not Used)

PART 3 - EXECUTION

3.01 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.

3.02 SEQUENCING AND SCHEDULING

A. All new cut and fill areas shall be seal rolled at the end of each day to minimize moisture penetration.

3.03 EXCAVATED MATERIALS

A. Strip surface to be disturbed of existing grass, brush, and any other organic plant material and dispose of off-site.

B. Existing sand or other site fill material located on portions of the current field area may be re-used for fill below the Throws Venue. All excess soil materials excavated to establish the required subgrade elevations shall be removed and disposed of off-site.

C. All items of concrete, debris, piping, etc., are to be disposed of off-site at Contractor's expense and pre-arranged location. The Contractor shall make efforts to have the concrete and asphalt concrete paving recycled.

3.04 SUBGRADE

A. All competition surface areas and adjacent areas of like construction and surfacing are to be compacted to at least 95% of maximum dry density by mechanical means as determined by ASTM D 1557-02. 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. Care must be exercised during grading of the subgrade so as to achieve a uniform, true surface relative to finish grade.

C. Finish subgrade for the field shall be established to within the tolerance of +0.00' or - 0.10' of the design subgrade elevation for these areas.

D. Fill must be select material, found on site below the existing field and free of organic matter, clay, concrete and other extraneous material, compactable to a minimum of 95% of the maximum dry density. Fill shall be placed and compacted in lifts of 12" maximum loose depth.

E. 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.

F. All other areas shall be compacted to a maximum of 90% of the maximum dry density. These areas shall be established to within the tolerance of +0.10' or - 0.10' of the design elevations and grades. All perimeter and swale areas shall be sloped in accordance with the grading plan. Swale grades shall include a constant slope between the designated high point and any catch basin rim elevations. Areas of ponding water in the swales shall not be accepted.

END OF SECTION 31 22 16

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. Furnish all labor, materials, equipment and services necessary to complete standard asphaltic concrete pavements as indicated in the drawings and as specified herein including but not limited to Pavements for Service Drives and Driveways.

1.02 STANDARD SPECIFICATIONS

A. APWA Section 27 - Asphalt Materials

B. APWA Section 32 - Bituminous Surface Treatment

C. APWA Section 34 - Asphalt Concrete Pavement

1.03 RELATED WORK IN OTHER SECTIONS

A. 31 00 00 Earthwork

B. 32 12 17 Porous Asphalt Paving

C. 32 13 00 Sitework Concrete

PART 2 - MATERIALS

2.01 ASPHALT CONCRETE PAVING

A. Asphalt Paving Schedule

1. Pedestrian Walkways, Service Drives, and Patching in like areas to be a single 3.5” lift Class ½” HMA over 6” compacted CSBC base.

B. Weather limitations: Construct asphalt paving only when atmospheric temperature is above 40 degrees F., when underlying base is dry and weather is not rainy.

C. Grade control: Establish and maintain the required lines and grades, including cross-slope as shown on the plans.

1. Pedestrian Pathways are to be subjected to a flood test and exhibit positive drainage and planarity within a tolerance of +¼” (-0”) over 10’ in any direction, prior to acceptance.

2. Patching shall be constructed to a planarity tolerance of +1/4" (-0") over 10' using a 10' straight edge across the patch in any direction, and exhibit positive drainage.

2.02 AGGREGATE BASE MATERIAL

A. CRUSHED SURFACING BASE COURSE: Shall be manufactured from ledge rock, talus, or gravel. The materials shall be uniform in quality and substantially free from wood, roots, bark, and other extraneous material and shall meet the following gradation:

Sieve Size	Percent Passing
1-1/4" square	100
5/8" square	50-80
¼" square	30-50
U.S. No. 40	3-18
U.S. No 200	7.5 max.
% Fracture	75 min.
Sand Equivalent	32 min

1. All percentages are by weight. The fracture requirement shall be at least one fractured face and will apply to material retained on each specification sieve size U.S. No. 10 and above if that sieve retains more than 5 percent of the total sample. The portion of crushed surfacing retained on a ¼ inch sieve shall not contain more than 0.15 percent wood waste.

B. CRUSHED SURFACING TOP COURSE: The Contractor may elect to use approved CSTC as a leveling course to improve the grading tolerance of the base material on track paving applications.

2.03 HOT MIX ASPHALTIC

A. Use asphalt mix formula of asphalt concrete producer accepted by the Oregon Department of Transportation.

2.04 SOIL STERILANT

A. Use one of the following materials:

1. Casaron W-50 Wetable Powder
2. DuPont Karmex
3. Pramitol 25E

PART 3 - EXECUTION

3.01 SUBGRADE

A. Establish subgrade and thoroughly compact to minimum 95% of maximum dry density and to a firm non yielding condition.

3.02 SOIL STERILANT

A. All areas to be paved, except as approved within 10 feet of irrigated natural turf, lawn, or landscape areas, shall be sterilized with material as recommended by the sterilant manufacturer, mixed with water and applied with power spraying after grading and compaction are completed and subgrade is established.

B. Contractor shall examine site before grading and shall apply additional sterilizer if necessary to fully ensure against damage to new asphalt paving from growing vegetation.

C. Sterilizer shall be applied after finish grading of base course and just before asphalt pavement is laid.

3.03 ASPHALTIC CONCRETE PAVEMENT

A. Finished aggregate base is to be placed only on an approved, compacted subgrade. Apply aggregate base and compact to a uniformly smooth hard surface with a minimum thickness of 6" as applicable conforming to lines, grades and cross sections as shown or directed. Compact to a minimum of 95% of maximum dry density.

B. The grade tolerance of the compacted base shall be +1/4" and -0". All edges to be straight or a continuous smooth line tapered at a 45 degree angle where free-standing or adjacent to soil area. No reverse slopes or birdbaths will be allowed. Use approved CSTC to make fine adjustments to base grade as necessary.

C. Contractor to select the appropriate means and methods for the placement compaction of asphalt mix; cold joints, seams, and cut lines shall all be neat in appearance and within planarity tolerance for every surface.

D. All vertical faces against which asphalt mix is to be placed shall receive an adequate coating of asphalt emulsion prior to paving, either sprayed or hand brushed as applicable.

E. The finished surface of the all asphalt shall be of uniform texture, smooth and uniform as to grade, and free from defects of all kinds. Verify elevation requirements prior to commencing paving.

F. All rejected asphalt paving to be removed and replaced shall be neatly saw-cut to limit as defined by the Engineer prior to removal. Prior to new asphalt placement, the resulting cut faces will receive a coating of asphalt emulsion tack coat. Replacement paving shall meet and match, and the resulting construction joint shall be sealed with a 4” width asphalt emulsion sealant and sanded with clean, fine silica sand.

3.04 HAND PLACING

A. All hand-placed asphalt shall be Class ½” HMA.

B. Spread, tamp, and finish mixture using hand tools in areas where machine spreading is not practical.

C. Place mixture at rate that will ensure handling and compacting before mixture temperature drops below acceptable tolerances.

D. Edges must have a straight or continuous smooth line. Where hand-placed asphalt abuts machine-placed asphalt, a 2” width of sealant shall be placed over the resulting construction joint and sanded.

3.05 QUALITY CONTROL

A. Prior to acceptance, all pavement shall to be exposed to a "flood" test.

B. When deviations in excess of the tolerances noted above or obvious depressions (birdbaths) are found, the pavement surface shall be corrected by the addition of asphalt concrete mixture of an appropriate class to low places or the removal of material from high places by methods satisfactory to the Engineer or by removal and replacement of the asphaltic concrete.

C. Corrections of defects shall be carried out until there are no deviations anywhere greater than the allowable tolerances. All areas in which the surface of the completed pavement deviates more than twice the allowable tolerances described above shall be removed and replaced to the Engineer's satisfaction.

D. When any corrections are made, the entire area shall have a seal coat applied so as to produce a new, non-repaired appearing surface. All costs involved in making the corrections of the defects described above shall be borne by the Contractor, and no additional compensation shall be made for this work.

3.06 CLEANING

A. After completion of paving operations, clean surfaces of excess or spilled asphaltic materials.

3.07 PROTECTION

A. Protect asphaltic paving from all damage of every kind.

B. Do not permit vehicular traffic on asphaltic paving until it has cooled and hardened and in no case sooner than six hours after placing.

C. Provide barricades and warning devices as required.

D. Protect soil and other site features where asphalt is being laid.

END OF SECTION 32 12 16

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. Include all labor, material, transportation and services to complete installation of the aggregate base and asphalt paving as shown on the drawings for the running track and tennis courts:

1. Final subgrade establishment
2. Base course aggregate
3. Track Asphalt Concrete paving (2 lifts)

1.02 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. Oregon Department of Transportation (ODOT) Standard Specifications.
2. American Public Works Associations, Standard Specifications for Municipal Public Works Construction, (APWA), latest edition.
3. American Society for Testing and Materials (ASTM)
4. American Association of State Highway and Transportation Officials, (AASHTO).

1.03 RELATED WORK SPECIFIED IN OTHER SECTIONS

31 00 00 Earthwork
31 22 16 Subgrade Establishment

1.04 QUALIFICATIONS

A. Asphalt Paving Contractor and Paving Contractor Foreman shall have completed an acceptable combination of the successful placement of asphalt paving on a minimum 5 applications as defined below over the previous 5 (five) years maximum. Provide written documentation describing acceptable completion of each example within 48 hours of request by the Owner. General Contractors are encouraged to secure this documentation prior to submitting Bids.

B. Acceptable documentation will be on the letterhead of the end user as described below including form name, phone number, and contact name and title.

C. Acceptable Successful Experience

1. Running Track Asphalt Base for Rubberized Track Surfacing, minimum area 60,000sf (successful installation documented by the rubberized surfacing provider/installer).
2. Tennis Court Asphalt Paving, minimum installation 6 (six) regulation courts (successful installation documented by the acrylic court surfacing provider/installer).
3. Airport Runway and Taxiway Asphalt Paving, minimum installation 100,000sf (excluding aprons and ramps), (successful installation documented by the Airport Authority or Developer).
4. Highway Paving, 60mph roadway wearing course, minimum 50,000 ton installation (successful installation documented by the Administering Department of Transportation).

1.05 SUBMITTALS

A. Submit to the Architect for approval:

5. Base course aggregate sieve analysis
6. Equipment and procedures to be utilized for the asphalt installation.
7. Asphalt mix design or composition.
8. Previous experience of the proposed asphalt installation foreman as described above.

PART 2 - MATERIALS

2.01 ASPHALT CONCRETE PAVING

A. All machine-placed asphalt concrete pavement shall be either Class 3/8” HMA or Class ½” HMA. All hand-placed asphalt pavements shall be Class 3/8” HMA.

B. Running track pavement section from approved subgrade to be 3-1/2" compacted depth, placed on a minimum depth of 6" aggregate base. The running track asphaltic concrete pavement shall be installed in 2 lifts. The first lift shall be a minimum 2" compacted depth of Class ½” HMA and the second lift shall be a minimum 1-1/2" compacted depth of Class 3/8” HMA.

C. Weather limitations: Construct asphalt paving only when atmospheric temperature is above 40 degrees F., when underlying base is dry and weather is not rainy.

D. Grade control: Establish and maintain the required lines and grades and cross-slope.

2.02 AGGREGATE BASE MATERIAL

A. For Track Asphalt Paving base, ODOT CSBC. The Contractor may, with approval, utilize an ODOT CSTC leveling course in substitution of up to 2” of the designed CSBC base.

PART 3 - EXECUTION

3.01 SUBGRADE

A. Establish subgrade and thoroughly compact to minimum 95% of maximum dry density.

3.02 AGGREGATE BASE

A. Place aggregate base only to existing compacted surface. Apply aggregate base and compact to a uniformly smooth hard surface with a minimum thickness of 6" or greater as required to conform to lines, grades and cross sections as shown or directed. Compact to a minimum of 95% of maximum dry density.

3.03 ASPHALTIC PAVING

A. The grade tolerance of the compacted first lift of asphalt shall be +1/4" and -0". The asphalt concrete base shall not deviate from the true surface in excess of 1/4" on a 10' straight edge in all directions.

B. For the running track, the surface elevation of the final lift of paving in the compacted condition, shall not deviate more than 1/4" from specified elevations. Trueness measurement to be taken from 10' long straight edge placed in all directions.

C. All edges to be flush to adjacent containment within 1/8”. No reverse slopes or birdbaths will be allowed. The complete surface of the asphalt shall be of uniform texture, smooth uniform as to grade, and free from defects of all kinds. Verify elevation requirements prior to commencing paving.

3.04 HAND PLACING

A. Spread, tamp, and finish mixture using hand tools in areas where machine spreading is not practical.

B. Place mixture at rate that will ensure handling and compacting before mixture temperature drops below 230 degrees F.

C. Edges must have a straight or continuous smooth line.

3.05 QUALITY CONTROL

A. Contractor shall coordinate inspections of the finished aggregate base course, initial asphalt pavement course, and finished asphalt paving course with the Engineer for verification of compliance with the specifications prior to proceeding with the next task or demobilizing from the job site.

B. Prior to acceptance, all pavement shall be exposed to a "flood" test. When deviations in excess of the tolerances noted above or obvious depressions (birdbaths) are found, the pavement surface shall be corrected by the addition of asphalt concrete mixture of an appropriate class to low places or the removal of material from high places by methods satisfactory to the Architect or by removal and replacement of the asphaltic concrete.

C. Deficiencies that are found to be higher than the specified tolerance shall be removed using micro-grinding techniques, grinding and re-paving, or cutting and patching as approved.

D. Deficiencies found to be lower than the specified tolerance but less than twice the diameter of the largest mix design aggregate particle shall be referred to the Rubberized Surfacing Contractor for fill using a sand/urethane matrix shim coat.

E. Corrections of defects shall be carried out until there are no deviations anywhere greater than the allowable tolerances. All areas in which the surface of the completed pavement deviates more than twice the allowable tolerances described above shall be removed and replaced to the Architect's satisfaction.

3.06 CLEANING

A. After completion of paving operations, clean surfaces of excess or spilled asphaltic materials.

3.07 PROTECTION

A. Protect asphaltic paving from all damage of every kind. Do not permit vehicular traffic on asphaltic paving until it has cooled and hardened and in no case sooner than six hours after placing.

B. Provide barricades and warning devices as required. Protect soil and other site features where asphalt is being laid.

END OF SECTION 32 12 18

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. Furnish all labor, material and equipment for the concrete work indicated below and shown on the drawings. Work includes but is not limited to:

1. Assist Engineer in acquiring test cylinders for compression testing where required or directed.
2. Coordinate construction of formwork with the Layout & Construction Staking Surveyor
3. Construct concrete curbing, paving, and slabs as shown in the plans.
4. Install concrete footings for fencing, netting, sleeves, goal anchors and plates, etc.

1.02 STANDARD SPECIFICATIONS

A. Standard Specifications for Road, Bridge and Municipal Construction, American Public Works Association (APWA)

B. American Concrete Institute (ACI)

C. American Society of Testing and Materials (ASTM)

1.03 RELATED WORK IN OTHER SECTIONS

11 6824 Exterior Athletic Equipment
31 0000 Earthwork
32 1218 Track Asphaltic Concrete Paving
33 40 00 Storm Drainage

PART 2 - PRODUCTS

2.01 CONCRETE

A. Refer to APWA Standard Specifications Section 5-05, "Cement Concrete Pavement."

B. Expansion Joints: Provide expansion joints at 10' o.c. maximum, equally spaced unless otherwise shown in the drawings.

C. Joint Filler: Use non-staining, non-extruding, compressible and resilient, closed cell joint filler of neoprene foam conforming to ASTM D1752, Type RE-42. Joint fillers which contain or have been treated with oil, grease or bituminous materials are prohibited. Test joint fillers for compatibility with proposed sealant.

1. Acceptable joint filler: Neoprene Sponge Rubber joint Filler by the Burke Company, or other accepted by Project Representative.
2. Joint Sealant: ASTM C920, Grade NS, Class 25, Type M; multi-component, chemical curing, non-staining, non-bleeding, capable of continuous water immersion, non-sagging type; color to be selected.

D. Preformed Expansion Joint Strips: Vinylex Corporation “VP 1391”, or approved 1/2 inch wide vinyl joint strip with removable cap.

E. Control Joints: Provide control joints midway between expansion joints unless otherwise called for in the plans. Control Joints shall be sawn including a machined eased edge on each side of the joint.

F. Reinforcing: Utilize reinforcing as specified in the details.

G. Cast-in-place Concrete components

1. Aggregate: Clean, hard, durable particles of natural sand conforming to ASTM C33 for fine aggregate. Clean, uniformly hard, durable particles of gravel or crushed stone conforming to ASTM C33 for coarse aggregate.
2. Cement: Conform to requirements of ASTM C150. Use Type I or, at Contractor's option, Type III. Any change in type or admix use shall be at approved locations.
3. Ready-mixed Concrete: Conform to requirements of ASTM C94 Alternative #3.
4. Maximum Size of Coarse Aggregate: Conform to requirements of ACI 301, Paragraph 3.6.
5. Minimum Cement Content: Six sacks per cubic yard.
6. Admixtures: Conform to requirements of ACI 301 and ASTM C260 for air entrainment. Use of accelerators or water-reducing retarders is prohibited.
7. Maximum Water Content: Six gallons of water per sack of cement. Free of injurious amounts of oil, acids, alkali, salts, vegetable matter, and fit to drink.
8. Minimum Concrete Compressive Strengths: A minimum compressive strength of 3,000 PSI shall be achieved in 28 days using Type I cement and in seven days using Type III cement, unless otherwise shown on drawings.
9. Slump in Inches: Unless otherwise shown on drawings, conform to ASTM C143 procedures for concrete to be vibrated: Maximum = 4", Minimum = 1".
10. Control Joints: Not less than 3/8" thick x 3/8" minimum depth with tooled edges.

2.02 FORMWORK

A. Forms: Wood, plywood, metal, other verified material to provide continuous, straight, structurally sound formwork and to produce specified concrete finish.

Wood to be defect-free or properly corrected to provide straight lines and smooth, even surfaces.

B. Form-coating compound: Commercial formulation form-coating compound that will not bond with, stain, nor adversely affect concrete surfaces requiring bond or adhesion, nor impede the wetting of surfaces to be cured with water or curing compounds, nor interfere with subsequent applications of finish such as paints or stains.

C. Miscellaneous: Verified-type material and hardware for forming chamfers, recesses, openings, control joints, etc.

D. Design of Formwork

1. Design of formwork is Contractor's responsibility. Conform to shape, lines, and dimensions shown on the drawings. Design for adequate strength to sustain all construction loads without deformation or deflection.
2. Make joints tight to prevent leakage of mortar. Properly brace and tie together to maintain position and shape. Truss for support if adequate foundation for shores cannot be provided. Fabricate accurately to minimize development of irregularities at panel joints. Construct to accommodate control, expansion, or other type joints shown on the drawings or as specified.
3. Coordinate with all other trades to accommodate their work.

PART 3 - EXECUTION

3.01 SUBGRADE ESTABLISHMENT

A. Establish subgrade at elevations required to achieve the slopes and finish grade elevations designated on the drawings. The Contractor shall schedule the Engineer for a subgrade inspection prior to installation of the concrete.

B. The subgrade shall be compacted to a minimum of 95% maximum dry density. The subgrade shall be moistened to minimize absorption of water from fresh concrete.

3.02 FORMWORK INSTALLATION

A. Conform to the requirements of each area of work including tolerances for horizontal and vertical dimension control, specifically as described for areas requiring conformance to NCAA Track and Field Regulations and the printed installation instructions of embedded items such as slot drains and Track and Field Equipment.

B. Thoroughly clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt or other debris just before concrete is placed. Prepare form surfaces by coating the contact surfaces of forms with a form-coating compound before reinforcement is placed.

C. The form-coating compounds shall be thinned only with thinning agent of type, and in amount and under conditions of the form-coating compound manufacturer's directions. Do not allow excess form-coating material to accumulate in the forms or to come into contact with concrete surfaces against which fresh concrete will be placed. Apply in compliance with manufacturer's instructions.

D. Coat steel forms with a non-staining, rust-preventative form oil or otherwise protect against rusting. Rust-stained steel formwork is not acceptable.

E. Place and secure forms to correct location, dimension and profile. Assemble formwork to permit easy stripping and dismantling without damaging concrete.

F. Place joint fillers vertical in position, in straight lines. Secure to formwork during concrete placement.

3.03 CONCRETE MIXING AND PLACING

A. Conform to the requirements of ACI 301, Chapters 7 and 8, and ACI 304. Clean and free of all foreign matter, and all mixing and transporting equipment and subgrade and forms to receive concrete. Clean reinforcement of deleterious coatings.

B. Notice of intention to place concrete shall be given to the Engineer at least 24 hours before an intended pour.

C. Conform to ACI 305 "Recommended Practice for Hot Weather Concreting". Take steps to reduce concrete temperature and water evaporation by proper attention to ingredients, production methods, handling, placing, protection and curing.

D. Conveying: Conform to ACI 301, Paragraph 8.2. Convey concrete from mixer to place of final deposit by methods preventing separation or loss of materials. Use pump, crane bucket, wheelbarrow, or buggies to deliver concrete to placing location. Chuting permitted only by methods to ensure a practically continuous flow of concrete at delivery end to prevent material separation.

E. For walkways, curbing and slabs provide light broom finish and provide chamfer edges as shown in the details.

F. Curing Materials

1. Absorptive Cover: Burlap cloth made from jute or kenaf weighing approximately 9 oz. per square yard, complying with AASHO M182, Class 3.
2. Moisture-retaining Cover: Either waterproof paper, Polyethylene film, or Polyethylene-coated burlap, complying with ASTM C171.
3. Membrane-forming Curing Compound: ASTM C309, Type I, unless other type acceptable to the Engineer.

3.04 FORMWORK REMOVAL

A. All formwork shall be removed after proper curing of concrete. Protect surfaces of concrete during removal operations.

B. Formwork not supporting weight of concrete may be removed after cumulatively curing at not less than 50 degrees F for 24 hours after placing concrete, provided concrete is sufficiently hard to not be damaged by form removal operations and provided curing and protection operations are maintained.

3.05 REUSE OF FORMWORK

A. Clean and repair surfaces of forms to be reused in work. Split, frayed, delaminated or otherwise damaged form-facing materials will not be acceptable for reuse. Apply new form-coating material as necessary, as specified for new formwork.

3.06 REPAIR OF SURFACE DEFECTS

A. General: Conform to ACI 301, Chapters 9 and 13. After removal of forms, repair or patch concrete not formed as shown, out of alignment or level beyond required tolerances or that shows surface defects, to condition as verified by Engineer. Immediately after form removal, patch all tie holes and repairable defective areas.

B. Honeycombed areas shall be removed to sound concrete but not less than 1" minimum depth. Dampen area and to 6" width around same; let evaporate only to loss of sheen. Provide a bond of neat cement and water slurry well brushed into area to be patched. Provide patching mixture of 1:2 (cement:sand) or verified proprietary patching mixture or color to match adjacent surfaces; use water quantity only as required for mixing and placing. Leave patched surface slightly high; after one hour, float to level with adjacent surface. Keep patched areas damp for seven days.

3.07 PROTECTION

A. Protect freshly-placed concrete from premature drying and excessive cold or hot temperature, and maintain without drying at a relatively constant temperature for a period of time necessary for hydration of cement and proper hardening. Provide

protection from vandalism.

B. Protect all concrete during curing period from all damaging mechanical disturbances, more especially load stresses, heavy shock and excessive vibration. Protect finish surfaces from all damage.

3.08 TOLERANCES

A. The surface elevation, in the finished condition, shall not deviate more than 1/8" from specified elevations. Trueness measurement to be taken from 10' long straight edge placed in all directions.

3.09 CLEANUP

A. At project completion, leave all work clean, defect-free, with uniform finish and color.

END OF SECTION 32 13 00

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. Include all labor, material, equipment, transportation, and services to install complete all-weather rubberized running track, “D” Zone, and field event surfacing, as well as steeple chase jump, Jump pit covers, long jump take off boards, and vault box plugs as shown on the plans, and provide Surveyor Certification of track events measurement, and as specified herein.

B. The system shall include the following:

1. BASE BID track and field event rubberized surfacing shall be a 13mm sealed base matt / structural spray system in standard oxide red. It shall include an 11-12mm paved-in-place SBR rubber base matt bound with polyurethane over new asphaltic concrete paving or concrete paving as applicable. The rubber base for all areas of rubberized surfacing shall be sealed with a red pigmented two-component self leveling polyurethane. All areas of track, “D” Zones and long jump runway rubberized surfacing shall include a 1.5-2mm sprayed-on top coating of single component red polyurethane with red EPDM fines / rubber granulate.

2. ADDITIVE ALTERNATE BID ITEM 1 surfacing shall be a 13mm sandwich-type system in standard oxide red. It shall include a minimum 9mm paved-in-place SBR rubber base matt bound with polyurethane over new asphaltic concrete paving or concrete paving as applicable. The rubber base for all areas of rubberized surfacing shall be sealed with a red pigmented two-component self leveling polyurethane. All areas of track, “D” Zones and long jump runway rubberized surfacing shall include a minimum 4mm “flooded” top coating of single component red polyurethane with 1.0 – 2.0mm red EPDM granulate.

C. Provide painted lines and event striping and markings conforming to NCAA regulations and as specified.

D. Coordination and cooperation with all other contractors performing work relating to and affecting the work of this section.

E. Review of and acceptance of installed work of other trades directly affecting the work of this section.

F. All rubberized surfaces must have homogeneous texture. All areas, such as abutting seams that do not have uniform texture must be cut out and resurfaced with acceptable texture and finish appearance.

G. Remove asphalt or concrete paving as necessary by grinding to accommodate thickened section of rubberized surfacing at select regions of runways and high wear areas as shown and described.

H. Apply full depth rubberized surfacing system to the long jump take off boards, and provide full-depth plugs conforming to pole vault boxes.

I. Provide full five year warranty package on surfacing and two years on striping and event markings.

1.02 RELATED WORK IN OTHER SECTIONS

11 68 24 Equipment & Furnishings
32 12 18 Track Asphalt Paving
32 13 00 Sitework Concrete

1.03 STANDARD SPECIFICATIONS

A. National Collegiate Athletics Association Track and Field Rules (NCAA, last edition in print at the time of Bid).

1.04 PRE-APPROVED VENDORS/INSTALLERS

A. Vendor for the rubberized field event surfacing shall be the same as the rubberized track surfacing. The following vendors/installers are pre-approved for installation of the rubberized running track and field event surfacing.

1. Beynon Sports Surfaces, Gary Logsden (503) 691-2484 ext 222
2. California Track & Engineering
3. Hellas Sports, Jeff Bergevin (425) 754-2275

1.05 SUBMITTALS

A. Experience, References, and Installation:

1. All vendors which are not pre-approved shall submit written evidence of a two-year minimum successful experience record of Manufacturer, Supplier, Installation team in the installation of a minimum of 5 (five) similar projects that include paved base matt, sandwich-type, and/or poured-in-place, two-component elastomeric polyurethane synthetic track surfacing in the previous two years. List locations, client, client contact names, address, telephone, material installed, date of installation, general contractor (if any), whether a new project or a resurfacing.
2. A minimum of 30 calendar days prior to the scheduled commencement of the

surfacing installation, the Contractor shall submit to the Engineer the name of track marking subcontracting firm and surveyor, their proposed foremen and key personnel, along with their experience record. The Engineer must approve the marking subcontractor.

B. Track Striping Shop Drawings

1. The Contractor shall submit a minimum of 30 calendar days prior to the scheduled commencement of the surfacing installation, complete and detailed track striping and marking plan with calculations showing all conditions of installation, connection to other work, dimensions, size, shape, color, and location of all lines and markings, including hurdle markers, lane numbers, relay exchange zones, etc. Drawings shall show the entire track on one sheet at 1"=20' scale.
2. This shop drawing is for Owner/Engineer review. The Contractor is not to proceed with painting until the drawing is approved by Engineer or, as may be required, resubmitted for approval with revisions.

C. Manufacturer's Specifications: Within 21 calendar days after Notice to Proceed, the Contractor/Vendor shall submit to the Engineer for approval five copies of each of the selected manufacturer's surfacing material specifications and installation instructions.

D. Vendor shall prepare a sign suitable for outdoor installation indicating events marked on the track and corresponding marking colors. Sign shall be a minimum of 24 x 36, 16 gauge aluminum.

E. Sample Warranty Package: Within 21 calendar days after Notice to Proceed, submit to the Engineer for review five (5) sample copies of the surfacing warranty package herein specified.

F. Maintenance and Operating Data:

1. Furnish to the Engineer, in manual form, four (4) copies of maintenance and operating data prior to final acceptance.
2. Manual shall be enclosed in a hard cover with the following information appearing on the outside of the cover: Project name, Owner's name, Engineer's name, Rubberized Surfacing, Consultant's name, Prime Contractor's name, Year of project completion
3. Index manual with tab dividers for data as follows:
    a. Materials installed with their characteristics
    b. General maintenance
    c. Lining and marking installation
    d. Lining and marking removal

e. Small repair procedures
f. Discussion on precautions to be practiced and general maintenance and procedures to be avoided to prolong surface life and to maintain installation's warranty.
g. Copy of warranty document

1.06 QUALITY CONTROL

A. Area and Base Acceptance:

1. The Surfacing Subcontractor/Installer (if applicable) shall inspect, verify and accept in writing to the Prime Contractor, with a copy to the Engineer, all installed work of other trades directly affecting the work of this section.
2. Installer must examine the areas and conditions in which rubberized surfacing is to be installed. The asphaltic concrete or concrete paved base shall be inspected for conformity with the lines and grades.
3. The installer is to coordinate the required curing of any new asphalt concrete paving with the Prime Contractor prior to placing the first lift of rubberized surfacing.

B. Track Marking Certification

1. Upon completion of the track markings, the Contractor shall furnish an acceptable document or certificate of accuracy to the Owner attesting to the accuracy of the track markings and measurements and shall include copies of the computations, calculations, and drawings that were used to obtain this accuracy.
2. This certificate shall also be signed with their seal indicating registration number by the Professional Engineer or surveyor in charge licensed in the State of Oregon.

1.07 TESTS

A. The Owner reserves the right to submit the surface system to various tests to verify whether or not surfacing system meets the minimum specifications or manufacturer's submitted specifications. Any section of the system so tested that is found to be out of specification shall be removed and replaced to the proper specification, at the sole expense of the Contractor.

1.08 WARRANTY

A. In addition to the general warranty specified in the General Conditions of the specifications, an additional four-year vendor warranty (5 year total) for the rubberized surfacing system shall be provided to the Owner by the track surfacing

vendor, protecting Owner against all manufacturing, material and installation defects associated with materials and workmanship under this section. Warranty to extend from date of final acceptance by Owner.

B. Warranty shall cover in general the usability of the installed surfacing system, accessories use characteristics, suitability of the installation for the period specified, and for the designated uses enumerated as follows:

1. Track Events and Field Events with spiked shoes (per NCAA Rule 4 Art. 5)
2. Physical exercises
3. Physical education activities
4. Marching band
5. Cheerleading activities
6. Access to adjacent football/soccer field
7. Pneumatic rubber-tired maintenance and service vehicles
8. Pedestrian traffic and other similar uses
9. Community running and jogging
10. Wheelchair traffic

C. Conditions Warranty: Warranty shall agree to promptly repair or replace work, which deteriorates excessively or otherwise fails to perform as required due to failures of materials and workmanship. Striping and other painted markings are excluded from the warranty. For the purposes of this warranty, excessive deterioration is defined as a loss of fifty (50%) of the wearing surface or granular loss. Failure of material and workmanship is defined to include, but is not limited to, delaminating of the track from its asphaltic concrete base, or from integral layers of surfacing material, and leaching of binders or other surfacing components. All defects are to be promptly repaired. If the warrantor does not initiate repair work within 21 calendar days from receipt of complaint in writing, adverse weather conditions accepted, the Owner shall have the right to order the work performed by others and the warrantor shall be liable for costs accruing to the Owner.

D. The parent company or corporation of the track surface installation firm shall issue the warranty. The warranty shall be signed by an authorized principal of the applicable firm, duly-authorized to make contracts.

E. A separate warranty from the General Contractor, the Track Installer and/or the Striping Subcontractor shall be issued for the marking and striping guaranteeing applied painting for a period of two (2) years from fading in color and intensity plus cracking or separating from the track surface.

PART 2 - PRODUCTS

2.01 BASE MATT COMPOSITION

A. A primer shall be applied to the asphaltic concrete pavement base prior to installation of the base matt. The primer shall be polyurethane base as specified by the surfacing system manufacturer.

B. The base mat shall be composed of SBR rubber granules and single component polyurethane binder. The base matt shall be comprised of a maximum of 80% SBR and a minimum of 20% single component polyurethane by weight. The base matt layer shall be a minimum 10mm thick.

C. SBR Rubber Granules:

1. The granules shall be recycled styrene butadiene rubber (SBR). There shall be no traces of fiber or steel with granulate.
2. Granulate particles shall meet the following gradation requirements:

Particle Size	Percentage by Weight
0-1.0mm	3.5%
1.0-2.0mm	15-25%
2.0-3.0mm	30-40%
3.0-4.0mm	30-40%
Larger than 4.0mm	0-5%

D. Polyurethane Binder:

1. For the base layer utilize single component polyurethane.
2. No mercury, lead or other heavy metals are to be present.
3. No solvent or fillers are to be added.

2.02 BASE MATT SEALANT

A. The base layer shall be sealed with a two-component self leveling polyurethane and fine mesh EPDM rubber. Sealant polyurethane and EPDM shall be pigmented red.

B. The two component polyurethane shall be self-leveling and compounded from pigmented polyol and MDI based isocyanate with no solvents or fillers added.

C. EPDM:

1. The granules shall be composed of fine mesh peroxide cured Ethylene Propylene Dien Polimerisat (EPDM) rubber.
2. Granules shall have a specific density of 1.6 +/- 0.08.
3. Materials to have shore hardness from 55 to 60.
4. Sulphur cured rubber is unacceptable.

2.03 STRUCTURAL SPRAY SYSTEM TOP COAT (BASE BID SYSTEM)

A. The top coat shall be comprised of two structural spray coats. The structural spray coats shall be comprised of a blend of pigmented EPDM rubber granules and pigmented single component polyurethane. The two structural spray coats shall be applied at a rate totaling 3.0 lbs/sy and providing a minimum 1.5mm thickness for all areas except the long jump and pole vault runways which shall have three spray applications with a total of 4.5 lbs/sy and providing a minimum 2.25mm thickness.

B. The binder for the structural spray coats shall be a single component pigmented polyurethane. No mercury, lead or other heavy metals are to be present. No solvent or fillers are to be added.

C. The granulate for the structural spray shall be composed of peroxide cured Ethylene Propylene Dien Polimerisat (EPDM) rubber. For the first structural spray coat half of the granules are to be graded from 0.5 mm to 1.5 mm in size and half of the granules are to be 1.0 mm to 3.0 mm in size. For the second structural spray coat all of the granules are to be graded from 0.5 mm to 1.5 mm in size. The EPDM granules shall meet the following requirements:

1. The granules shall be composed of peroxide cured Ethylene Propylene Dien Polimerisat (EPDM) rubber.
2. Materials to have shore hardness from 55 to 60.
3. Granules shall have a specific density of 1.6 +/- 0.08.
4. Sulphur cured rubber is unacceptable.

D. The structural spray coat EPDM rubber granules and single component polyurethane shall be pigmented red.

2.04 SANDWICH SYSTEM (ALTERNATE BID ITEM)

A. Base Matt and sealant shall be as for the Base Bid System except the finished depth of the paved base matt shall be no less than 9mm and no more than 11mm.

B. The top coat shall be comprised of pigmented two component polyurethane and embedded pigmented EPDM rubber granules. The top coat shall be installed with multiple applications providing a minimum 3.0 mm thickness. The top coat shall be a minimum of 60% two component polyurethane and a maximum of 40% EPDM

granules.

C. The two component polyurethane shall be self-leveling and compounded from pigmented polyol and MDI based isocyanate with no solvents or fillers added.

D. The granulate for the top coat shall be composed of peroxide cured Ethylene Propylene Dien Polimerisat (EPDM) rubber. The EPDM granules shall meet the following requirements:

1. The granules shall be composed of peroxide cured Ethylene Propylene Dien Polimerisat (EPDM) rubber.
2. Materials to have shore hardness from 55 to 60.
3. Granules shall have a specific density of 1.6 +/- 0.08.
4. Sulphur cured rubber is unacceptable.
5. The granules are to be graded from 1.0 mm to 2.0 mm in size.

E. The top coat EPDM rubber granules and two component polyurethane shall be pigmented red.

2.05 PHYSICAL PROPERTIES OF SYSTEM

A. The synthetic track surfacing system shall exhibit the following minimum performance standards as required by IAAF:

Thickness	> 13mm
Force Reduction	35 to 50%
Modified Vertical Deformation	0.6 to 1.8mm
Friction	> 47 TRRL Skid Resistance
Tensile Strength	> 0.5MPa
Elongation at Break	> 40%

B. The synthetic track surfacing system shall exhibit the following minimum performance standards per ASTM:

Tensile Strength (D-412-61T)	300psi
Impact Resilience (D-2632)	0%
Compression Set (D-395-b)	90% - 95%
Compression Modulus (D-575-49):	10% and 50% 8kp/90kp
Gliding Behavior	Wet 0% - Dry 0%
Resistance to oil and normal	Favorable cleaning solutions

2.06 TRACK LINING AND MARKING

A. The Contractor shall retain a Professional Engineer or surveyor licensed in the State

of Oregon to layout the track markings. Calculate locations of specified event markings. The calculations shall be made to the nearest 1/10,000th of a foot and angles to the nearest second.

B. A complete track lining and marking system shall be provided.

C. All lines and markings are to have true sharp edges with no weeping.

D. Marking Paint: The paint shall be polyethylene based, specifically manufactured to be compatible with and formulated for application on polyurethane synthetic track surfaces.

E. Provide layouts in accordance with NCAA for the following events:

Event	*Notes*
100 METER HURDLES	Marked on north and south straight
110 METER HURDLES	Marked on north and south straight
300 METER HURDLES	1 Turn Stagger
400 METER HURDLES	2 Turn Stagger
100 METER DASH	Marked on north and south straight
200 METER DASH	1 Turn Stagger
400 METER DASH	2 Turn Stagger
800 METER RUN	3 Turn Stagger
1600 METER RUN	Waterfall, alley start
3200 METER RUN	Waterfall, alley start
5000 METER RUN	Waterfall, alley start
10000 METER RUN	Waterfall start
4 x 100 METER RELAY	2 Turn Stagger
4 x 400 METER RELAY	3 Turn Stagger
4 x 200 METER RELAY	3 Turn Stagger

F. Other markings shall include:

1. Relay Exchange Zones: Colors as recommended in NCAA; solid equilateral triangles with side dimensions equal to clear distance between lane lines at both ends of exchange zone in each lane.
2. Lane Numbers: Five sets of lane numbers "1" through "9", inclusive, with shadowing as approved by the Engineer. Separate templates are to be utilized for shadowing. Lane numbers shall be not less than 3" stroke and not less than 24" high.
3. Lane lines shall be white.
4. A black 2” x 2” square shall be painted at the intersection of the common finish line each lane line
5. Hurdle marks shall be triangles

6. Pole Vault Runways shall be marked at 1 ft and 5 ft. intervals, beginning at the edge of the vault box to the end of each runway. 1 ft. markings shall consist of a 1" x 4" rectangle and 5 ft. markings shall consist of a 2" equilateral triangle, with a distance from the point of beginning indicated on the 5 ft. markings only, with a distance from the point of beginning.
7. Long Jump / Triple Jump Runways shall be marked at 1 ft and 5 ft. intervals, beginning at the edge of the 8 ft. take off board to the end of each runway. 1 ft. markings shall consist of a 1" x 4" rectangle at center of runway for 15 ft. from vault box initial 15 ft., and then along painted runway line, and 5 ft. markings shall consist of a 2" equilateral triangle, with a distance from the point of beginning indicated on the 5 ft. markings only, with a distance from the point of beginning.
8. Centered in Lane 4 of the Grandstand Front Stretch shall be the words "OREGON TECH" painted 38" high and extending approximately 20' in width utilizing unique stencils approximating the Oregon Tech logo in font and letter spacing (or as approved).

PART 3 - EXECUTION

3.01 PREPARATION

A. Accept the conventional asphaltic concrete or concrete base onto which the surfacing is to be applied.

B. Immediately prior to application, all base construction shall be thoroughly cleaned of all dirt, debris or any other substances that will be detrimental to the installation.

C. Apply such priming material as may be necessary to assure complete bond of polyurethane to the asphaltic concrete and concrete base surfaces.

D. Contractor must protect all adjacent areas from any contamination or over spray from rubberized surfacing installation procedures. Tape plastic sheeting to concrete edging or adjacent exposed asphalt concrete paving, to protect synthetic turf and adjacent areas.

3.02 INSTALLATION

A. General:

1. Only experienced, specialized personnel are to be utilized in the installation of surfacing materials and applying the line and marking points. The Superintendent and the supervisory or technical personnel must be employees

of the vendor/installer firm.

2. Install in strict accordance with the specifications, drawings, approved shop drawings and manufacturer's specifications and instructions, when applicable.

B. Environmental Conditions: Materials are not to be placed when:

1. Ambient air temperature is below 50 degrees F.
2. Material temperatures are below 50 degrees F.
3. Surfaces are wet or damp.
4. Precipitation is falling or pending.
5. Conditions exist or are pending that will be unsuitable for the installation of the system.

C. Equipment: The components shall be blended in a clean and dry, specifically designed, mixing machine with automatic proportioning controls to guarantee exact proportions of the polyols and isocyanates and the auxiliary components (rubber) which control the reactions and balance of the varying climatic conditions during the laying process.

D. Base Matt Installation:

1. The base layer shall be mechanically mixed to obtain a homogeneous mixture of 20% polyurethane and 80% SBR rubber granulate.
2. Base material to be placed utilizing a mechanically operated finisher with an electrically heated, oscillating finishing screed bar.
3. The base layer shall be placed with a minimum finished thickness of 12mm or 10mm as applicable.

E. Base Matt Seal Coat Installation:

1. The base layer for all areas shall be sealed with a two component self leveling polyurethane.
2. A choker layer of fine mesh EPDM may be broadcasted and brushed into the base matt prior to application of the two component polyurethane sealer.
3. The two-component polyurethane shall be homogeneously mixed in accordance with the manufacturer’s recommendations.
4. The material shall be uniformly applied over the entire surface with sufficient amounts to seal the base matt resulting in an impervious surface.

F. Sandwich System Top Coat Installation

1. The two-component polyurethane shall be homogeneously mixed in accordance with the manufacturer’s recommendations.
2. The material shall be uniformly applied over the entire surface in multiple lifts

to provide a minimum depth of 3.0mm.

3. The EPDM granules shall then be broadcasted over the surface at a minimum rate of 9 lbs per square yard.
4. The EPDM granules shall be broadcast evenly to provide a uniform surface texture.
5. The 1.0mm to 2.0mm EPDM granules shall be embedded into the two component polyurethane to achieve the full depth of the 3 mm wearing course.

G. The finished rubberized track and field event surfacing shall not vary more than +3.0mm and -0.0 mm in 3 meters, measured in any direction as gauged from a straight edge. No reverse slopes or depressions will be allowed. The completed surface of the track and field events shall be of uniform texture and grade, and be free from defects of any kind.

H. Contractor must protect all adjacent areas from any contamination from track installation procedures. Discoloring of any surfaces will be cause for required replacement if cleaning is deemed unacceptable by the Engineer.

3.03 CLEANING

A. Remove all excess materials of all kinds, equipment, and debris from the site immediately after completion of the work.

B. Remove all paint splatters, spots, stains, and other blemishes from all finished surfaces. Rubberized surfaces must have a new, uniform appearance.

C. Leave work in clean condition ready for use by the Owner.

3.04 PROTECTION

A. Adequate protection from damage of materials and work will be the responsibility of the installer during installation and until acceptance of their work. The General Contractor will be responsible for protection after the acceptance of the work until final acceptance of all contract work.

B. All damaged material prior to, during and after installation shall be replaced at no cost to the Owner.

END OF SECTION 32 18 23

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. Scope of work to include all labor, material, equipment, transportation and services to install complete new vertical draining in-filled parallel-slit film-type synthetic turf surfacing system for the field area. Infilled Synthetic Turf System to be as herein specified including, but not specifically limited to the following:

1. Independent testing of synthetic turf materials prior to shipment to project site.
2. Delivery of the synthetic turf materials (not including infill) a minimum of 1 week prior to the scheduled installation of the materials;
3. Installation of complete vertically draining synthetic turf surfacing system. Field system shall consist of a sand and rubber infill composition.
4. Installation of slit film turf system for the field.
5. Installation of all inlaid or tufted (as applicable) field lines and markings as indicated on the drawings.
6. Provide extra turf materials to the Owner for future repair and protective purposes.
7. Provide all appropriate maintenance manuals, repair manuals, and warranty package to Owner. Warranty shall include a pre-paid insurance policy in support of the warranty required for the field, for the entire warranty period from an A-rated domestic insurance carrier.
8. Complete specific maintenance activities at specified intervals after the date of acceptance.

1.02 SYNTHETIC TURF SURFACING PERFORMANCE & PAYMENT BOND

A. The Synthetic Turf Contractor shall provide a performance and payment bond to the General Contractor for the full subcontract amount of the synthetic turf surfacing system. A copy of the performance and payment bond must be provided to the Owner within 14 days of the issuance of the notice to proceed.

B. It is strongly recommended that General Contractors obtain proof of bondability from the Synthetic Turf Contractors prior to inclusion of synthetic turf bid proposals in their bids to the Owner.

C. The performance and payment bond must be provided in the name of the same corporate entity that provides the warranty for the synthetic turf surfacing system to the Owner.

1.03 SYNTHETIC TURF SURFACING

A. The following vendors are pre-approved for the Synthetic Turf Field:

1.	Astroturf	Astroturf (206) 979-9792
2.	Hellas	Hellas (425) 835-0315
3.	FieldTurf	Fieldturf (360) 668-8989
4.	Shaw Sports	Shaw (512) 627-2220
5.	SprinTurf	SprinTurf (206) 276-9393
6.	UBU	Academy Sports (800) 828-8700
7.	A-Turf	A-Turf (888) 777-6910

B. All vendors that are not included as a pre-approved product need not submit Substitution Requests during the Bidding Period.

C. All Bidders shall submit the following information within 48 hours of the Bid Opening if requested by the Owner;

1. Vendor Background and Experience: Describe your firm's history. Include information identifying the firm's annual volume and the firm's stability in the marketplace. Also include the firm's record relating to installation schedules and performance.
2. Provide information regarding local representation, and post-installation support.
3. Provide proof of bondability.
4. Product Manufacturer Background and Experience: Describe the history and experience of the product manufacturer with this specific product including years of experience and a count and listing of North American and worldwide synthetic turf field installations. The list shall include field locations, client, client contact names, address, telephone, material installed, date of installation, and general contractor (if any).
5. Product Installer Background and Experience: Describe the history and experience of the product installer with this specific product including years of experience and a count and listing of field installations. The list shall include field locations, client, client contact names, address, telephone, material installed, date of installation, and general contractor (if any). If the installer is not the manufacturer or vendor of the product, describe the experience the installer has with this specific product.
6. Product Samples: Provide the following samples with the substitution request.
   Two 8"x 12" samples each of green turf without infill material showing backing with perforations.
   Two 8" x 12" samples each of turf with the infill material.
   Two samples of the proposed in-fill material.
7. Product Specification: Provide specification for the proposed synthetic turf product. Note any required deviations from the In-filled Synthetic Turf Technical Specifications included in this section.

8. Product Performance: The samples submitted with the proposal will be reviewed and evaluated. As a supplement to the samples, provide a written description of the following performance criteria for the proposed synthetic turf surfacing system:
   a. Abrasive characteristics
   b. Weekly, Monthly, and Annual Maintenance Requirements
   c. Playability for Soccer
   d. Wet and Dry Traction
9. References: Supply a minimum of ten references, including contact name and telephone number, for other installations of this product.

1.04 APPROVED FIBER MANUFACTURERS

A. The following fiber manufacturers are pre-approved for use in the specified In-filled Synthetic Turf Systems:

Bonar FB Ultra
Fieldturf Classic HD
ITS Sprinturf Ultrablade
Polytex FB 11HP
TenCate XP Blade+ (plus)

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 both green 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.

1.05 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 2.25” 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. Manufacture 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 (Northern California, Oregon, Washington, Idaho).

1.06 RELATED WORK SPECIFIED IN OTHER SECTIONS

11 68 24 Exterior Athletic Equipment
31 00 00 Earthwork
31 22 16 Subgrade Establishment
33 46 23 Permeable Aggregate
32 84 23 Washwater and Irrigation
33 46 16 Subsurface Drainage
32 13 00 Sitework Concrete

1.07 STANDARD SPECIFICATIONS

A. Comply with NCAA Rules for Men's and Women's Soccer, latest edition, for all field markings.

B. For standards: Applicable American Society for Testing Materials (ASTM), (latest edition).

1.08 POST AWARD SUBMITTALS

A. Shop Drawings: Within 14 calendar days after issuance of Notice to Proceed,

submit to the Project Engineer five (5) copies of complete and detailed drawings showing all component parts of the synthetic turf system to the Engineer for review. The shop drawings shall be drawn to scale (1”=30’ minimum) and shall include:

1. edging details
2. insert details including backing material
3. seam details
4. seam layout
5. gluing patterns
6. 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 Project Engineer:

1. Two 6"x 12" samples each of green 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 Project 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 28 calendar days after issuance of Notice to Proceed, submit to Project 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 the following test results for the system specified to the Engineer. 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 plus pad composition and performance.
3. Pill Burn Test – ASTM D2859

E. Maintenance and Operating Data:

1. Prior to Substantial Completion, furnish five (5) copies in hard cover form of maintenance and operating data with imprinted Project, Owner, Engineer, Turf 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; General maintenance; Small repair procedures; Minor seam repair; Discussion of precautions to be practiced, general maintenance, and uses to avoid to protect turf surface and to maintain installation's warranty.
5. 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.

1.09 PRE-SHIPMENT SUBMITTALS

A. Prior to shipment of the synthetic turf materials to the job site, synthetic turf material from every sixth roll shall be randomly sampled and the tested by an independent testing laboratory experienced 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.	D5848	Pile Weight
3.	D5848	Total Weight
4.	D5823	Pile Height
5.	D5793	Backing Perforation Diameter and Spacing
6.	D1335	Tuft Bind (without infill)

7. D5304 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 every sixth 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.

1.10 CERTIFICATION OF THE BASE

A. The Synthetic Turf Surfacing Contractor shall furnish to the Engineer, prior to the synthetic turf installation, a written certification of the acceptability by the turf vendor of the prepared aggregate base for installation and warranty validation.

1.11 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, Owner’s Representative, the Engineer and their sub-consultants 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.

1.12 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. Soccer
2. Football
3. Rugby

4. Ultimate Frisbee
5. Lacrosse
6. Marching band
7. Physical exercises
8. Physical education activities
9. Pneumatic rubber-tired maintenance and service vehicles
10. Pedestrian traffic and other similar uses
11. Ceremonial and Entertainment Events with portable floor coverings

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 Oregon Institute of Technology. Warranty period shall be a minimum of eight years from date of acceptance of the installed system by the Owner.

C. Furnish a pre-paid insurance policy in support of the warranty required for the field, for the entire warranty period from an A-rated domestic insurance carrier. The warranty shall be secured to the Owner with an insurance policy of not less than $300,000 per claim and an aggregate of $5,000,000.

1.13 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, 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 green, 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 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 shall have a maximum "G" value according to ASTM F1936-10 and Procedure A, ASTM F355, not to exceed 120G's at any location upon installation and shall not exceed 160G's throughout life of the warranty period. This shall be determined by conducting dynamic cushioning tests at the locations designated in ASTM F1936-10 and at corners of the soccer penalty boxes at opposite sides of the field. Any increase from 120G's to allowable 160G'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 metal cleats, spikes, or similar projections other than conventional baseball, football, soccer, or rugby shoes having cleats of not more than 1/2" in length, and other conventional running track shoes having spikes of not more than 1/4" 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 10 days of receipt of notice or does not submit, schedule and execute corrective work within 30 days, 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 Oregon and shall be governed by the laws thereof.

1.14 WARRANTY TESTING

A. The turf for the soccer field is to 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 year, second year, fourth year, sixth year, 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

2.01 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.

2.02 DYNAMIC CUSHIONING REQUIREMENTS

A. The dynamic cushioning of the system shall not exceed a maximum value of 120 G's per ASTM, F1936-10 and ASTM, F355, procedure A at any location upon installation.

2.03 PERMEABILITY REQUIREMENTS OF THE SYNTHETIC TURF SYSTEM

A. The system including the synthetic turf, infill materials, and supplemental pad (if applicable) shall drain vertically a minimum of 20 inches precipitation per hour without visible surface ponding.

2.04 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.

2.05 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.

2.06 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 fields as shown in the details or adhered to the base.

C. All turf seams shall be constructed per paragraph 3.04 of this section.

D. All seams shall include at least on fabric roll selvage edge; no transverse or head seams will be permitted.

2.07 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. 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 2.07 of this section. Perforations shall be drilled from the surface after the adhesive has set.

2.08 LINES AND MARKINGS

A. A complete field lining, marking and field boundary system with team area limits, etc., shall be provided with the initial installation of the surfacing system. Layouts shall be accurately surveyed and marked prior to installation.

B. All lines and field markings shall be tufted in or installed as synthetic turf inlays. Wherever possible, lines shall be tufted into the turf panels in lieu of 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 shall guarantee the synthetic turf is adaptable to painted lines in the event painting is utilized in the future.

D. 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.

1. Soccer: The following markings shall be 4” total width, white.

   a. Playing field boundaries
   b. Mid-field line
   c. Goal and penalty boxes
   d. Center circle & penalty arc
   e. Corner kick arc
   F. Corner kick hash marks

   A single center kick-off spot shall be provided, 9" diameter white.

2. Center Logo: The Center Logo shall pre-assembled off-site to approved artwork. Colors shall be as pre-approved during the submittal process, generally dark blue, yellow/gold, and white.

2.09 MINIMUM SPECIFICATIONS FOR SYNTHETIC TURF SYSTEM MATERIALS

A. The minimum material specification requirements 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 shall be green. Additional turf colors shall be as called for in Section 2.08 for the lines and markings. The fiber used for the lines and markings shall be of the same composition in all respects except for color as that used for the green field areas.

2.10 MINIMUM TURF MATERIAL SPECIFICATIONS

A. Pile fiber shall be parallel slit film 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.

1. The fibrillation shall be parallel with long slits. The parallel fibrillated 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.

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. Fiber Wear Simulation: Fiber shall exhibit no splitting or appreciable degradation after a minimum of 12,000 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.

D. Fabric Composition: Shall consist of 100% polyethylene 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.

E. The following system properties shall be provided uniformly throughout. The Contractor shall select and propose one of two system options:

1. HeavY Tufted Product, Lightweight Infill System:

Item	ASTM	Property	Minimum Specifications

a.	D418	Pile Weight	42 oz/sq yard
b.	D418	Primary Backing	7 oz/sq yard
c.	D418	Back Coating	18 oz/sq yard
d.	D418	Total Weight	67 oz/sq yard
e.	D418	Pile Height	2.20 – 2.30”
f.	D1335	Tuft Bind (without infill)	8 lbs.
g.	D1682	Grab/Tear Strength	200 lbs.
h.	D2859	Pill Burn Test	Pass
i.	Minimum	Total Infill	3.5lb/sf

2. Light Tufted Product, Heavy Infill System:

Item	ASTM	Property	Minimum Specifications
a.	D418	Pile Weight	33 oz/sq yard
b.	D418	Primary Backing	7 oz/sq yard
c.	D418	Back Coating	16 oz/sq yard
d.	D418	Total Weight	56 oz/sq yard
e.	D418	Pile Height	2.20 – 2.30”
f.	D1335	Tuft Bind (without infill)	8 lbs.
g.	D1682	Grab/Tear Strength	200 lbs.
h.	D2859	Pill Burn Test	Pass
i.	Minimum	Total Infill	6lb/sf

2.11 INFILL MATERIALS

A. The synthetic turf shall utilize a combination of sand and rubber infill materials. The rubber may be ambient rubber or cryogenic rubber.

B. The minimum sand content shall be 20% by volume and the maximum sand content shall not exceed 35% by volume. The exact in-fill material ratio may be altered to provide strength, shock attenuation, and to provide permeability by the vendor/installer as approved by the Field Consultant.

C. 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.

D. 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

E. 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%

F. Rubber shall be SBR free of any tire cord, steel materials, and kevlar. Only automotive or truck tires manufactured in North America within the last 10 years may be used for the SBR infill material. The infill material gradation shall meet the following size requirements:

2.0 – 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%

G. SBR rubber shall be certified to have less than 50 ppm or less of lead from both the rubber supplier and the turf vendor.

H. The application rate shall provide a total minimum weight of 2.0 lbs of rubber infill material per square foot of the turf area.

I. Maximum exposed fiber height shall be ¾” after infill placement, settling, and compaction.

2.12 MAINTENANCE EQUIPMENT

A. Primary Grooming equipment to be a static, tow-behind unit with continuous stiff nylon bristles extending to no less than 9’ in effective width for leveling infill and grooming fiber, and shall have a manually adjustable set of steel tines for de-compaction.

Manufacturers Reference:
GreensGroomer “920SDE”
FieldTurf “GroomRight”
SMG “DC1600”

B. Debris removal – Contractor shall provide towable lawn sweeper units with perforated basket base suitable for synthetic turf use in removal of litter and leaf debris. Total effective width of operation (per pass) to be no less than 7’ when towed in combination.

PART 3 - EXECUTION

3.01 CERTIFICATION OF FIELD BASE INSTALLATION

A. The Contractor or the Contractor's subcontractor shall perform an inspection of the prepared permeable aggregate base, 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 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, Engineer and Owner. Failure of the turf installer to immediately inform the Contractor, Engineer, and Owner 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.

3.02 INSPECTION OF MATERIALS

A. Prior to installation, and immediately upon delivery of synthetic turf system materials to the project site, the 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.

3.03 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 will be required.

3.04 SYNTHETIC TURF INSTALLATION

A. Perform all work in strict accordance to the drawings, specifications, 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. No head seams shall be permitted inside of the Football field boundaries. A single head seam will be permitted in the quarter turned panels outside of the soccer sidelines.

H. Rolls that do not lay evenly and with full dimension width will be rejected. No fitted pieces will be allowed to true alignment. No fitted pieces or cutting within the panels will be allowed to provide true alignment or to eliminate wrinkles.

I. 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.

J. Seams (Joint)

1. All turf panel seams within the field grid and the ¼ turn sideline panels shall be sewn with high strength cord.
2. All other seams shall be cemented with a supplemental backing material.
3. The seam gaps 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.

K. Turf Edges: Turf edges to be as shown on the edge fastening detail and nailed at the perimeter.

3.05 SYNTHETIC TURF EDGE ANCHOR INSTALLATION

A. Anchor synthetic turf along the sides and ends to existing edge anchor as shown in the details.

3.06 LINING / MARKING INSTALLATION

A. Complete field markings shall be provided with the initial installation of the surfacing system. Provide lines and markings in conformance with these specifications. 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 2.07 after gluing and prior to installation of the infill material.

C. To the greatest extent practical, lines and markings shall be installed without compromising the primary backing.

3.07 IN-FILL 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 will be available from quick coupling valves located around the field. The Synthetic Turf Contractor shall utilize the field cooling 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.

3.08 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 field 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 Substantial Completion.

3.09 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 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 Owner’s Representative.

B. Infill Materials: Provide four (4) 33 gallon rubber trash containers with lids of each infill material used.

C. Turf for Future Repairs: Material may be roll ends or cutoffs; however, each piece of fabric shall be at least 5’ x 10’. At least one green turf piece shall be at least 10’ x 15’. The following are minimum areas for the extra synthetic turf materials to be provided by the Contractor to the Owner:

Minimum Quantities:

1.	Green Turf:	1000 sf
2.	White Turf:	100 lf of 4” wide lines
3.	Logo Dark Blue Turf	10 lf of 4” wide lines
4.	Logo Yellow/Gold Turf	10 lf of 4” wide lines

3.11 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. Re-level infill materials. Import and place /top dress new infill material matching original infill materials as needed to establish original infill depth, with ¾" of exposed fiber.

B. All maintenance activities shall be as approved and directed by the original manufacturer.

C. 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

PART 1 – GENERAL

1.01 SCOPE OF WORK

A. Furnish and install jump pit sand.

B. Furnish and install reclaimed or imported cinders for shot put landing areas. (Select existing track cinders may be utilized for this purpose).

1.02 SUBMITTALS

A. The Contractor shall submit to the Engineer for approval a current sieve analysis and the source of the jump pit sand and cinder materials 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.

1.03 RELATED WORK IN OTHER SECTIONS

31 22 16 Subgrade Establishment
32 13 00 Sitework Concrete

1.04 TESTING

A. The Owner will be performing testing of materials delivered to the job site for the purpose of verifying compliance with the contract documents. The Owner's testing is for this purpose only and not for construction quality control by the Contractor.

B. The Contractor shall coordinate directly with the Owner’s testing firm relative to the delivery schedules of the imported sand materials. Sampling should be scheduled daily during the delivery of the materials.

C. The Contractor shall provide testing and surveillance as required to assure materials and work fully comply with contract requirements.

D. 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.

PART 2 – MATERIALS

2.01 JUMP PIT SAND

A. The material shall be clean, natural sand, dry, conforming to ASTM "Fine Aggregate". The sand to meet the following gradation:

Sieve Size	% Passing
No. 4	100
No. 8	95 - 100
No. 16	75 - 85
No. 30	40 - 50
No. 50	5 - 15
No. 100	0 - 4
No. 200 (wet sieve)	0 – 2

B. Sand shall be sound, durable, mineral aggregate with a demonstrated Moh's hardness greater than 6.5.

C. Sand shall be clean, free of dust, dirt, and debris, or foreign material of any kind.

2.02 CINDER SURFACING

A. Material to consist of a cinder base material processed by crushing, screening and mixing. Cinders to be blended and contain the following:

1.	Silica SiO2	45% - 50%
2.	Alumina A12O3	15% - 30%
3.	Ferric Oxide Fe2O3	5% - 15%
4.	Calcium Oxide CaO	1% - 5%
5.	Magnesium Oxide MgO	1% - 5%

B. Color must be uniformly tan, brown, or reddish for all cinder material furnished. Deviations in consistency will result in rejection of material.

C. The surfacing cinders shall be produced to specified particle sizes by the process of crushing. The graduation must meet the following sieve analysis:

Sieve Size	Percent Passing
¼"	100
No. 4	75 – 90
No. 8	55 – 70
No. 16	40 – 60
No. 30	25 – 50
No. 50	15 – 30
No. 100	10 - 20
No. 200	0 – 12

D. Bulk density of finish material to be 65 to 75 pounds per cubic foot. Material shall be able to pass a Los Angeles ASRM C-131 abrasion test with not more than 50% loss after 500 revolutions. Present a sample for approval before application and make lab test data available for examination if requested to do so.

PART 3 – EXECUTION

3.01 JUMP PIT SAND PLACEMENT

A. Place materials so as to establish a minimum of finish settled depth, as specified on the drawings, and fine grade entire surface to final elevations shown; water settle and roll to achieve consolidated settled depth. Add material as necessary to achieve finish grade. Protect concrete curbing and adjacent surfaces during the sand installation.

B. Apply moisture as necessary to settle for stabilization.

C. Finish grade tolerance is +0.10' and -0.00' to concrete curb. Constant relative surface slope is to be maintained where indicated.

3.02 CINDER PLACEMENT

A. Spread uniformly over area. Apply moisture and roll to stabilize depth. Add material as necessary to achieve specified depth. Anticipated shrinkage, bulk-to-stabilized, is approximately 35%.

B. The surface shall be mechanically rolled and consolidated to finish grade. Add additional water as necessary during rolling.

C. The cinder areas shall be graded and compacted to provide a stable and uniform surface. No “birdbaths” or ponding of surface water will be permitted.

D. The cinder material shall be spread and dressed to provide a finished grade flush with the curbing with a constant cross slope after compaction. Finish elevation below outside curbing to be +0.10’, –0.00’.

E. If there is any settlement of the finished grade of the cinder area after construction through the end of the project warranty period, the Contractor shall be responsible for top dressing of depressions with additional specified cinder material and compacting at no cost to the Owner.

END OF SECTION 32 18 25

PART 1 – GENERAL

1.01 SCOPE OF WORK

A. Provide chain link fences and gates as complete units controlled by a single source including necessary erection accessories, fittings, and fastenings completely installed and functioning.

B. Specification is to be used for both new work and replacement of all damaged existing fencing.

C. Fencing at or immediately adjacent to the Track and/or Field Events including all chain link posts, rails, and all connection brackets, caps, and braces shall include a heavy galvanized finish. Connecting hardware including nuts, bolts, and washers shall be galvanized. All chain link fabric shall include a heavy, hot-dipped galvanized coating.

1.02 RELATED WORK

31 00 00 Earthwork
32 13 00 Sitework Concrete

1.03 SUBMITTALS

A. Product Data: The Contractor shall submit four (4) copies of the manufacturer's technical data and installation instructions for metal fencing and gates.

B. Shop Drawings: The Contractor shall submit shop drawings showing elevations and details of distinct fencing applications and assemblies.

1.04 MATERIALS STANDARDS

A. Materials standards shall adhere to Standards for Galvanized Steel Chain Link Fence Fabric, Standards for Industrial Steel Specifications for Fence Posts and Accessories, Standards for chain Link Fence Installation; as published by Chain Link Fence Manufacturer's Institute (CLFMI); American National Standard Institute (ANSI).

1. Standards for Galvanized Steel Chainlink Fence Fabric
2. Standards for Industrial Steel Specifications for Fence Posts and Accessories
3. Standards for Chainlink Fence Installation as published by Chainlink Fence Manufacturer's Institute (CLFMI)
4. American National Standard Institute (ANSI).

1.05 WELDING

A. All welding shall be completed by a certified welder.

PART 2 - MATERIALS

2.01 GENERAL

A. Dimensions shown for pipe are outside dimensions.

2.02 STEEL FENCING

A. Fabric to be No 9 ga. (0.148) finished size steel wires, 2” mesh with knuckle both top and bottom.

B. Furnish one-piece fabric widths for fencing up to 10' high.

C. Fabric finish: The fencing shall include a heavy hot-dipped galvanized finish.

D. Framework: Steel with heavy galvanized finish.

E. Hardware and Accessories: Steel with galvanized finish.

2.03 FRAMING AND ACCESSORIES

A. End, Corner and Pull Posts: All posts shall be standard steel pipe, straight, true and un-spliced. Minimum sizes and weights as follows:

B. 4’ height, 2.875" o.d. steel pipe, 5.79 lbs. per l.f.

C. 6’ height, 2.875" o.d. steel pipe, 5.79 lbs. per l.f.

D. 8’ fabric height, 4.0" o.d. steel pipe, 9.11 lbs. per l.f.

E. Gate Posts: Furnish posts for supporting single gate leaf, or one leaf of a double-gate installation, for nominal gate widths as follows:

Leaf Width	Gate Post*	Lbs/L.F.
5' & 10’ (Clear)	4.500" o.d. pipe	9.11

*Minimum Post Size – defer to post size for gates in fences over 10’ ht.

F. Not Used

G. Line Posts: All posts shall be standard steel pipe, straight, true and up to 20 ft. length to be un-spliced. Posts scheduled as over typical manufactured length including foundation depth shall include continuous, full filleted welds made by a certified welder. Minimum sizes and weights as follows:

1. Space 10' o.c. maximum, unless otherwise indicated.
2. 4’ and 6’fabric height, 2.375" o.d. steel pipe, 3.65 lbs. per l.f.
3. 8’ fabric height, 2.875” o.d. steel pipe, 5.79 lbs. per l.f.

H. Top, Bottom and Intermediate Rails: Manufacturer's longest lengths, with expansion type couplings, approximately 6" long, for each joint. Provide means for attaching top rail securely to each gate corner, pull and end post. Rails shall be 1.66 o.d. pipe, 2.27 lbs. per l.f.

I. Post Brace Assembly: Manufacturer's standard adjustable brace at end and gate posts and at both sides of corner and pull posts, with horizontal brace located at mid-height of fabric. Use same material as top rail for brace, and truss to line posts with 0.375" diameter rod and adjustable tightener.

J. Post Tops: Weather-tight closure cap (for tubular posts), one cap for each post. Furnish caps with openings to permit passage of top rail.

K. Stretcher Bars: One-piece lengths equal to full height of fabric, with minimum cross-section of 3/15" x 3/4". Provide one stretcher bar for each gate and end post, and two for each corner and pull post.

L. Stretcher Bar Bands: Space not over 15" o.c., to secure stretcher bars to end, corner, pull, and gate-posts. Provide offset type bar bands at backstop posts so that fabric is aligned with inside edge of posts.

M. Tension Wire: Shall be marcelled (spiraled or crimped) #7 gauge, 0.177 inches in diameter, conforming to ASTM A-824.

N. Wire Ties: For tying fabric to line posts, use wire ties spaced 18" o.c. For tying fabric to rails and braces, use wire ties spaced maximum 18" o.c.

2.04 GATES

A. Gate Posts: Furnish 4.0" o.d. posts, 9.11 lbs/lf, for supporting a single gate leaf of nominal 5', 7’, or 10' lengths.

B. Fabricate swing gate perimeter frames of minimum 1-5/8" o.d. pipe. Metal and finish to match framework. Provide horizontal and vertical members to ensure proper gate operation and for attachment of fabric, hardware and accessories.

C. Assemble gate frames by welding or with special fittings and rivets, for rigid connections. Use same fabric as for fence, unless otherwise indicated. Install fabric with stretcher bars at vertical and top and bottom edges. Attach stretchers to gate frames at not more than 15" o. c. Attach hardware to provide security against removal or breakage. Install diagonal cross bracing consisting of 3/8" diameter adjustable length truss rods on gates to ensure frame rigidity without sag or twist, as required.

2.05 GATE HARDWARE

A. Furnish the following hardware and accessories for each gate.

1. Hinges: Size and material to suit gate size, non-lift-off type, offset to permit 180° gate opening.
2. Latch: Forked type or plunger-bar type to permit operation from either side of gate, with padlock eye as integral part of latch. Latches shall be Fulcrum type or approved equal for swing gates. Latches shall be Rollo Latch for rolling gates.
3. Rolling Gates: Solid rubber Wheel assembly with galvanized core and hub, galvanized roller guides, and galvanized roller guide rails.
4. Gate-stops: Provide gate stops at open and closed gate positions, for double leaf gates and at open position for single leaf gates, except for batting cage gates. Gate stops shall be mushroom type of flush plate with anchors. Set stop in concrete, to engage drop rod or plunger bar.
5. Drop rods or plunger bars shall have locking capability.

PART 3 – INSTALLATION

3.01 CHAIN LINK FENCE INSTALLATION

A. Excavation: Drill holes for posts of diameters shown in firm, undisturbed or compacted soil. Excavate holes to minimum diameter and depth as shown on the drawings. Excavate hole depths approximately 4" lower than post bottom. Refer to drawings for depth.

B. Setting Posts:

1. Center and align posts in holes 4" above bottom of excavation. Place concrete around posts and vibrate or tamp for consolidation. Check each post for vertical and top alignment, and hold in position during placement and finishing operations. No concrete or concrete grout is to extend beyond limits of footing hole.
2. Foul Pole shall be set as for a typical corner or terminal post. Survey location of Foul Pole such that the pole itself is in play; a line extending from the apex

of home plate passing through the foul territory edge of the base should align with the foul territory side of the foul pole.

C. Top Rails: Run rail continuously through post caps, bending to radius for curved runs. Provide expansion couplings as recommended by fencing manufacturer.

D. Brace Assemblies: Install braces so posts are plumb when diagonal rod is under proper tension.

E. Fabric: Leave approximately 1" between finish grade and bottom selvage. Fabric to be installed so that the baseballs cannot roll underneath the fabric. Pull fabric taut and tie to posts and rails. Install fabric on the field side of fence, and anchor to framework so that fabric remains in tension after pulling force is released.

F. Stretcher Bars: Thread through or clamp to fabric 4" o.c., and secure to posts with metal bands spaced 14" o.c. maximum. Align off set type stretcher bar bands to allow fabric to align with field side of posts. A maximum of ½" displacement will be allowed.

G. Tension Wire: Shall be stretched from end to end of each stretch of fence where indicated on drawings and details. The tension wire shall be taut and free of sag.

H. Tie Wires: Use U-shaped wire, conforming to diameter of pipe to which attached, clasping pipe and fabric firmly with ends twisted at least two full turns. Bend wire to minimize hazard to persons or clothing.

I. Fasteners: Install nuts for tension bands and hardware bolts on side of fence opposite fabric side. Peen ends of bolts or score threads to prevent removal of nuts.

3.02 GATE INSTALLATION

A. Install gates plumb, level, and secure for full opening without interference. The clear opening shall be equal to or larger than the size specified on the drawings. Install ground-set items in concrete for anchorage, as recommended by fence and turnstile manufacturer. Adjust hardware for smooth operation and lubricate where necessary.

END OF SECTION 32 31 13

PART 1 – GENERAL

1.01 SCOPE OF WORK

A. Field locate existing water supply main shut-off to isolate the work area. Maintain scheduled irrigation to all lawn and landscape areas not scheduled for work that are affected by any utility shut-down. Maximum down-time 24 hours in any 72 hour period.

B. Install isolation gate valves, backflow prevention devices, and pressure compensating valves as shown and described.

C. Furnish and install a new field cooling and washwater, landscape irrigation systems, and drip irrigation for infield areas, natural turf areas, and landscape areas. Work to include layout, trenching, valves, pipe installations, tracer wire, backfill, quick coupling valves, riser assemblies, sprinkler heads, controllers, and related items.

1.02 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, Oregon State Chapter (latest edition).
2. American Water Works Association
3. American Society for Testing and Materials
4. National Electrical Code
5. Local water district standards and regulations
6. Oregon Institute of Technology Standard Irrigation Specifications

1.03 RELATED WORK IN OTHER SECTIONS

31 00 00	Earthwork
31 22 16	Subgrade Establishment
32 12 16	Asphaltic Concrete Paving
32 12 18	Track Asphalt Paving
32 13 00	Sitework Concrete
32 18 23	Rubberized Surfacing
32 18 24	Infilled Synthetic Turf
32 92 19	Landscape Restoration

1.04 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 will provide reference points.

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.

1.05 SUBMITTALS

A. Product Information: The Contractor shall submit copies of catalog information of all equipment for approval.

B. As-Built Drawings: Contractor shall furnish accurate as-built drawings of the complete field cooling, irrigation and washwater systems. The drawing shall be to scale. Drawings shall show installed manufacturer's name and catalog number. The as-built drawing shall be turned over to the Engineer a minimum of one week prior to the professional review (punchlist) of the project.

PART 2 – PRODUCTS

2.01 LANDSCAPE IRRIGATION PVC PIPING

A. Pipe for the irrigation main shall be Schedule 40 PVC and shall conform to ASTM D2241, SDR 21 Standard Specifications.

B. Plastic pipe shall be extruded from 100% virgin Polyvinyl chloride (PVC) Pipe to conform to ASTM D2241, F477, D1784 Cell Class 12454-A,B.

C. Pipe Sizing: Schedule 40 PVC

Size	O.D.(In)	Min. Wall (In)
2 ½”	2.875	0.203
2”	2.375	0.154
1 ½”	1.900	0.145
1 ¼”	1.660	0.140

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.

2.02 FIELD COOLING & WASHWATER SYSTEM PVC IRRIGATION PIPING

A. Pipe for all field cooling and washwater systems shall be IPS PVC pipe, gasketed connections, with HARCO or approved equal restraint at all approved manufacturer recommended joints including bends, valves, tees, and terminations. Refer to HARCO specifications for appropriate application requirements by pipe size.

2.02 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.

G. Sprinkler Head Risers

1. Field Cooling System Hunter STK-2 to utilize prefabricated ST2008VA 5-way heavy duty swing joint.
2. Landscape Turf Rotors (RainBird Falcon Series) to utilize prefabricated triple swing joint assembly, Lasco, Rainbird, or approved equal.
3. Landscape Turf Spray Heads to utilize HDPE segmental tubing riser.

2.03 JOINING MATERIALS

A. All joining materials used will be manufactured by I.P.S. 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-

711 heavy-bodied gray cement or approved equal.

E. Field Cooling System Piping to be joined using gasketed pipe joints and HARCO epoxy-coated malleable iron restraints as recommended by the manufacturers technical specifications and installation instructions.

2.04 MANUAL ISOLATION VALVES

A. 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 up to 2” shall utilize a hand-wheel actuator, larger than 2” a square-top actuator with “Tee” type key shall be provided.

6. Two 42” valve operating keys are to be furnished.

B. Ball Valves

1. SPEARS “True Union” PVC Ball Valve with integral Schedule 80 Union and slip connection.

2.05 QUICK COUPLING VALVES

A. Independent Quick Coupling Valves to be Hunter HQ5RC assembly.

B. Quick Coupler Valves installed with Field Cooling System STK-2 assembly to be Hunter HQ5RC.

2.06 VALVE BOXES

A. Valve boxes for landscape application shall be Carson 1419 valve box with locking lid.

B. Field Cooling equipment to be installed in Hunter #ST263026B Composite Box as

supplied with the STK-2 Synthetic Turf Field Cooling assembly.

C. The box shall include pipe clamps to anchor the quick coupling valve and prevent rotation or excessive vibration during use.

2.07 SLEEVING

A. All pipe and wire sleeves shall be schedule 40 PVC sizes 4" – 6". Valve control wires shall be installed in a separate sleeve. All sleeving shall be installed 24 inches below finish grade.

2.08 MARKING TAGS

A. All valves, wires, and 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 and the as-built record drawing document. Tags shall be Blue, with black or White markings.

2.09 DETECTABLE WARNING TAPE

A. Magnetic Pipe Locating Tape: Polyethylene or polyester tape, 4" width, purple in color with metallic interlayer that is detectable from the ground surface by a metal detector. Brady Identoline Underground Warning Tape or equal.

2.10 IRRIGATION SPRINKLER HEADS

A. Field Cooling System to be Hunter STG-900 Rotor and rubber cover, STK-2 with integrated Quick Coupling Valve and synthetic surface-specific composite box.

B. Large Area Turf Rotors to be RainBird Falcon 6504 series stainless steel riser non-potable high speed turf rotor, nozzled as shown and described.

C. Small Area Turf Sprinkler Heads to be RainBird 1800-series Pop-Up Spray Body, SAM-PRS series, Non-Potable, 4" riser, nozzled as shown and described.

D. Drip Irrigation to be delivered by RainBird drip line emitters as shown and described.

2.11 AUTOMATIC IRRIGATION VALVES

A. Field Cooling System Valves to be Hunter ICV-151G as provided with the STK-2 system kit.

B. Large Lawn Zones / Landscape Irrigation System Valves to be RainBird PEB, 1.5".

C. Small spray zones to be RainBird PEB-PRS-D, 1, and 1.5”.

D. Drip Irrigation Zone Valves to be RainBird, as supplied with XCZ-PRB-100-COMM Commercial Drip Control Assembly.

2.12 AUTOMATIC IRRIGATION CONTROLLERS

E. Provide RainBird ESP-series Controllers, stainless steel, locking, pedestal-type controller cabinet.

F. Controller “A” assigned to Field Cooling System to be ESP-12SAT-2S-LS.

G. Controller “B” assigned to Landscape Irrigation Systems to be ESP-24SAT-2S-LS.

PART 3 – EXECUTION

3.01 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 subsurface drainage system.

C. Trenches, where applicable, shall be excavated to a depth to provide 12" cover minimum below finish subgrade over piping.

D. Install metallic detectable tape 6” above all main line piping.

3.02 INSTALLATION SCHEDULING

A. The irrigation system, with the exception of the quick-coupling valves and the sprinkler heads, shall be in place with the trenches backfilled and compacted with the subgrade fully restored prior to the installation of the imported topsoil materials. Irrigation system shall be completely operational prior to installation of

trees, shrubs, ground covers or sod.

3.03 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. Procedure for solvent welds:

1. Wipe off all dust, dirt and moisture from the surface to be welded.
2. With a non-synthetic bristle brush in the following sequence, apply an even coating of cement to the outside of the pipe. Then apply solvent to the inside of the fitting, and then reapply a light coating of cement to the outside of the pipe and inside of the fitting, making certain that coated area on the pipe is equal to the depth of the fitting socket.
3. Insert pipe quickly into the fitting. Hold joint for a minimum of 15 seconds so that pipe does not recede from fitting. Clean off any bead of excess cement that appears at the outer shoulder of the fitting.
4. Allow at least 15 minutes set up (curing) time for each welded joint before moving or handling.
5. Check all fittings for correct position before solvent weld sets.

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 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.

H. Curing: Prior to introducing water into the piping, a minimum of two hours curing time for the plastic joint connections shall transpire.

I. High-pressure Field Cooling System Piping shall be installed in a manner consistent with HARCO specifications.

3.04 QUICK COUPLING VALVE (QCV) & BOX 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 between 1" to 1-1/2" below inside surface of box lid.

C. Quick coupling valve box shall be installed with their respective enclosure consistent with the approved manufacturers printed installation instructions. Cover of valve box including rubberized or synthetic turf surfacing cover shall meet and match adjacent finish surface condition. Box shall be adjusted so as to not impact existing running lanes of track.

D. Valves to be housed in coupling as shown in the details, for installation adjacent to or within concrete turf anchor.

3.05 BACKFILLING

A. Sand or select soil backfill material shall be placed and compacted around and under all 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.

3.06 TESTING

A. Before testing, all piping is to be thoroughly flushed.

B. Prior to acceptance of work, all pressure piping and fittings shall be subjected to a hydrostatic pressure test of 150 psi for no less than 30 minutes. 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. Including temporary above ground piping to connect a riser from each lateral so that the entire system can be tested simultaneously.

C. Blocking shall be in place at the time of testing. Tests shall be made with valves and risers exposed for inspection. Contractor shall provide such temporary valves, pressurization equipment, and metering devices as necessary to accommodate the sequence of work and to the satisfaction of the engineer.

D. Allowable leakage in gallons per 1,000 lineal feet of pipe is as follows:

2-1/2" and 2"	2.0 gallons per hour
1-1/2" and 1"	1.5 gallons per hour

E. Allowable Pressure Loss for a typical installation test;

First 5 Minutes, not more than 3 psi

Subsequent 25 minutes, not more than 2 psi
Total Loss from initial 150PSI in 30 minutes not to exceed 5 psi

J. The Contractor shall perform all tests to satisfactory results prior to requesting test approval by the Engineer.

F. An operational test of the completed system shall be scheduled with the Engineer.

G. The Contractor shall perform all tests to satisfactory results prior to requesting test approval by the Engineer.

3.07 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.

3.08 RECORD DRAWINGS

A. The contractor shall maintain a daily record of all pipe and equipment installed that varies from the original design, as approved by Owner’s Representative.

B. All valve boxes and splice boxes shall be dimensioned from two permanent structures upon completion of project.

END OF SECTION 32 84 23

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. Restoration including soil amendment, fertilization, and hydroseeding of all disturbance associated with the work including irrigated and unirrigated landscape areas. Three distinct areas require restoration:

1. Irrigated Landscape Lawns
2. Throws Venue Landing Areas
3. Throws Venue Grading Transition Areas

B. BASE BID

1. Irrigated Landscape Lawns: Provide 2” lift reclaimed topsoil soil and fertilizer amendment incorporated into subgrade, fine grading, hydroseeding, and establishment.
2. Throws Venue Landing Areas: Provide 2” lift reclaimed topsoil soil and fertilizer amendment incorporated into subgrade, fine grading, hydroseeding, and establishment.
3. Throws Venue Grading Transition Areas: Fine grading and hydroseeding only.

C. ALTERNATE BID Provide improved soil amendment including 2” reclaimed and 2” manufactured topsoil and fertilizer incorporated into subgrade, fine grading, hydroseeding, and establishment of all disturbed landscape areas.

1. Irrigated Landscape Lawns: Provide improved soil amendment including 2” reclaimed and 2” manufactured topsoil and fertilizer incorporated into subgrade, fine grading, hydroseeding, and establishment.
2. Irrigated Throws Venue Landing Areas: Provide improved soil amendment including 2” reclaimed and 2” manufactured topsoil and fertilizer incorporated into subgrade, fine grading, hydroseeding, and establishment.
3. Throws Venue Grading Transition Areas: Provide 2” lift reclaimed topsoil soil and fertilizer amendment incorporated into subgrade, fine grading, hydroseeding, and establishment.

D. COMPLIANCE

1. All materials incorporated into the work shall comply with Oregon Revised Statutes (ORS), Chapter 633.
2. All Fertilizers, Agricultural Minerals, and Limes shall comply with ORS 603-059-0020.

1.02 RELATED WORK

31 00 00 Earthwork
32 84 23 Washwater and Irrigation

1.03 SUBMITTALS

A. Product Data: The Contractor shall submit four (4) copies of analysis and technical data for all fertilizers and amendments.

B. Seed Varieties: The Contractor shall submit seed supplier and seed varieties to the Engineer for approval.

C. Soil Testing Required: The Contractor shall submit for laboratory testing the following to determine suitability for growing grass and recommended rates of application for nutrients and other amendments. Submit laboratory results to the Engineer for final determination of rate of amendment (rates specified herein are Basis of Bid values, subject to compensable change as directed). Testing is to be provided at no additional charge to the Owner.

1. BASE BID: Reclaimed Topsoil
2. ALTERNATE BID: Both Reclaimed Topsoil and Manufactured Topsoil
3. Testing shall include the folling minimum qualitative data;
   a. Particle Gradation including #270 wet screen
   b. Total Organic Content, LOI (Loss on Ignition)
   c. Total Nitrogen, by type
   d. Total N-P-K
   e. Micronutirent analysis
   f. pH

PART 2 - MATERIALS

2.01 SOIL AMENDMENT

A. Top Soil

1. BASE BID: RECLAIMED TOPSOIL. Utilize reclaimed top soil from the Stadium Track Infield, specifically that volume of material found below the top 3” sod layer and above the compacted subgrade (approximately 5”, refer to Section 31 0000 Earthwork). Material shall be excavated so that no surficial organic material larger than 1” in any dimension, or any subgrade material, is present.

2. ALTERNATE BID: MANUFACTURED TOPSOIL. As part of the Alternate Bid to

improve the quality of the throws venue landing area specifically, in addition to the reclaimed material described above, an additional volume of manufactured topsoil will be required. This material shall include naturally occurring mineral soil 30-40%, sand 40-50%, and well-composted organic material 20-30%, as follows;

a. Soil Component generally to be mineral soil meeting the following gradation:

Sieve Size	% Passing
No. 8	100
No. 16	85 - 100
No. 30	50 - 80
No. 50	30 - 50
No. 100	30 - 50
No. 200 (wet sieve)	<20
No. 270 (wet sieve)	<10

b. Sand Component to be sound, durable, poorly graded mineral aggregate meeting the following particle gradation:

Sieve Size	% Passing
No. 4	100
No. 8	95 - 100
No. 16	75 - 85
No. 30	40 - 50
No. 50	5 - 15
No. 100	0 - 4
No. 200 (wet sieve)	0 – 2

c. The Compost (Organic Amendment) Component shall consist of 100% recycled yard waste materials or other organic waste materials that have been sorted, ground up, aerated and aged and shall be fully composted, stable and mature (non-aerobic). The composting process shall be for at least six months time and the organic amendment shall have a uniform dark, soil-like appearance. In addition, the compost shall have the following physical characteristics:

   i. Shall have Carbon to Nitrogen ration of between 20:1 and 40:1. If C/N ratio is greater than 40:1, a lab recommended rate of Nitroform (38-0-0), be followed at the time of soil preparation.
   ii. Shall be certified by the Process to Further Reduce Pathogens (PFRP) guideline for hot composting as established by the United States Environmental Protection Agency.

iii. Shall be fully mature and stable before usage.
iv. Shall be screened using a sieve no finer than ¼-inch and no greater than ½-inch.

Based on dry weight of total organic amendment sample: Must comply with the following percent by weight passing:

Sieve Size	Percent (%) Passing
1/2" (12.7mm)	100
1/4" (6.35mm)	95-100
#4	90-95
#8	75-90
#20	45-70
#40	0-30

v. Shall have heavy metal concentrations below the USDA limits as follows:

Metal Type	Max. lb./ac.
ARSENIC	0.297
CADMIUM	0.079
COBALT	0.594
LEAD	1.981
MERCURY	0.019
MOLYBDENUM	0.079
NICKEL	0.713
SELENIUM	0.055
ZINC	7.329

B. Soil Nutrients

1. 10-20-20 Fertilizer and Minor Elements Analysis:
Total nitrogen: 10% (50% derived from sulphur-coated urea and 50% derived from ammonium phosphate).
Available phosphoric acid: 20% (approximately 63% derived from ammonium phosphate and approximately 37% derived from super phosphate).
Soluble potash : 20% (derived from sulphate of potash).

Sulphur	10%
Boron	0.06%
Copper	0.06%
Iron	0.40%
Manganese	0.15%
Molybdenum	0.003%
Zinc	0.14%

2. Minor elements to be derived from sulphate of potash, fritted trace elements and sulphur-coated urea.

3. Packaging to be in multi-wall bags with polycoated inner ply. All bags to be labeled with analysis and ingredients.
4. Lime, Dolomite: Material shall be retained on Taylor standard sieves: No. 20 retain 0%No. 100 retain 25%. Lime shall be packaged in waterproof bags clearly labeled as to weight, manufacturer and content.
5. Urea: Material to be urea formaldehyde granular. Analysis: 38-0-0

2.02 GRASS SEED

A. BASE BID: Grass seed mix for hydroseeding of all unirrigated restoration areas including Throws Venue grading transition areas and landing area shall include the following species mix (percentages are by weight).

Seed Type	Fraction	Seed/LB
Perennial Ryegrass	30-35%	250,000
Kentucky Bluegrass	30-35%	1,200,000
Creeping Red Fescue	30-35%	350,000
Maximum Inert	2%	
Weed Seed	<0.1%	

Application rate: 6 lbs./1000 square feet

B. BASE BID and ALTERNATE BID: Grass seed mix for hydroseeding of all Stadium Landscape Lawns and irrigated Throws Venue Landing Areas shall be 100% Kentucky Bluegrass, consisting of 3 varieties in approximately equal proportion (+/- 5%). Provide a list of no less than 6 available varieties for approval prior to blending.

Maximum Inert	2%
Weed Seed	<0.1%

Application rate: 3 lbs./1000 square feet

2.03 STARTER FERTILIZER

A. Starter Fertilizer shall be 9-14-8 with minor elements, meeting the following analysis (or approved alternative):

Nitrogen (N) 9%
3.80% Ammoniacal Nitrogen
4.20% Water Insoluble Nitrogen
1.00% Water Soluble from Organic Sources
Available Phosphoric Acid (P205) 14%

Soluble Potash (K20)	8%
Calcium (Ca)	10.7%
Magnesium (Mg)	0.1%
Sulfur (S)	4.9%
Iron (Fe)	0.4%
Boron (B)	0.06%
Copper (Cu)	0.06%
Manganese (Mn)	0.15%
Molybdenum (Mo)	0.003%
Zinc (Zn)	0.14%

Ingredients: Hynite, Organiform, Ammoniated Phosphate, Ammonium Sulfate, Sulfate of Potash, Muriate of Potash, Gypsum Plus, Calpril and Fritted Trace Elements.
Package:Material to be handled in multi-wall with polycoated inner ply and labeled with ingredients and analysis.

2.04 HYDROMULCH

A. Wood cellulose fiber mulch. Degradable, green dyed wood cellulose fiber of 100% recycled long fiber pulp, free from weeds or other foreign matter. suitable for hydro-mulching and seed germination.

PART 3 - EXECUTION

3.01 SOIL PREPARATION

A. BASE BID Throws Venue Grading Transition Areas

1. Scarify surfaces to receive hydroseeding to establish a homogenous, unifrm surface texture.
2. Remove all sticks, roots, and rocks larger than 1” in any dimension.
3. Establish soil density at approximately 90% of maximum dry density.

B. BASE BID Stadium Landscape Lawns and Throws Venue Landing Area

1. Establish a subgrade at designed finished grade minus 2”(0.167’), +/-0.10’.
2. Incorporate 2” of reclaimed topsoil uniformly to a finished depth of 4”.
3. Remove all sticks, rocks, roots, and debris over 1” in any dimension from the upper 4”.
4. Grade to designed slopes, provide positive drainage.
5. Establish soil density at approximately 90% of maximum dry density.

C. ALTERNATE BID Throws Venue Grading Transition Areas

1. Establish a subgrade at designed finished grade minus 2”(0.167’), +/-0.10’.
2. Incorporate 2” of reclaimed topsoil uniformly to a finished depth of 4”.
3. Remove all sticks, rocks, roots, and debris over 1” in any dimension from the upper 4”.
4. Grade to designed slopes, provide positive drainage.
5. Establish soil density at approximately 90% of maximum dry density.

D. ALTERNATE BID Stadium Landscape Lawns and Throws Venue Landing Area

1. Establish subgrade at designed finished grade minus 4” (0.33’), +/-0.10’.
2. Incorporate 2” of reclaimed topsoil and 2” of manufactured topsoil uniformly to a finished depth of 6”.
3. Remove all sticks, rocks, roots, and debris over 1” in any dimension from the upper 4”.
4. Grade to designed finished grades +/-0.05’ without isolated depressions, ponding, or standing water.
5. Establish soil density at approximately 90% of maximum dry density.

E. Following amendment and grading operations, remove stones over 1" in any dimension and sticks, roots, rubbish and other extraneous matter. Limit preparation to areas which will be seeded promptly after preparation.

F. Apply fertilizer and lime as specified or directed by broadcasting on the surface. Fertilizer and amendment shall be applied independent of the hydroseed operation. Mix with the soil by light raking or tilling to a depth of 2".

G. Grade to smooth even surface with loose, uniformly fine texture. Roll and rake and remove ridges and fill depressions, as required to meet finish grades. Limit fine grading to areas which can be seeded immediately after grading.

H. Moisten prepared lawn areas before seeding if soil is dry, water thoroughly, and allow surface moisture to absorb before planting. Stabilize landscape lawns and Throws landing areas by rolling with a roller having 100 pounds of weight per lineal foot or other means to achieve 90% of maximum dry density of the prepared seed bed soil. Restore lawn areas to specified condition if eroded or otherwise disturbed after fine grading and prior to planting.

3.02 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 the specified rate (see above, varies by species and conditions).

C. Apply wood fiber cellulose mulch at a minimum rate of 2,500 pounds per acre.

3.03 PROTECTION

All seeded areas are to have temporary barrier flagging to indicate limit of seeded area. Signs are to be placed indicating new seeding.

3.04 ESTABLISHMENT – IRRIGATED AREAS

The following protocols are to be utilized where automatic irrigation coverage is provided including Stadium Landscape Lawns and Throws Venue Landing Area (Alternate Bid).

A. Irrigation

1. The Contractor shall determine the necessary irrigation rate to germinate and induce growth as required.
2. After the first mowing, the irrigation system is to be set for one (early) day operation and one night-time opera¬tion each day, with adjustments for fertilization requirements. Cycle times will be determined by the Contractor using the provided precipitation rate data, as necessary to sustain turf growth.

B. Fertilization

After the grass has been mowed for the first time, fertilize 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 irrigation system for three minutes per zone (or one full rotation) to wash the material off of the leaves of the plants.

C. Mowing

When the grass plants reach a height of 1-3/4", the Con¬trac¬tor shall mow with reel-type mower (power take-off only, no friction-drive equipment) to a height of 1-1/2". 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 (see Acceptance below).

D. After establishment is complete any surface irregularities will be removed with rolling with a roller having 100 lbs. of weight per linear foot of width.

3.05 ESTABLISHMENT – UNIRRIGATED AREAS

The following protocols are to be used for seeded areas that do not have the benefit of automatic irrigation coverage, including grading transition areas and the Throws Landing Area (Base Bid).

A. Irrigation

The Contractor shall provide adequate temporary irrigation / soil moisture to germinate and establish hydroseeded areas without automatic irrigation coverage specified.

B. Fertilization – Throws Landing Area only

After the grass has been mowed for the first time, fertilize 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 irrigation system for three minutes per zone (or one full rotation) to wash the material off of the leaves of the plants.

C. Mowing

1. Throws Landing Area: When the grass plants reach a height of 1-3/4", the Contractor shall mow with reel-type mower (power take-off only, no friction-drive equipment) to a height of 1-1/2". 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 (see Acceptance below).
2. Grading Transition Areas: No Mowing Specified.

D. After establishment is complete any surface irregularities will be removed with rolling with a roller having 100 lbs. of weight per linear foot of width.

3.05 ACCEPTANCE

A. Density

1. Irrigated Areas: The Contractor shall provide a uniformly dense cover of the specified grass species with no discernable bare areas over 2 square inches.

2. Unirrigated Areas: Contractor shall provide uniform cover, typically a minimum 1,000 individual plants per square foot assuming species mix and rate at 30-35% germination, with no bare areas measuring over 2sf.

B. Vigorous Growth – Irrigated Areas Only

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. Replacement area will be calculated to the nearest 12” increment, the smallest replacement area will be 12” square.

END OF SECTION 32 92 19

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. BASE BID Work specified in this section includes, but is not necessarily limited to, the following:

1. Furnish and install new catch basins and corresponding CPEP storm drainage piping.
2. Furnish and install pre-fabricated slot drain assemblies and structures as shown on the plans.
3. Connections to existing storm drainage system.
4. The Contractor shall coordinate the installation of all new utility piping with all existing utilities and new utilities.

B. ALTERNATE BID ITEM Work specified in this section includes, but is not necessarily limited to, the following:

1. Modify slot drain assembly to accommodate PEX tubing suitable for supply and return of geothermal heating water, including supply and installation of suitable tubing and increased concrete massing for suitable cover.

1.02 STANDARD SPECIFICATIONS

1. American Public Works Association (APWA)
2. American Standard Testing Materials (ASTM)
3. American Association of State Highway and Transportation Officials (AASHTO)
4. American Concrete Institute
5. Local Permit Requirements

1.03 DIMENSIONS AND LAYOUT

A. The Contractor will be responsible for furnishing, setting and marking all line, grade and location stakes, including offsets and general construction staking. The Engineer will provide reference points.

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 engineer, surveyor, or technical specialist must be assigned to the Contractor's crew for this work. This equipment and personnel must be available, at no additional cost, to the Engineer for the purpose of approving layout and certifying the accuracy of work on the site.

C. The Engineer prior to commencing construction and on a continuing basis must approve all of this work, materials, methods and personnel for each phase requiring

accuracy control.

D. The Contractor is responsible for preserving all benchmarks and stakes and the replacement of any that are displaced or missing.

E. The Contractor is responsible for review of all Owner's records relative to the existing underground utilities. The Contractor is responsible to avoid damaging these facilities and shall repair all damaged, recorded utilities at their own expense.

F. The Contractor shall contact the various utility agencies that may have underground services in this area before work commences to have the underground components marked. The contractor shall contact “Call Before You Dig” service at 1-800-424-5555. Refer to the Earthwork section.

1.04 SUBMITTALS

A. Submit to the Engineer for approval:

1. Product data for storm drainage CPEP pipe and fittings materials
2. Product data for catch basin and frame and grate materials
3. Shop drawings and material information for flow control devices.
4. Product data and installation manual for Slot Drain
5. If Awarded, product date for PEX tubing

1.05 RELATED WORK IN OTHER SECTIONS

1. 31 00 00 Earthwork
2. 32 13 00 Sitework Concrete
3. 33 46 16 Subsurface Drainage

PART 2 - MATERIALS

2.01 STORM DRAINAGE PIPE AND FITTINGS

A. Storm drainage piping shall be smooth bore, double-walled CPEP as shown on the plans.

B. The CPEP pipe shall have a smooth interior wall and shall conform to the provisions of AASHTO M294 - Type S. The pipe and fittings shall be made from virgin polyethylene compounds which conform to the Cell Class 324420C as defined in ASTM D3350. Fittings and couplers shall meet the requirements of AASHTO M294-881. Couplers shall be split type.

2.02 CATCH BASIN

A. Catch basins to be pre-cast concrete. Bottoms to be integrally cast with entire unit.

B. Minimum wall thickness shall be four inches (4").

C. Internal dimensions to be a minimum of:

Catch Basin (Type 1L) - 26" x 32" x 40" with depth to accommodate invert elevation and flow control device including required depth of sump.

D. Units to be provided with locking frame and grate.

2.03 CONNECTIONS

A. All connections to be grouted watertight on both sides of catch basin. Mortar to be one part Portland cement, ASTM C-150, Type 1; 1-1/2 parts plaster sand; clean water.

2.04 FRAMES, GRATINGS AND COVERS

A. All frames, gratings, and covers to be cast iron with locking mechanism for lids or grates to frames.

B. All grates within accessible route of travel shall comply with ADAAG, maximum opening size shall be ½".

2.05 SLOT DRAIN SYSTEM

A. BASE BID: Slot Drain Body, Conveyance, and Catch Basin/Junction shall be SportsEdge XT-4 Slot Drain and XT-900 Catch Basins and all necessary equipment and appurtenances including concrete encasement.

B. ALTERNATE BID: PEX Tubing, 2" diameter, as follows;

1. Cross-linked polyethylene tubing, 2" inside diameter, SDR9
2. Adhered ethylene vinyl alcohol (EVOH) jacket, color Orange
3. Bending radius (minimum) 17"
4. Pressure Rating 100psi at 180°F, 80psi at 200°F
5. Fittings, Connections, and Accessories to be as provided by the approved manufacturer
6. WATTS Radiant "RadientPEX" 800-276-2419 or equal

PART 3 - EXECUTION

3.01 TRENCHING

A. Excavation shall be made to 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 and placement of the pipe. No high points above designated invert or calculated trench bottom elevation will be permitted.

C. No sloughing of site material or loose excavated soil will be permitted in trenches.

3.02 TRENCHES

A. Trenches shall be in straight lines as indicated on the drawings.

B. Where feasible, trench width at the top shall be no greater than 24". If sloughing of trench side is encountered, a cribbing form will be required to maintain trench side stability.

C. The trench shall be kept free from water until pipe is laid and backfilled.

D. All surface water is to be diverted so as not to enter the trench.

E. Boulders, rocks, roots and other obstructions shall be entirely removed or cut out to the width of the trench and to a minimum depth of 6" below the elevation of bottom of pipe.

F. All loose and excess excavated material is to be removed and disposed of off-site at Contractor's pre-arranged location.

3.03 PIPE INSTALLATION

A. Pipe to be installed in accordance with manufacturer's recommendations.

B. All connections are to be made with approved fittings as recommended and furnished by the manufacturer.

3.04 BEDDING AND BACKFILL

A. Bedding for the onsite storm drainage installation shall be in accordance with WSDOT 9.03.12(3) and free of organic matter or other extraneous. Backfill shall be with structural fill mechanically compacted to a minimum 95% of dry density per ASTM D1557.

B. No foreign material will be permitted inside the laid pipe.

C. Conform with requirements identified in the Geotechnical Report.

3.05 CATCH BASIN AND MANHOLE INSTALLATION

A. All units shall be installed on a minimum 6" base of gravel or crushed rock.

B. Wall sides to be plumb.

C. The rim elevations shall be installed within the tolerance of +0.00' and - 0.10' from the rim elevations shown on the plan.

D. The finish grade around the catch basin inlet must slope to drain storm water into the catch basin, refer to grading plan. No depressions will be permitted adjacent to the catch basin rim.

3.06 SLOT DRAIN INSTALLATION

A. Slot Drain installation shall be as described in the approved manufacturers published specification and installation manual.

B. Secure the approval of the alignment of line and grade of concrete formwork and slot drain channel prior to placing any concrete.

C. Alternate Bid Item, PEX Geothermal/Radiant Heating Tube

1. All work shall conform to the approved manufacturers printed installation instructions.
2. Tubing to be installed as a single, continuous loop, including supply and return ends.
3. Splices and connections to utilize stiffener inserts as required.
4. Provide expansion / contraction loops or slack as recommended.
5. Sleeve tubing at all expansion joints.
6. Provide pressure testing prior to encasement. Installed, water-filled tubing shall tested for 30 minutes beginning at 125psi, with no more than 3psi loss in the first 5 minutes, 5psi total loss allowed.
7. Supply/Return ends shall terminate in a 12”x18”x12” deep plastic valve box, with taped ends.

3.07 TEMPORARY EROSION CONTROLS

Procedures shall conform to Local regulations and requirements. Measures must be taken during and following construction to prevent erosion. These measures

shall include installation of filter fabric between grate and rings of all catch basin inlets, fabric fencing, barriers, check dams, etc.

END OF SECTION 33 40 00

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. Furnish and install complete subsurface drainage systems for synthetic turf fields, running tracks, and perimeter areas as indicated on the drawings.

B. Coordinate this work with that of Sections 31 00 00 Earthwork and 31 22 16 Subgrade Establishment.

C. The work includes systems incorporating traditional Trenched Perforated Drainage Tubing and 12” width “flat” or “panel” type drainage tubing.

D. Trench to line and grade as shown on the drawings utilizing laser controlled equipment.

E. Dispose of excavated trench material.

F. Collector Tubing:

1. For non-perforated collector under 12” in diameter, install corrugated polyethylene (CPEP) collector tubing. Backfill with select site soil, 8" maximum lifts, compacted to 95%.
2. For perforated collector, install corrugated polyethylene (CPEP) collector tubing. Bed and Backfill with pea gravel.

G. Remove all loose material from collector and lateral trench bottom.

H. For round pipe perforated lateral drainage piping, place a minimum 2" depth of specified washed pea gravel bedding for perforated lateral piping in “D” zone.

I. Install perforated corrugated tubing lateral system plumbed to collector piping.

J. Bed and backfill round perforated tubing trenches with specified washed pea gravel. Backfill over corrugated tubing in jump pits with pea gravel.

K. Upon completion of this work, restore subgrade to specified condition and tolerances, compacted to 95% density with no loose material on surface.

J. Furnish and install trench drain and trench drain catch basins around the perimeter of the playing field as shown on the plans.

1.02 STANDARD SPECIFICATIONS

A. American Public Works Association, Oregon State Chapter, Standard Specifications for Municipal Public Works Construction (APWA) (latest edition).

B. Standard Specifications for Road, Bridge, and Municipal Construction, Oregon Department of Transportation, American Public Works Association (APWA)

C. United States Department of Agriculture, Soil Conservation Service, Engineering Standard 606.

1.03 RELATED WORK IN OTHER SECTIONS

A. 31 00 00 Earthwork

B. 31 22 16 Subgrade Establishment

C. 32 18 25 Imported Sands

D. 33 40 00 Storm Drainage

E. 33 46 23 Permeable Aggregate

1.04 SUBMITTALS

A. Submit to the Field Landscape Architect for approval:

1. Pea gravel sieve analysis
2. Product data for perforated and non-perforated tubing
3. Product data for all fittings and connections

1.05 QUALIFICATIONS

A. The subcontractor responsible for field base establishment, field subsurface drainage, and field permeable aggregate placement and compaction shall be submitted to the Field Landscape Architect 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 (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

2.01 PERFORATED AND NON-PERFORATED TUBING

A. The piping shall be corrugated polyethylene drainage tubing. The perforated and 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. Perforated tubing

1. For round pipe, utilize single wall, perforated drainage 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.
2. For Flat or Panel-type Drainage Tubing, ADS "AdvanEdge" system and all necessary pre-molded fittings, couplers, and caps.

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.

2.02 PEA GRAVEL

A. Pea-gravel bedding and backfill for perforated pipe subdrainage systems, and as backfill for un-piped infiltration trenches, 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"	80 - 100
# 4	0 - 50
# 8	0 - 10
# 100	0 - 0.6
# 200 (wet sieve)	0 - 0.5
# 270 (wet sieve)	0 - 0.3

2.03 TESTING

A. The Owner will be performing testing of materials delivered to the job site for the purpose of verifying compliance with the contract documents. The Owner’s testing is for this purpose only and not for construction quality control by the Contractor.

B. The Contractor shall coordinate directly with the Owner’s testing firm relative to the delivery schedules of the imported materials.

C. The Contractor shall provide testing and surveillance as required to assure materials and work fully comply with contract requirements.

D. The Contractor at a price equal to the Owner’s contract testing agreement shall pay for owner’s tests that do not meet specifications. The Contractor shall pay directly to the testing organization upon invoice to the owner, which has been approved by the Field Landscape Architect.

PART 3 - EXECUTION

3.01 TRENCHING

A. Coordination: It is the responsibility of the Contractor to ensure that electrical conduits and wash water piping are installed at a sufficient depth below subgrade before the trenching for the subsurface drainage system to avoid conflicts between systems.

B. Excavation shall be made to the alignment, elevation, grade and slope as indicated on the drawings.

C. 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.

D. 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.

E. 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 or in District controlled site directly adjacent to the project work area.

F. 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.

3.02 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, uniformly graded 3/8" to 1/8".

C. No foreign material will be permitted inside, alongside, under, or on top of, installed tubing.

D. All joints and connections shall be with manufacturers snap type fittings and taped secure.

E. Coordinate installation of structural soil bearing fabric to be continuous through trenches, however never placed over the surface of the pipe.

F. For round pipe perforated lateral drainage piping, place a minimum 2" depth of specified washed pea gravel bedding for perforated lateral piping.

3.03 BACKFILL

A. The backfill for all round 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 Field Landscape Architect approves the trench.

D. Trench backfill shall not be placed before Field Landscape Architect 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.

3.04 CONNECTIONS

A. Includes all new work and connection to existing subdrainage pipe.

B. All connections are to be made with approved fittings as recommended by the tubing manufacturer and approved by the Field Landscape Architect.

C. Tubing is to be inserted into sockets for the entire length. Tape all connections utilizing polyethylene or construction tape. Tape alone shall not be acceptable when connecting separate pieces of pipe together.

D. No foreign material will be permitted inside the installed tubing.

E. 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. Tape shall not be used in lieu of end caps.

F. Connection of laterals to collector drains shall be made with a combination reducing tee and reducing saddle tee or end tee as applicable, utilizing snap connections.

3.05 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 granular materials. Backfilled trenches are to be staked and "flagged" 3' above grade a maximum 20' spacing for identity.

END OF SECTION 33 46 16

PART 1 - GENERAL

1.01 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 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

B. Related Work in Other Sections:

1. 31 00 00 Earthwork
2. 31 22 16 Subgrade Establishment
3. 32 12 17 Porous Asphalt Paving
4. 32 18 23 Rubberized Surfacing
5. 32 18 24 Infilled Synthetic Turf
6. 33 46 16 Subsurface Drainage

1.02 STANDARD SPECIFICATIONS

A. Design Procedure and General Specifications, Asphalt Paving, Asphalt Pavement Association of Oregon (APAO);

B. American Public Works Associations, Oregon State Chapter, Standard Specifications for Municipal Public Works Construction, (APWA), latest edition.

C. American Standard Testing Materials, (ASTM);

D. American Association of State Highway and Transportation Officials, (AASHTO).

1.03 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.

1.04 QUALIFICATIONS

A. The subcontractor responsible for field base establishment, field subsurface drainage, and field permeable aggregate placement and compaction shall be submitted to the Field Landscape Architect 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 (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

2.01 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.

2.02 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 top course permeable aggregate 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

2.03 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 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.

2.04 RECYCLED PLASTIC EDGE ANCHOR

A. Include all materials required to provide a secure recycled plastic edge for establishment of Permeable Aggregate grade and anchoring of synthetic turf.

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. Concrete Anchoring: Concrete wedge anchor, zinc plated, 3/8" x5" length, partially threaded, with zinc plated washer and nut.

D. 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.

2.05 TESTING

A. The Owner will perform testing of materials delivered to the job site for the purpose of verifying compliance with the contract documents. The Owner's testing is for this purpose only and not for construction quality control by the Contractor.

B. The Contractor shall coordinate directly with the Owner's testing firm 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.

D. The Contractor at a price equal to the Owner's contract testing agreement shall pay for owner's tests that do not meet specifications. The Contractor shall pay directly to the testing organization upon invoice to the owner, which has been approved by the Engineer.

PART 3 - EXECUTION

3.01 SUBGRADE ESTABLISHMENT

A. No work shall be performed in this section until subgrade is 100% completed and accepted by the Engineer as being in compliance with Section 31 22 16 Field Subgrade Establishment.

B. Finish subgrade shall be compacted to a minimum 95% maximum dry density at optimum moisture and +/-2% optimum moisture.

C. Subgrade shall be established to within the tolerance of +0.00' or -0.10' of the design subgrade elevation.

3.02 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.

3.03 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.

3.04 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.

3.05 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.

3.06 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.

3.07 RECYCLED PLASTIC 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 Plastic 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 Plastic 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 anchor supplier, whichever is greater.
      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

Applied
Geotechnical
Engineering
& Geologic Consulting

October 5, 2014

Ausland Group
Attention: Todd Powell, P.E.
3935 Highland Avenue
Grants Pass, OR 97526

SUBJECT: GEOTECHNICAL INVESTIGATION, OIT, MOEHL STADIUM SPORT FIELD TURF, KLAMATH FALLS, OREGON

At your request, Applied Geotechnical Engineering and Geologic Consulting LLC (AGEGC) has conducted a geotechnical investigation for the proposed new sport turf field at OIT's Moehl Stadium in Klamath Falls, Oregon. Our investigation consisted of subsurface explorations, a field percolation test, laboratory testing, and engineering analyses. This report summarizes our work and provides our conclusions and recommendations for suitably founding the new turf sports field on the site.

The existing grass sport field will be replaced with all-season turf and new track. We understand that minor cuts and fills will be required to level the field and provide some surface drainage. Turf fields typically include an underfield drainage system and perimeter subsurface drain. We understand that construction is tentatively scheduled to be completed in 2015.

Moehl Stadium is located on the north side of campus and includes a large grass playing area with a track around the perimeter. The relatively level playing area was constructed by cutting into a hillside on the north and east sides of the site and by filling on the west and south sides of the site. A large cut slope exposing siltstone is located on the east side of the field. A large fill slope is located on the west (downslope) side of the field.

SUBSURFACE CONDITIONS

On September 26, 2014, four test pits were excavated at the site to evaluate subsurface conditions. The test pits were completed at locations designated by the turf design company (as shown on Figure 1). A fifth test pit could not be completed on the east side of the field (at the base of the cut slope) due to existing underground utilities in this area. The test pits were excavated using a mini-excavator. The excavations were observed by a geotechnical engineer from our firm who maintained a detailed log of the conditions and materials encountered. Representative soil samples were collected and stored in air-tight containers for transfer to our laboratory. The test pit excavations were backfilled with excavation spoils compacted using the bucket on the mini-excavator at the conclusion of our fieldwork. The logs of the test pits are provided in Appendix A at the end of this report. The terms used to describe the soil and rock materials encountered in the test pits are provided in Tables 1A and 2A in Appendix A.

All four test pits encountered a surficial layer of organic silt soil varying in thickness between 0.5 and 2 ft thick. In test pits TP-1 and TP-2, the organic silt soil is underlain by fill consisting of silt with some clay to clayey. Scattered siltstone gravel and cobble were encountered in the fill. A zone of large boulders was encountered in the fill in test pit TP-2 at a depth of about 4 ft. TP-2 was terminated in the silt fill at a depth of 9 ft. Test pit TP-1 encountered the fill to a depth of 6.5 ft. The fill is underlain by 1 ft of black clayey silt.

Below the black clayey silt in test pit TP-1 (at a depth of 7.5 ft) and below the surficial organic soils in test pits TP-3 and TP-4, these test pits encountered diatomaceous siltstone. The upper siltstone is relatively weathered but becomes harder and less weathered with depth. The mini-excavator encountered practical refusal at a depth of 8 ft in test pit TP-1 and at a depth of 3 ft in test pit TP-4. Test pit TP-3 was terminated at a depth of 4.5 ft in siltstone (test pit used for the percolation test).

Significant groundwater seepage was observed at a depth of about 6 ft in test pit TP-2, from the north side of the test pit in a zone of large angular cobbles. Groundwater was not observed in the other three test pits.

PERCOLATION TEST

On September 26, 2014, AGEGC completed a percolation test at the location of test pit TP-3. The percolation test was completed by excavation of a 4.5-ft-deep trench and filling the trench with water. The trench was filled with water to start the percolation test to saturate the soils adjacent to the trench. The depth to water was measured using a stake placed across the trench. At the start of the test, the water level and time were recorded.

Percolation Test No. 2

Depth to Water (in.)	Time Increment (Minutes)	Depth Interval (in.)	Percolation Rate (in./hr)
5.75	0	NA	NA
8.5	4	2.75	41
9.5	5	1.25	15
11.0	8	1.5	11
15.5	45	4.5	6
16.0	7	0.5	4
19.0	73	3.0	2.5
19.5	28	0.5	1.1
20.5	53	0.8	0.9
21.5	60	0.6	0.6
22.0	62	0.5	0.6
22.5	50	0.4	0.5

CONCLUSIONS AND RECOMENDATIONS

General

The subsurface explorations indicate the site is mantled with relatively soft silt soils (including fill soils) underlain by diatomaceous siltstone. In general, the fill is thin under the northeastern portion of the field. The fill thickens towards the southwestern corner of the site.

In our opinion, subgrade materials and conditions at the site are suitable for construction of the proposed new turf field. The main geotechnical considerations for construction of the new turf field include relatively soft silt and fill soils, shallow (perched) groundwater, and low percolation rates.

The following sections of this report provide our conclusions and recommendations for design and construction of the proposed turf field.

Site Preparation. The existing silt soils contain significant fines and cannot be used as structural fill. Excavated soils should be removed from the site.

Construction equipment should not be allowed to traffic directly on the exposed subgrade soils. It has been our experience that the moisture content of the upper few feet of the native soils will decrease during warm, dry weather. However, below this depth, the moisture content of the soil tends to remain relatively unchanged and well above the optimum moisture content for compaction. As a result, the subcontractor must employ construction equipment and procedures that prevent disturbance and softening of the subgrade soils. The use of trackhoes equipped with a smooth-edged bucket for excavation with the concurrent placement of granular work pads tends to minimize the potential for subgrade disturbance. Any soft or disturbed soil should be removed from the design subgrade prior to placement of the non-woven geotextile and initial rock section.

The rock section should be placed using a small dozer to limit the loading on the subgrade soils. The dozer should work off of the existing rock section and not be allowed to traffic on the subgrade soils. The rock should be placed as soon as practical on the exposed subgrade. Subgrade that is allowed to significantly dry or is exposed to precipitation may need to be overexcavated and replaced with structural fill.

If the subgrade is disturbed during construction, soft, disturbed soils should be overexcavated to firm soil and backfilled with structural fill.

To protect the subgrade soils from damage due to construction, it may be necessary during wet weather conditions to use working pads constructed of imported granular material to support construction activities and equipment and protect the underlying subgrade. The total required thickness of granular material will depend on the anticipated construction traffic and the time of year of construction. A 24-in.-thick layer of granular fill is typically suitable for support of heavy truck and equipment traffic during

spring and early summer weather. The use of a geotextile fabric (6 oz. minimum weight) over the subgrade will minimize maintenance during construction.

Areas of soft subgrade encountered during site preparation should be removed and replaced with compacted structural fill. The subgrade should be evaluated by the project geotechnical engineer prior to placement of any structural fill. The evaluation may include a proof-roll of the site with a fully-loaded dump truck.

Structural fill cannot be placed on frozen ground (native soils and imported granular fill). Structural fill should not be placed when temperatures are below freezing or will drop below freezing within 24 hours of placement. In our opinion, it will not be practical to construct the turf field during normal winter months when the ground surface is typically frozen.

Structural Fill. All fill placed within 2 ft of the turf field and track should consist of structural fill, such as ¾-in.-minus crushed rock. In our opinion, all structural fill for the project should consist of imported hard/durable crushed rock fill compacted to about 95% of the maximum dry density as determined by ASTM D 698. The base sections of rock should meet standard Oregon Department of Transportation (ODOT) specifications for aggregate base. To reduce the risk of damage to the excavation subgrade, the compaction should be accomplished using a small- to moderate-sized, smooth-drum vibratory roller.

Foundation Support Recommendations. We understand relatively lightly loaded, single-story steel and/or masonry buildings may be constructed as part of the field upgrades. The existing fill and black clayey silt soils are not suitable for support of the proposed structure without excessive differential movement of the foundations. Excavations to remove unsuitable soils and to complete excavations to design subgrade should be completed using a trackhoe equipped with a smooth-lip bucket. Based on the results of our investigation, it is our opinion that foundation support for new buildings can be provided by conventional spread footing foundations founded on imported structural fill over siltstone. The structural fill (and associated overexcavation of the unsuitable soils) should extend at least 2 ft beyond the edge of the spread footing foundation. Subgrade for the imported crushed rock fill for the building pad should consist of siltstone.

Footings should be established at a minimum depth of 24 in. below the lowest adjacent finished grade for exterior footings. The width of footings should not be less than 12 in. for continuous wall footings and 24 in. for column footings. All footing excavations should be observed by a qualified geotechnical engineer prior to placement of rebar and concrete.

For foundations founded on structural fill founded on siltstone, we estimate that the total, long-term settlement of spread footings designed in accordance with the above recommendations and imposing a real bearing pressure of 2,000 psf will be less than 0.5 in. for column loads up to 4 kips and continuous spread footing foundation loads up to 2,000 klf. The majority of the settlement should occur during construction of the buildings.

For design purposes, the real bearing value refers to the total of dead load plus frequently and/or permanently applied live loads, and can be increased by one-third for the total of all loads; dead, live, and wind or seismic.

Horizontal shear forces can be resisted by frictional forces developed between the base of spread footings and the underlying soil and by passive soil resistance. The total frictional resistance between the footing and the soil is the normal force times the coefficient of friction between the soil and the base of the footing. We recommend an ultimate value of 0.4 for the coefficient of friction; the normal force is the sum of the vertical forces (dead load plus real live load). If additional lateral resistance is required, passive earth resistance against embedded footings or walls can be computed using a pressure based on an equivalent fluid with a unit weight of 300 pcf. This design passive earth pressure is appropriate only if granular structural fill is to be used for the backfill around footings.

Light Pole Foundations. We understand new light poles up to 80 ft high will be installed as part of the field upgrade. Foundation design for light pole foundations is typically controlled by lateral loadings. We recommend the support for the light pole foundations be evaluated for lateral loading using the "L-Pile Plus Version 5.0" software by Ensoft, Inc. of Austin, Texas or similar software program. The top of rock varies across the site, with the silt soils relatively thick under the southwestern portion of the site. For evaluation purposes, the silt soils may be classified as "Stiff Clay without Free Water" with a soil modulus of 500 pci, a moist unit weight of 0.05 pci, an undrained shear strength of 7 psi, an angle of internal friction of 25°, and a ε50 of 0.01. The recommended values for soil are average values based on conditions and materials encountered in the test pits and do not take into account any adjacent slopes.

Turf and Track Sections. Based on the results of our fieldwork for the site, subgrade for the turf and track sections will consist of medium stiff silt and weathered siltstone. A field determination of the CBR was not completed as part of this study; however, based on our experience with similar soils, we anticipate that the silt has a CBR value of about 5.

Based on our previous work with other turf fields in this area, we anticipate that a typical turf structural section for the turf will consist of 2 in. of ¼-in.-minus-crushed rock over 6 in of angular drain rock (¾ to ¼ in.) over 10 in. of 1½-in.–minus crushed rock. A woven geotextile (5 oz minimum weight) should be placed under the crushed rock section, on firm, undisturbed subgrade soils. Perforated drain pipes will likely be needed in the drain rock section.

A typical track section consists of 2.5 in. of asphaltic concrete over 4 in. of ¾-in.-minus crushed rock over 10 in. of 1½-in.-minus crushed rock over a woven geotextile. Typical A.C. consists of an ODOT ½ in. mix Level 2 with a PG 64-22 binder.

A subsurface drain should be placed around the perimeter of the field. The drain should consist of a minimum 2.5 ft deep trench containing a perforated drain pipe and angular drain rock wrapped in a non-woven geotextile (5 oz minimum weight).

The above structural sections are not intended for support of heavy equipment and/or large trucks.

Percolation Rates. The results of the percolation test indicates the percolation rate for the trench at the end of the test was on the order of 0.5 in./hr. These values include the percolation of water from the excavation into the sidewalls and the bottom of the excavations for the percolation tests. In our opinion, these percolation rates are the maximum values that should be expected for percolation at the site. For design purposes, we recommend a decrease of the percolation rate of 50% to account for the difference in the wetted perimeter to bottom area ratio. The percolation rate of the subgrade will decrease as the subgrade soils migrate clay particles over time. We recommend a decrease of the percolation rate of 50% to account for the plugging of the sidewalls and bottom with silt and clay.

For design of the infiltration rate, we recommend an average percolation rate of 0.1 in./hr (a 50% reduction for sidewall ratio and 50% reduction for plugging over time).

Erosion Control. The intent of the erosion control plan is to decrease erosion and off-site migration of soils. Typical measures used to decrease off-site migration include use of hay bales and rock coverings or checkdams; holding the soil in place by establishing a vegetation cover as soon as practical; and by directing surface water flow away from areas disturbed by construction activities.

We anticipate that a portion of the property will be disturbed during construction of the proposed new turf; however, the disturbed area will have significant vegetation surrounding the area and the disturbed area will be covered with imported crushed rock as soon as practical after the subgrade is exposed so the risk of off-site transport of soil particles is low.

Surface water runoff from upslope of the disturbed area should be directed away from the construction area. Surface water flow on the exposed soil should move as sheet flow rather than concentrated flow.

Runoff from the disturbed portion of the site may contain some soil material. To further reduce the risk of sediment leaving the site during periods of wet weather (typically winter and spring months), small settling basins can be installed at the start of the wet season below the site at the discharge end of graded areas, ditches and swale areas. Straw bales should be staked along the downhill edge of the settling basin. Water can be discharged from the settling basin using 4-in.-diameter flex pipe. The settling basins should be installed no later than September 30.

Straw bales or silt fencing should be installed along the downhill edge (south and west sides) of the proposed construction. The silt fence should be embedded at least 4 in. into the ground and should be staked in place. The straw bales should be placed end-to-end and staked in place to prevent separation between the bales. The silt fence and straw bales should be placed to direct surface water runoff from the site towards the settlement basins.

During construction and prior to establishment of the site landscaping, the erosion control measures must be monitored and may require periodic maintenance. Maintenance may include removal of sediment from upslope of the straw bales or silt fence, removal of sediment from the settlement basins, and the placement of additional straw bales or sediment fence. The amount of required maintenance of the erosion control measures will decrease significantly as the landscaping becomes established.

The responsible person for the erosion control should evaluate the erosion control measures periodically during construction, including on about September 30 and after storm events. The intent of the evaluation would be to determine if additional measures need to be installed and if maintenance of the system needs to be completed.

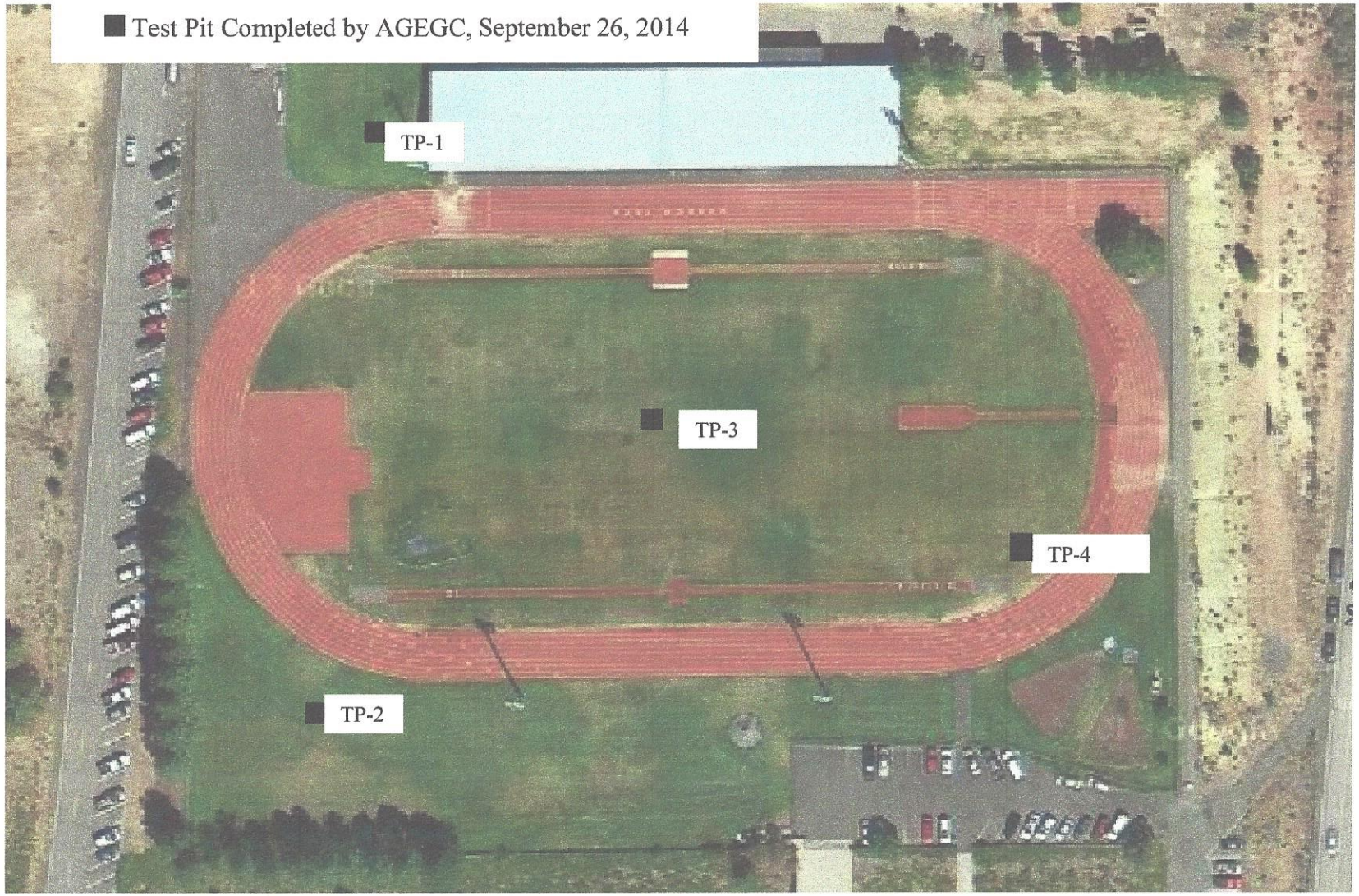
LIMITATIONS

This report has been prepared to aid the design team in the completion of this project. The scope is limited to the specific project and location described herein, and our description of the project represents our understanding of the significant aspects of the project relevant to the design and construction of the earthwork and new turf. The conclusions and recommendations submitted in this report are based on the data obtained from the test pit explorations and from other sources of information discussed in this report. In the performance of subsurface investigations, specific information is obtained at specific locations at specific times. However, it is acknowledged that variations in soil conditions may exist between test pit locations. This report does not reflect any variations that may occur between these explorations. The nature and extent of variation may not become evident until construction. If, during construction, subsurface conditions different from those encountered in the explorations are observed or encountered, we should be advised at once so that we can observe and review these conditions and reconsider our recommendations where necessary.

Sincerely,
Applied Geotechnical Engineering and Geologic Consulting, LLC

Robin L. Warren, G.E., R.G.
Principal

Renewal: June 2016



Applied Geotechnical Engineering & Geologic Consulting

Site Map
Figure 1

Project No. 3900
Moehl Stadium
Klamath Falls, Oregon
October 2014

Appendix A
Subsurface Explorations

Test Pit TP-1

00 to 09 in	FILL: Medium stiff, black SILT; some clay to clayey, organic and rooted (topsoil).
09 to 78 in	FILL: Medium stiff, brown SILT; trace to some clay, scattered siltstone gravel.
78 to 90 in	Stiff, gray Clayey SILT.
90 to 96 in.	Soft to medium hard (RH-1 to RH-2) light brown SILTSTONE; diatomaceous, slightly weathered.

Practical refusal of the mini-excavator at a depth of 8 ft on Siltstone.
Groundwater seepage not observed.
No significant caving of test pit sidewalls.
Completed September 26, 2014.

Test Pit TP-2

00 to 108in	FILL: Medium stiff, brown clayey SILT; upper 9 in. consists of organic black silt, scattered siltstone cobble and boulders at a depth of 5 to 7 ft.

Significant groundwater seepage observed at a depth of 6 ft in a cobble zone.
No significant caving of test pit sidewalls.
Completed September 26, 2014.

Test Pit TP-3

00 to 24 in	FILL: Medium stiff, black SILT; some clay to clayey, organic and rooted (topsoil).
24 to 54 in.	Soft to medium hard (RH-1 to RH-2) light brown SILTSTONE; diatomaceous, slightly weathered.

Practical refusal of the mini-excavator at a depth of 4.5 ft on Siltstone.
Groundwater seepage not observed.
No significant caving of test pit sidewalls.
Completed September 26, 2014.

Test Pit TP-4

00 to 06 in	FILL: Medium stiff, black SILT; some clay to clayey, organic and rooted (topsoil).
06 to 24 in.	Soft (RH-1) light brown SILTSTONE; diatomaceous, moderately weathered.
24 to 36 in.	Soft to medium hard (RH-1 to RH-2) light brown SILTSTONE; diatomaceous, slightly weathered.

Practical refusal of the mini-excavator at a depth of 3 ft on Siltstone.
Groundwater seepage not observed.
No significant caving of test pit sidewalls.
Completed September 26, 2014.

TABLE 1A: SOIL DESCRIPTION TERMINOLOGY

Coarse-Grained Soils (Sand Size and Larger)

Relative Density	Standard Penetration Resistance (N-Values)
Very Loose	0-4
Loose	4-10
Medium Dense	10-30
Dense	30-50
Very Dense	Over 50

Fine-Grained (Cohesive) Soils

Consistency	Standard Penetration Resistance (N-Value)	Torvane Undrained Shear Strength, tsf	Field Identification
Very Soft	2	Less than 0.125	• Easily penetrated by fist.
Soft	2-4	0.125-0.25	• Easily penetrated by thumb.
Medium Stiff	5-8	0.25-0.50	• Penetrated by thumb with moderate effort.
Stiff	9-15	0.50-1.0	• Readily indented by thumb but penetrated only with great effort.
Very Stiff	16-30	1.0-2.0	• Readily indented by thumbnail.
Hard	Over 30	Over 2.0	• Indented with difficulty by thumbnail.

Grain Shape

Term	Description
Angular	Corners and edges sharp.
Subangular	Corners worn off, angles not worn off
Subrounded	Corners and angles worn off, flat surfaces remain.
Rounded	Worn to almost spherical shape.

Grain Size Classification

Boulders	6 to 36 inches
Cobbles	3 to 6 inches
Gravel	¼-¾ inch (fine)
	¾-3 inches (coarse)
Sand	No. 200-No. 40 sieve (fine)
	No. 40-No. 10 sieve (medium)
	No. 10-No. 4 sieve (coarse)
Silt/Clay	Pass No. 200 sieve

Modifier for Subclassification

Adjective	Percentage of Other Material in Total Sample
Clean	0 – 1.5
Trace	1.5 - 10
Some	10 - 30
Sandy, Silty, or Clayey	30 - 50

TABLE 2A: ROCK DESCRIPTION TERMINOLOGY

Scale of Rock Hardness (After Panama Canal Company, 1959)

RH-1	Soft	Slightly harder than very hard over-burden, rock-like character, but crumbles or breaks easily by hand.
RH-1	Medium Soft	Cannot be crumbled between fingers but can be easily picked with light blows of the geology hammer.
RH-2	Medium Hard	Can be picked with moderate blows of geology hammer. Can be cut with knife.
RH-3	Hard	Cannot be picked with geology hammer but can be chipped with moderate blows of the hammer.
RH-4	Very Hard	Chips can be broken off only with heavy blows of the geology hammer.

Terms Used to Describe the Degree of Weathering

Descriptive Term	Defining Characteristics
Fresh	Rock is unstained. May be fractured but discontinuities are not stained.
Slight	Rock is unstained. Discontinuities show some staining on their surface but discoloration does not penetrate rock mass.
Moderate	Discontinuity surfaces are stained. Discoloration may extend into rock along discontinuity surfaces.
High	Individual rock fragments are thoroughly stained and can be crushed with pressure hammer. Discontinuous surfaces are thoroughly stained and may be crumbly.
Severe	Rock appears to consist of gravel-sized fragments in a "soil" matrix. Individual fragments are thoroughly discolored and can be broken with fingers.

Thickness of Bedding

Massive	Beds are 3 feet thick or greater.
Thick Bedding	Beds from 1 to 3 feet thick.
Medium Bedded	Beds from 4 inch to 1 feet thick.
Thin Bedded	Beds less than 4 inch thick.

OREGON TECH TRACK AND SOCCER PRO□ECT

CONSTR□CTION DRAWINGS

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VICINITY MAP

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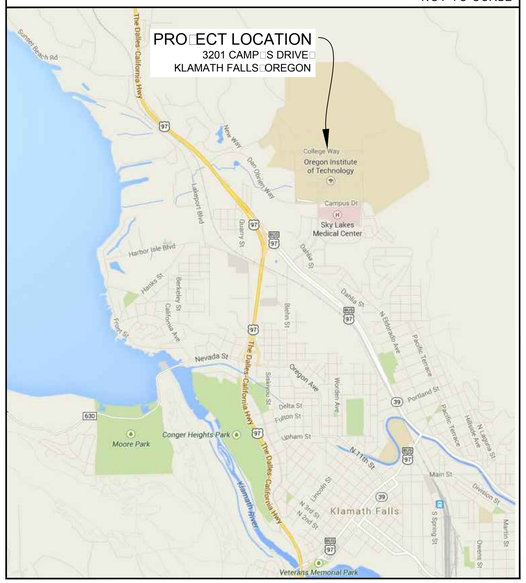

LOCATION MAP

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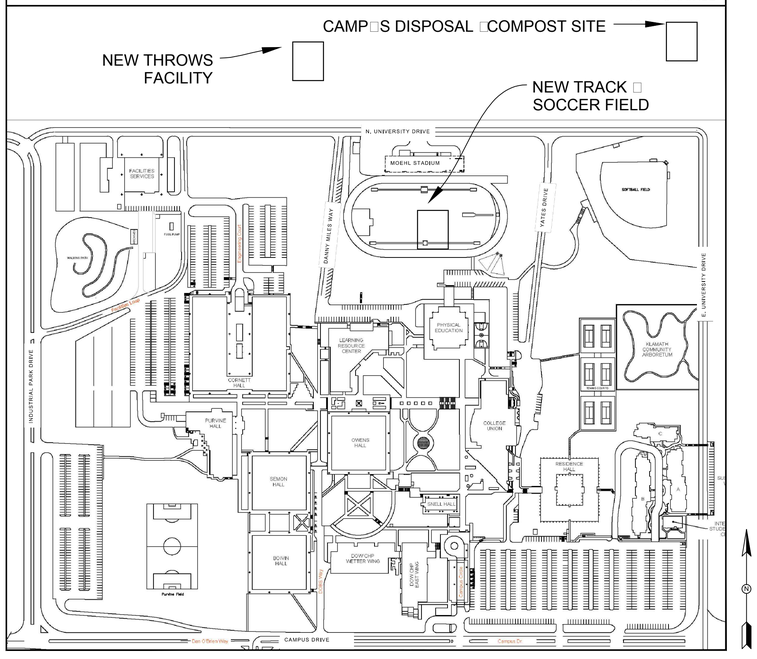

SHEET INDEX

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TEL□541-885-1600

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CONTACT□KELSY A□SLAND□P.E. □TODD POWELL□P.E.
3935 HIGHLAND AVEN□E
GRANTS PASS□OR 97526
TEL□541-476-3788

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SEATTLE□WA 98104
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LYNNWOOD□WA. 98036
TEL□206-224-3667

APPLIED GEOTECHNICAL ENGINEERING — GEOTECHNICAL ENGINEER

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1314-□ CENTER DRIVE □452
MEDFORD□OR 97501
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LARGE SITE ESCP	CITY KLAMATH FALLS		
PRIVATE STORM WATER	CITY KLAMATH FALLS		
ELECTRIC	CITY KLAMATH FALLS		
1200-C	OR DE□		

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CITY PROJECT NO. OIT-270-P-13-17

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OREGON
JANUARY 13, 2006
TODD D. POWELL
2-05-15
EXPIRES: 12/31/16

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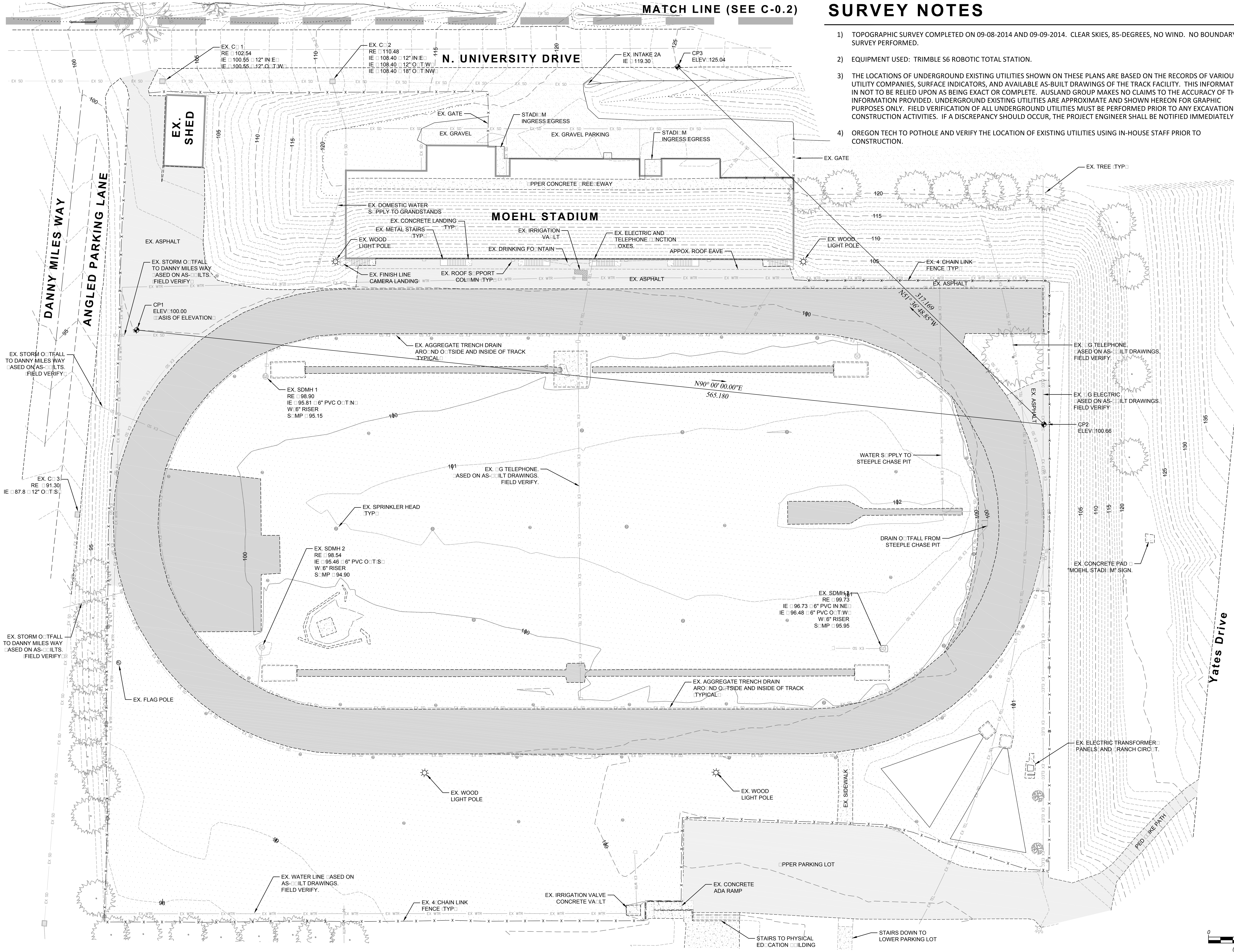

SURVEY NOTES

1) TOPOGRAPHIC SURVEY COMPLETED ON 09-08-2014 AND 09-09-2014. CLEAR SKIES, 85-DEGREES, NO WIND. NO BOUNDARY SURVEY PERFORMED.

2) EQUIPMENT USED: TRIMBLE S6 ROBOTIC TOTAL STATION.

3) THE LOCATIONS OF UNDERGROUND EXISTING UTILITIES SHOWN ON THESE PLANS ARE BASED ON THE RECORDS OF VARIOUS UTILITY COMPANIES, SURFACE INDICATORS, AND AVAILABLE AS-BUILT DRAWINGS OF THE TRACK FACILITY. THIS INFORMATION IN NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. AUSLAND GROUP MAKES NO CLAIMS TO THE ACCURACY OF THE INFORMATION PROVIDED. UNDERGROUND EXISTING UTILITIES ARE APPROXIMATE AND SHOWN HEREON FOR GRAPHIC PURPOSES ONLY. FIELD VERIFICATION OF ALL UNDERGROUND UTILITIES MUST BE PERFORMED PRIOR TO ANY EXCAVATION OR CONSTRUCTION ACTIVITIES. IF A DISCREPANCY SHOULD OCCUR, THE PROJECT ENGINEER SHALL BE NOTIFIED IMMEDIATELY.

4) OREGON TECH TO POTHOLE AND VERIFY THE LOCATION OF EXISTING UTILITIES USING IN-HOUSE STAFF PRIOR TO CONSTRUCTION.

ABBREVIATIONS

AC	ASPHALT
□W	□ACK OF WALK
C□G	C□R□ □ G□TTER
CP	CONTROL POINT
DW	DRIVEWAY
EG	EXISTING GRO□ND
EX	EXISTING
FG	FINISH GRO□ND
FH	FIRE HYDRANT
G□	GRADE □REAK
ME	MATCH EXISTING
RE	RIM ELEVATION
S	SLOPE
SD	STORM DRAIN
SS	SANITARY SEWER
SW	SIDEWALK
T□R	TO □E REMOVED
TOE	□OTTOM OF WALL
TOW	TOP OF WALL
TYP	TYPICAL
WTR	WATER

MATERIAL LEGEND

ASPHALT (ONSITE)
CONCRETE
GRAVEL
GRASS / LANDSCAPING
TRACK S□RFACING

SYMBOL LEGEND

WATER METER
WATER VALVE
FIRE HYDRANT
AIR / VAC□□M VALVE
SEWER MANHOLE
CLEAN O□T
STORM MANHOLE
STORM INLETS
POWER / LIGHTS

LINE LEGEND

WATER LINE
SANITARY SEWER LINE
STORM DRAIN LINE
GAS LINE
OVERHEAD □TILITY
POWER LINE
FI□ER OPTIC LINE
TELEPHONE
TELEVISION
FENCE
CENTERLINE
PROPERTY LINE
EASEMENT □O□NDARY
EDGE PAVEMENT
C□R□
G□TTER
SIDEWALK

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TRACK SURVEY

AUSLAND PROJECT NO: 14-0708

SURVEY NOTES

1) TOPOGRAPHIC SURVEY COMPLETED ON 10-20-2014. CLOUDY WITH PERIODIC SHOWERS, 55-DEGREES, WINDY. NO BOUNDARY SURVEY PERFORMED.

2) EQUIPMENT USED: TRIMBLE S6 ROBOTIC TOTAL STATION.

3) THE LOCATIONS OF UNDERGROUND EXISTING UTILITIES SHOWN ON THESE PLANS ARE BASED ON THE RECORDS OF VARIOUS UTILITY COMPANIES, SURFACE INDICATORS, AND AVAILABLE AS-BUILT DRAWINGS OF THE TRACK FACILITY. THIS INFORMATION IN NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. AUSLAND GROUP MAKES NO CLAIMS TO THE ACCURACY OF THE INFORMATION PROVIDED. UNDERGROUND EXISTING UTILITIES ARE APPROXIMATE AND SHOWN HEREON FOR GRAPHIC PURPOSES ONLY. FIELD VERIFICATION OF ALL UNDERGROUND UTILITIES MUST BE PERFORMED PRIOR TO ANY EXCAVATION OR CONSTRUCTION ACTIVITIES. IF A DISCREPANCY SHOULD OCCUR, THE PROJECT ENGINEER SHALL BE NOTIFIED IMMEDIATELY.

ABBREVIATIONS

AC	ASPHALT
BW	BACK OF WALK
C&G	CURB & GUTTER
CP	CONTROL POINT
DW	DRIVEWAY
EG	EXISTING GROUND
EX	EXISTING
FG	FINISH GROUND
FH	FIRE HYDRANT
GB	GRADE BREAK
ME	MATCH EXISTING
RE	RIM ELEVATION
S	SLOPE
SD	STORM DRAIN
SS	SANITARY SEWER
SW	SIDEWALK
TBR	TO BE REMOVED
TOE	BOTTOM OF WALL
TOW	TOP OF WALL
TYP	TYPICAL
WTR	WATER

MATERIAL LEGEND

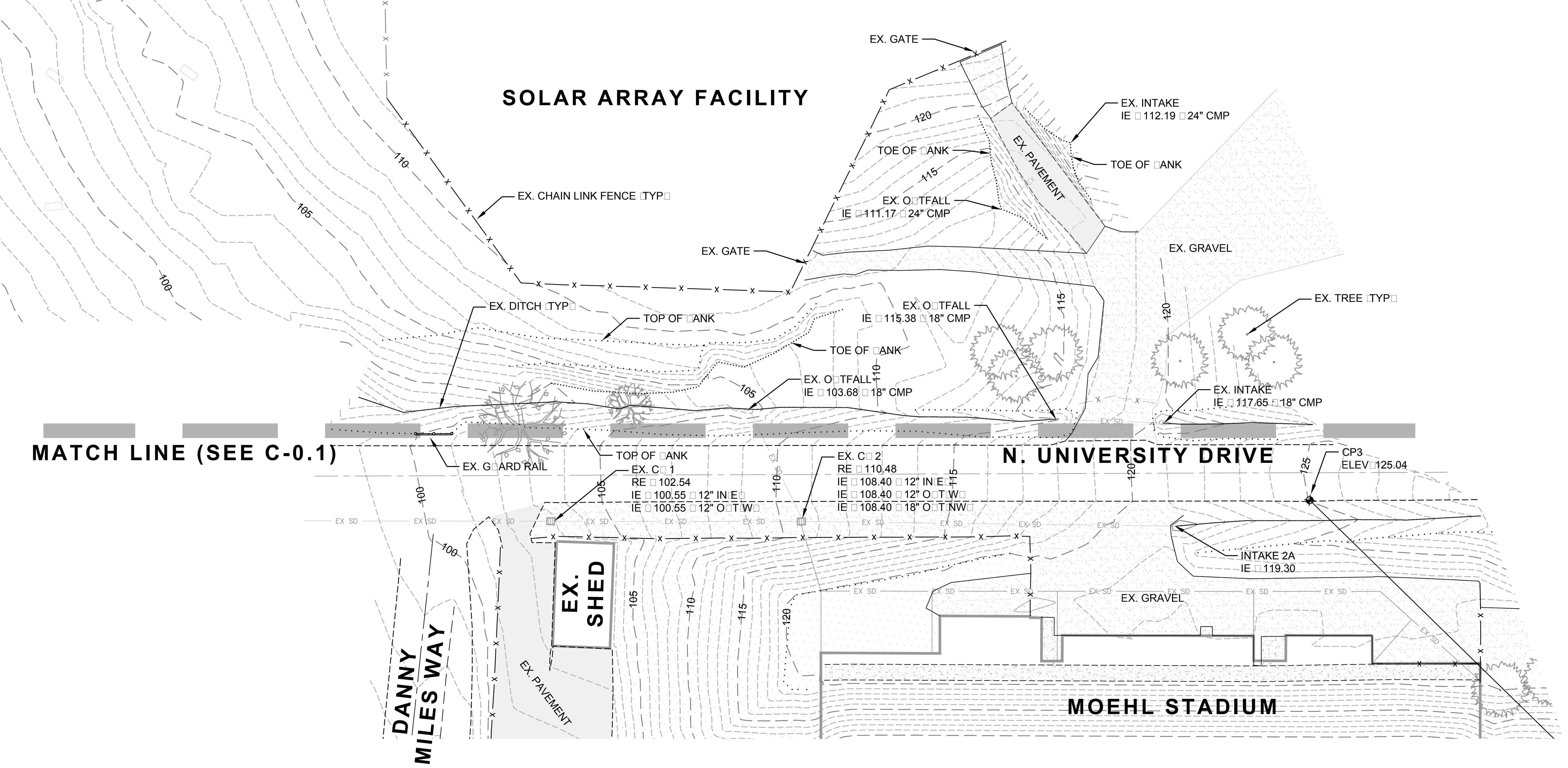
- ASPHALT (ONSITE)
- CONCRETE
- GRAVEL
- GRASS (LANDSCAPING)
- TRACK SURFACING

SYMBOL LEGEND

- WATER METER
- WATER VALVE
- FIRE HYDRANT
- AIR VACUUM VALVE
- SEWER MANHOLE
- CLEAN OUT
- STORM MANHOLE
- STORM INLETS
- POWER LIGHTS

LINE LEGEND

- WATER LINE
- SANITARY SEWER LINE
- STORM DRAIN LINE
- GAS LINE
- OVERHEAD UTILITY
- POWER LINE
- FIBER OPTIC LINE
- TELEPHONE
- TELEVISION
- FENCE
- CENTERLINE
- PROPERTY LINE
- EASEMENT BOUNDARY
- EDGE PAVEMENT
- CURB
- GUTTER
- SIDEWALK



Scale 1" = 40'

0 40' 80'

(11x17 Double Scale)

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Rev 2	
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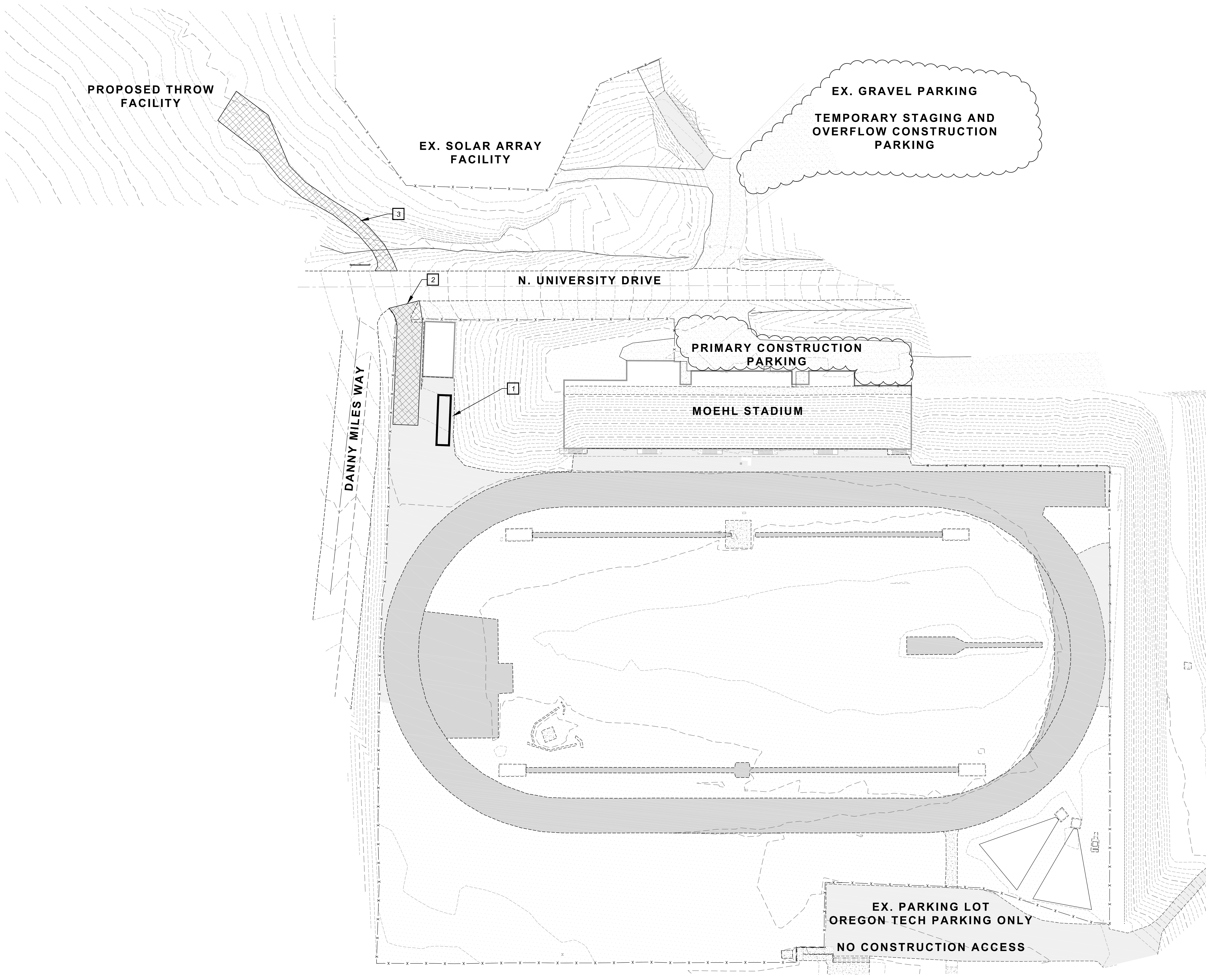
THROWS SURVEY



CONSTRUCTION NOTES:

1. □O□ TRAILER. CONTRACTOR TO PROVIDE TEMPORARY POWER VIA COND□IT FROM GRANDSTANDS..
2. CONSTR□CTION ENTRANCE FOR TRACK AND SOCCER FACILITIES. SEE DETAIL ON SHEET C-0.6. WIDEN OR REMOVE EXISTING GATE AS NECESSARY.
3. CONSTR□CTION ENTRANCE FOR THROWS FACILITY. SEE DETAIL ON SHEET C-0.6.

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(11x17 Double Scale)

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Medford	541.773.3387

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Seattle, Washington 98104
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Dra□n □□	TDP	D□re□tor De□s□on Date□	N.A.
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OREGON TECH TRACK AND SOCCER PRO□ECT

CONSTR□CTION DOC□MENTS

MAP NO. 38-09-00, TAX LOT 4900
3201 CAMPUS DRIVE, KLAMATH FALLS, OREGON
CITY PROJECT NO. OIT-270-P-13-17

VERIFY SCALES
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IF NOT ONE INCH ON THIS SHEET□AD□□ST SCALES ACCORDINGLY

REGISTERED PROFESSIONAL ENGINEER
OREGON
TODD D. POWELL
EXPIRES: 12/31/16

C-0.3

ACCESS & STAGING

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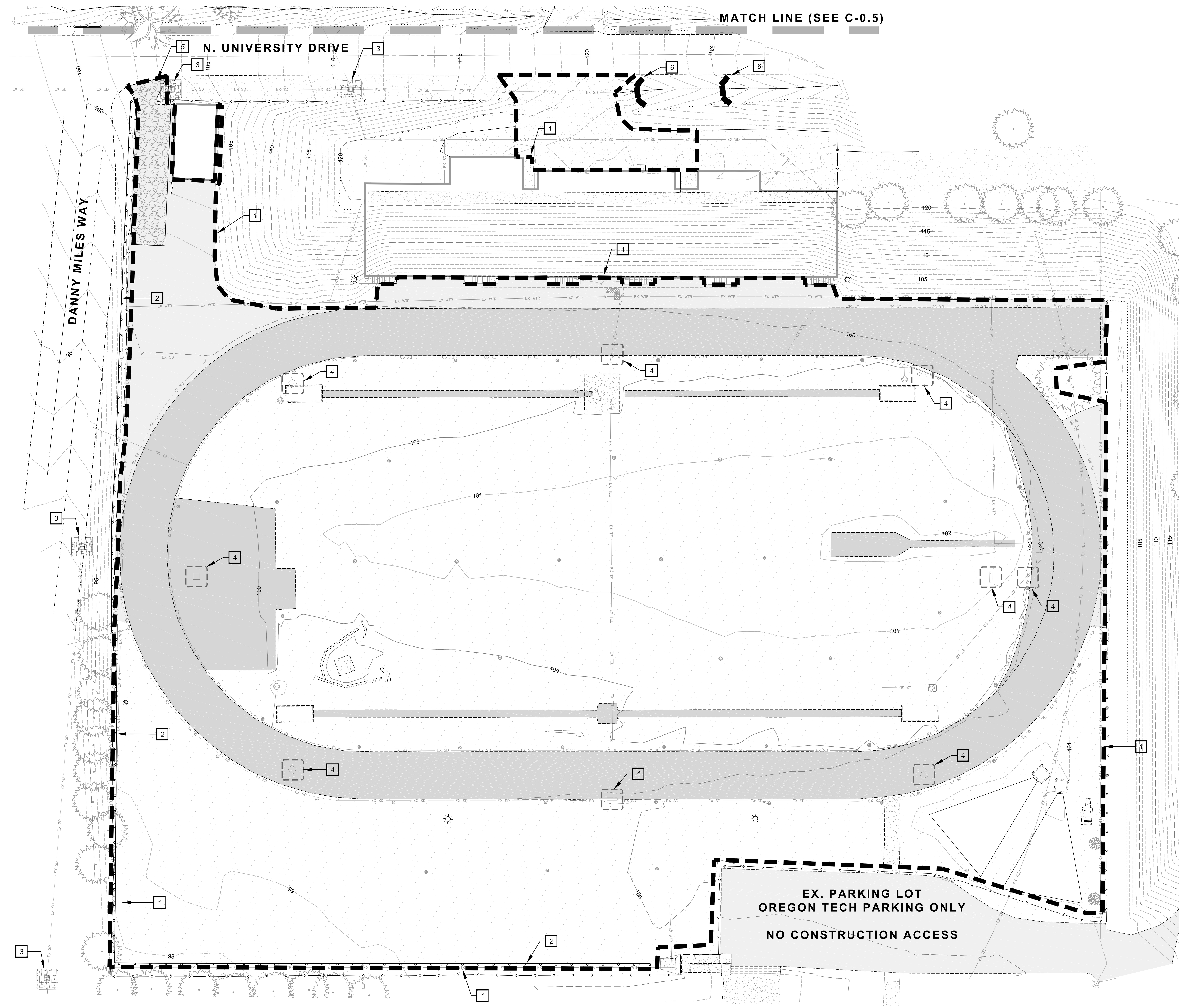

TESC LEGEND:

1	MAXIMUM CLEARING LIMITS	
2	INSTALL FILTER FABRIC FENCE PER DETAIL ON C-0.6	
3	INSTALL TYPE 4 INLET PROTECTION ON EXISTING CATCH BASINS (SEE DETAIL ON C-0.6)	
4	CONTRACTOR TO INSTALL INLET PROTECTION, AS REQUIRED, ON ALL PROPOSED CATCH BASINS (SEE DETAIL ON C-0.6)	
5	UTILIZE AND MONITOR EXISTING PAVED AREA AS TEMPORARY CONSTRUCTION ENTRANCE (TCE). MAINTAIN TCE AS NECESSARY TO ENSURE NO SEDIMENT TRACKING ONTO COLLEGE WAY. SEE TCE DETAIL ON C-0.6 FOR DESIGN GUIDELINES IF MAINTENANCE UPGRADES ARE REQUIRED OR IF EXISTING PAVEMENT IS DAMAGED.	
6	PROTECT EX. DITCH WITH CHECK DAMS OR STRAW BALE BARRIERS PER DETAILS ON C-0.6. INSTALL DOWNSTREAM OF DEVELOPMENT AT ALL CULVERT INLETS AND AT 50-FT O.C.	

WET WEATHER CONSTRUCTION

THE SITE SOILS ARE CONSIDERED MOISTURE SENSITIVE AND, AS SUCH, ARE SUSCEPTIBLE TO DISTURBANCE BY CONSTRUCTION EQUIPMENT, PARTICULARLY DURING PERIODS OF WET WEATHER. DURING WET WEATHER, THE CONTRACTOR SHALL MINIMIZE TRAFFIC ON PREPARED SOIL SUBGRADE AREAS. IF THE SITE SOILS ARE EXPOSED DURING WET WEATHER, THE USE OF CRUSHED ROCK PLACED AS ENGINEERED FILL IN THE BOTTOM OF THE EXCAVATIONS MAY BE NECESSARY TO PROTECT THE SUBGRADE. THE GRADING CONTRACTOR SHALL TAKE ALL PRECAUTIONS TO LIMIT SURFACE DISTURBANCE AND PROTECT THE SITE GRADING AREA FROM EXCESSIVE RUNOFF EROSION.

CLEARING LIMITS

CLEARING LIMITS SHOWN ON PLAN REPRESENTS MAXIMUM ALLOWABLE EXTENT OF CLEARING ON THE PROPERTY. OWNER MAY ELECT TO CLEAR LESS AREA OUTSIDE RIGHT-OF-WAY. DRAINAGE FACILITY DESIGN IS BASED ON ASSUMPTION OF MAXIMUM ALLOWED CLEARING.

MARKING OF CLEARING LIMITS AND PLACEMENT OF EROSION CONTROL FACILITIES IN FIELD SHALL BE ADJUSTED FOR ACTUAL EXTENTS OF CLEARING AS DIRECTED BY OWNER. CLEARING LIMITS SHALL BE CLEARLY MARKED IN FIELD PRIOR TO COMMENCEMENT OF SITE WORK.

SOIL STOCKPILES

THE TOP 3" OF SOD SHALL BE HAULED OFFSITE TO THE UNIVERSITY DISPOSAL / COMPOST SITE LOCATED APPROXIMATELY 1000-FT TO THE NORTHEAST AND IDENTIFIED ON C-0.0.

THE NEXT 6" OF TOPSOIL SHALL BE HAULED TO THE NORTH SIDE OF N. UNIVERSITY DRIVE AND STOCKPILED AS THE FINAL GROWING MEDIUM FOR THE OFFSITE THROWS FACILITY.

REMAINING EXCAVATION MATERIAL SHALL BE HAULED TO THE NORTH SIDE OF N. UNIVERSITY DRIVE, PLACED IN 8"-12" LIFTS AND SPREAD UNIFORMLY IN THE FILL LOCATION FOR THE OFFSITE THROWS VENUE.

SOIL CLASSIFICATION

REFER TO GEOTECHNICAL INVESTIGATION REPORT, DATED OCT. 5TH, 2014 BY AGE FOR ADDITIONAL INFORMATION.

Know what's **below.** **Call** before you dig.

AUSLAND GROUP
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Drawn By:	TDP	Director Decision Date:	N.A.
Designed By:	TDP	First Submittal Date:	
Checked By:	TDP/KMA	Second Submittal Date:	
Approved:		City Approval Date:	
Rev 1			
Rev 2			
Rev 3			
As-Built			

OREGON TECH TRACK AND SOCCER PROJECT
CONSTRUCTION DOCUMENTS
MAP NO. 38-09-00, TAX LOT 4900
3201 CAMPUS DRIVE, KLAMATH FALLS, OREGON
CITY PROJECT NO. OIT-270-P-13-17

VERIFY SCALES
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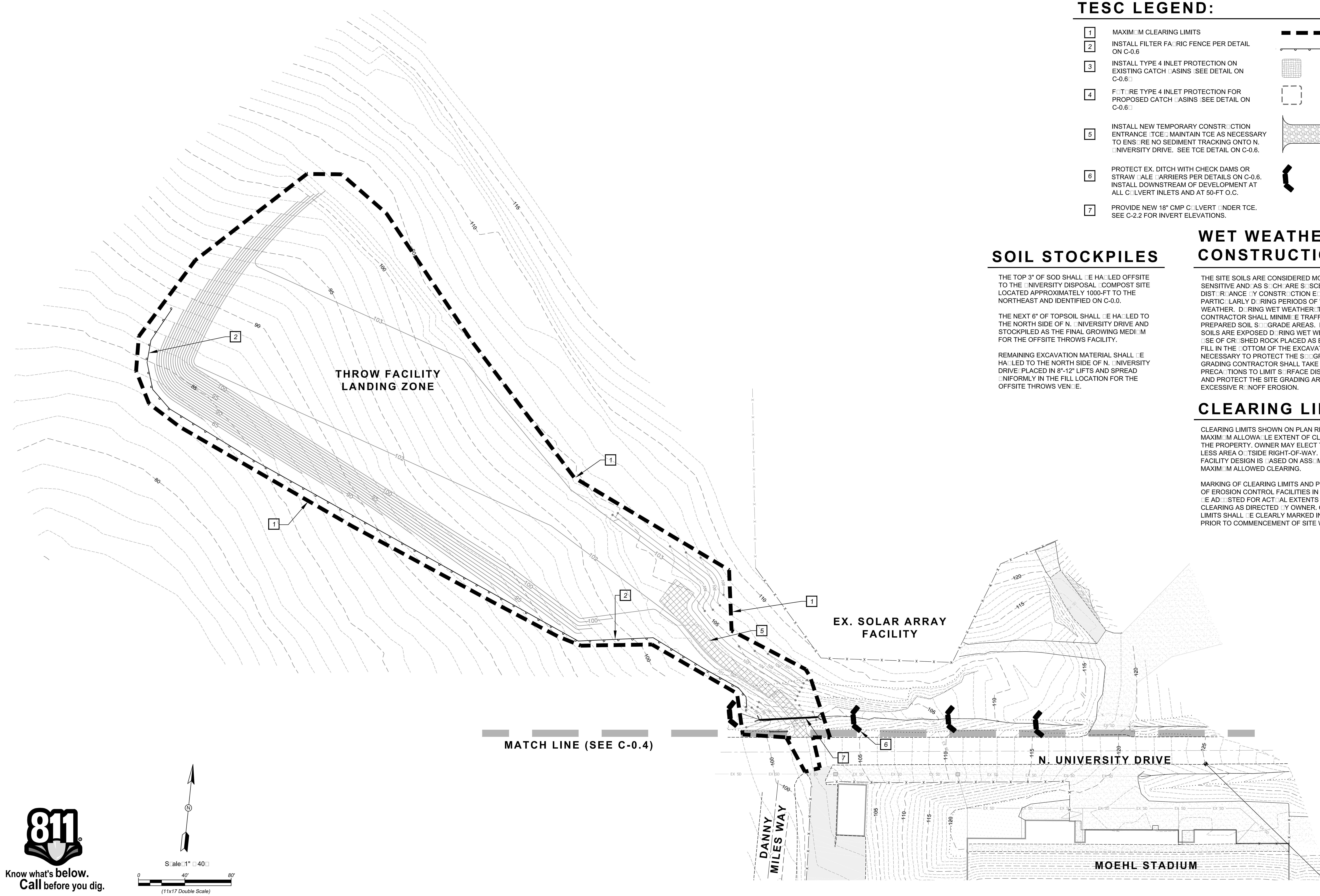
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

REGISTERED PROFESSIONAL ENGINEER
59425PE
OREGON
JULY 13, 2004
TODD D. POWELL
1-20-15
EXPIRES: 12/31/16

C-0.4
TRACK TESC

Drawing name: V:\Projects - Current\14-0708 OIT Soccer Track\Design\Pre Development Drawings\Working Drawings\14-0708 OIT CD Sheets.dwg
Plot Date: Jan 30, 2015 - 4:18pm



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4	FUTURE TYPE 4 INLET PROTECTION FOR PROPOSED CATCH BASINS (SEE DETAIL ON C-0.6)	
5	INSTALL NEW TEMPORARY CONSTRUCTION ENTRANCE (TCE). MAINTAIN TCE AS NECESSARY TO ENSURE NO SEDIMENT TRACKING ONTO N. UNIVERSITY DRIVE. SEE TCE DETAIL ON C-0.6.	
6	PROTECT EX. DITCH WITH CHECK DAMS OR STRAW BALE BARRIERS PER DETAILS ON C-0.6. INSTALL DOWNSTREAM OF DEVELOPMENT AT ALL CULVERT INLETS AND AT 50-FT O.C.	
7	PROVIDE NEW 18" CMP CULVERT UNDER TCE. SEE C-2.2 FOR INVERT ELEVATIONS.	

SOIL STOCKPILES

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OREGON TECH TRACK AND SOCCER PROJECT

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CITY PROJECT NO. OIT-270-P-13-17

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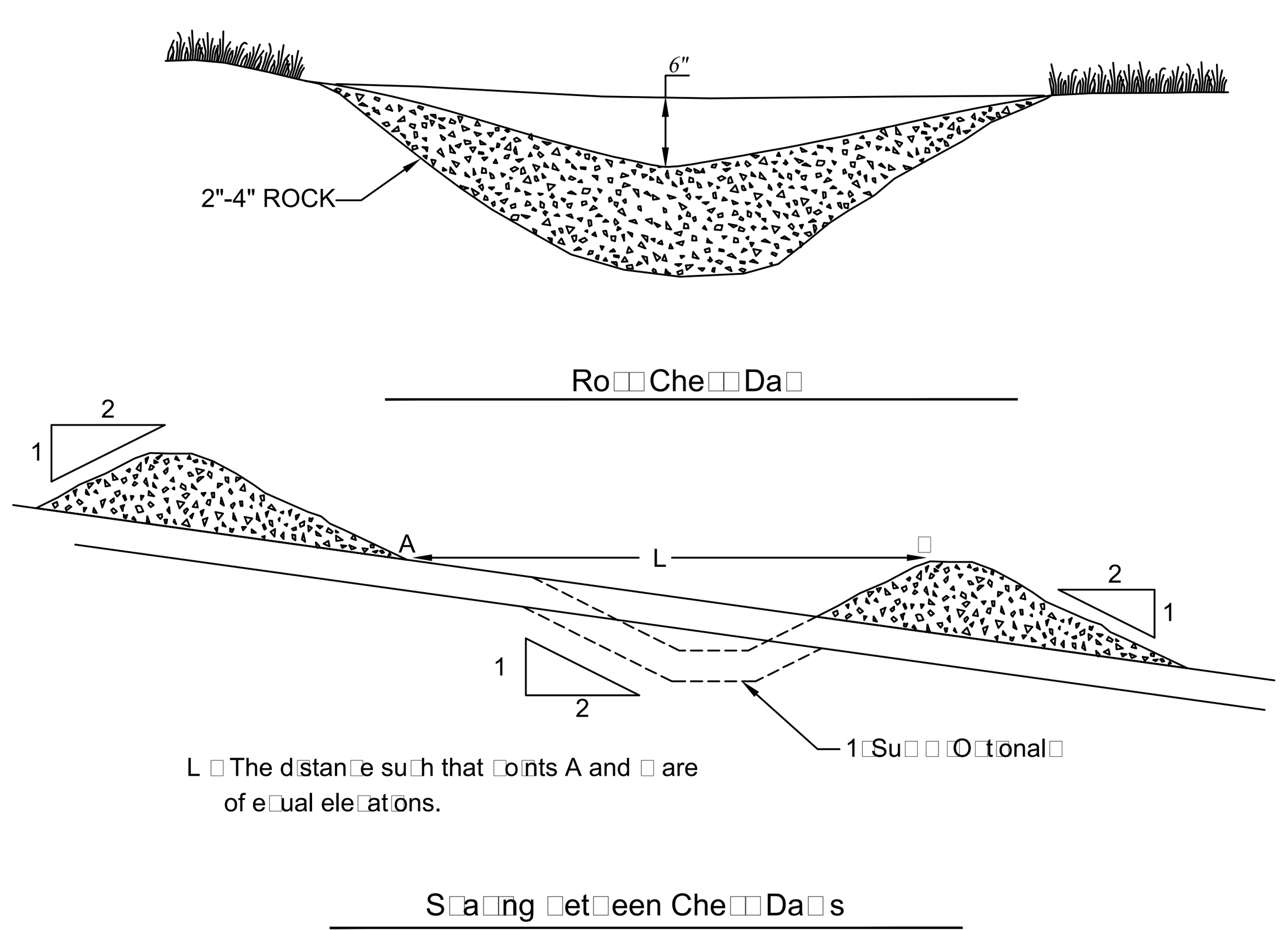
REGISTERED PROFESSIONAL ENGINEER
56425PE
OREGON
JAN. 13, 2004
TODD D. POWELL
1-12-15
EXPIRES: 12/31/16

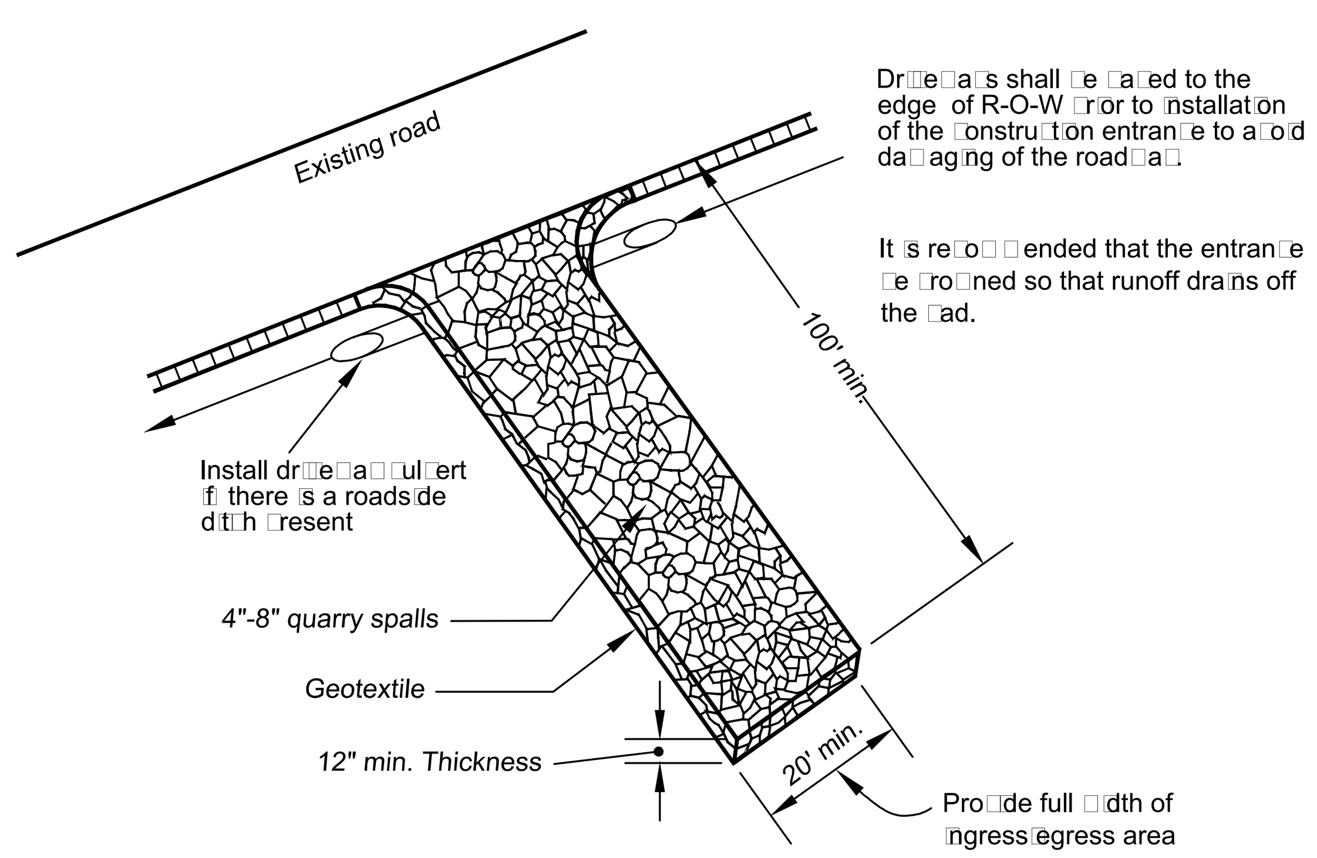
C-0.5

THROWS TESC



Typical Detail - Rock Check Dam

Scale: Not to Scale



Notes:

1. The entrance shall be maintained in a condition that will prevent tracking or flowing of sediment onto public right-of-ways. This may require top dressing, repair and/or clean out of any measures used to trap sediment.
2. If the entrance sits on a slope, place a filter fabric fence down gradient.
3. Top dress the pad with clean 3" minus rock when the construction entrance becomes clogged with sediments.
4. Any sediment carried from the site onto the street shall be cleaned up immediately.
5. If equipment travels extensively on unstabilized roads on the site, a tire and vehicle undercarriage wash near the entrance will be needed. Perform washing on crushed rock. Wash water will require treatment in a sediment pond or trap.
6. Where construction access abuts a curb, minimum 2" diameter pipe and cold-patch asphalt should be used to construct the approach in order to protect the curb and minimize obstruction to storm water flow in the gutter.
7. Trucks leaving the site shall egress across the full length of the pad.
8. Where runoff containing sediment laden water is leaving the site via the construction entrance, other measures shall be implemented to divert runoff through an approved filtering system.
9. Minimum Dimensions: Commercial
   100' long x 20' wide.
   (Governing authority may require geotextile fabric to prevent sub-soil pumping.)

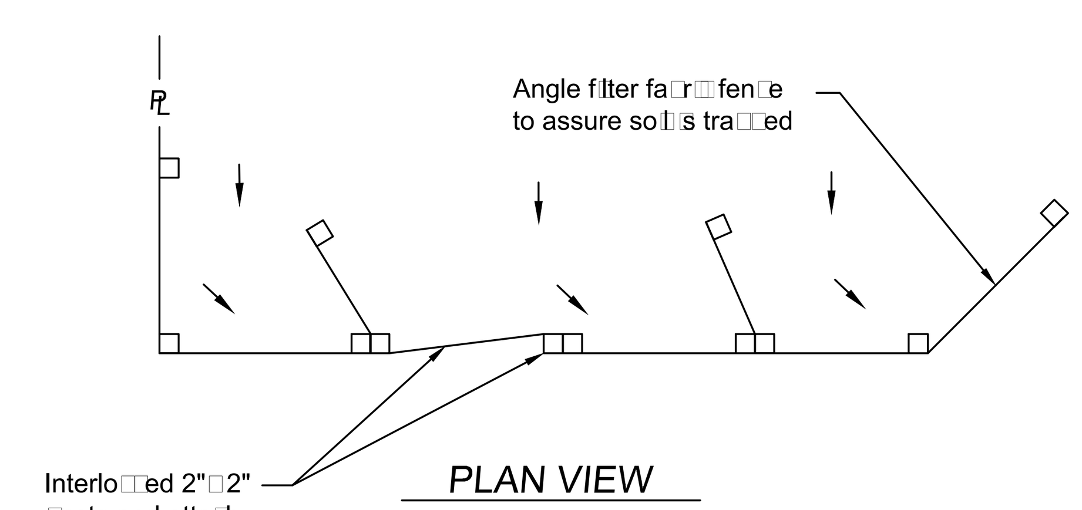
Standard Temporary Construction Entrance (TCE) Detail

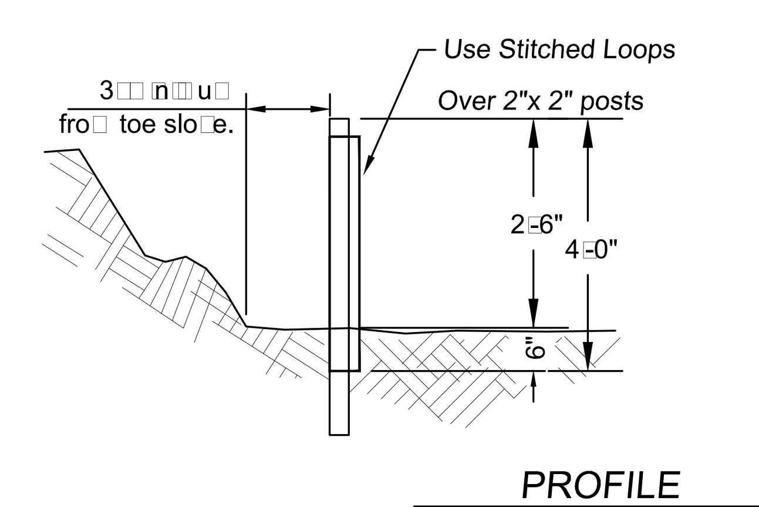
Scale: Not to Scale

Contractor Responsible for Erosion / Sediment Control

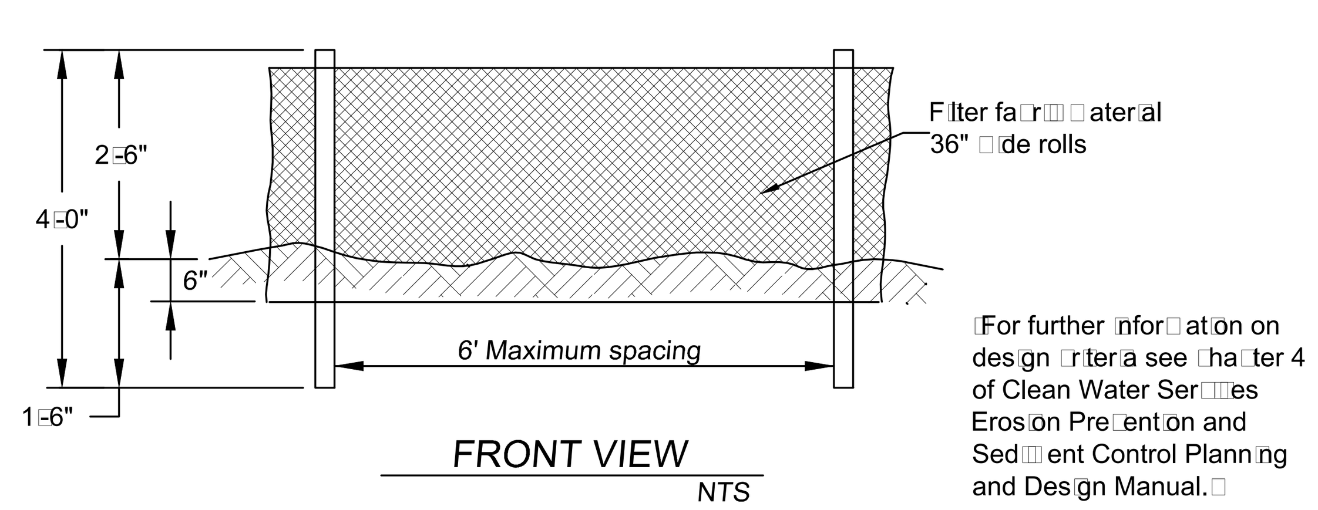
It is the intent of this temporary erosion and sediment control plan that storm water runoff be controlled at all times to prevent soil erosion and to maintain water quality. Any and all measures necessary to do so shall be employed by the contractor.

1. Regardless of site, weather, soil or other conditions, the contractor shall be fully responsible for ensuring that erosion does not occur on the site and that polluted or silt-laden runoff does not leave the site or enter into any creek, stream, wetland or water body on the site.
2. Beyond the minimum requirements shown on this plan, the contractor shall be responsible for selecting and implementing appropriate methods ("best management practices" (BMPs)) for storm water treatment and control that meet the requirements of the State and local jurisdiction.
3. The contractor shall report all water quality concerns and activities to the project engineer. In the event that the installed water quality control measures are ineffective at controlling erosion and sediment, the contractor shall immediately report to and consult with the project engineer to find an appropriate remedy. All construction activities, with the exception of erosion and sediment control measures, shall cease until such time as the water quality is brought under control.
4. The contractor shall be responsible for monitoring weather forecasts and anticipating storm activity and shall schedule all project activities in anticipation of the weather.
5. All supplies and materials necessary for implementing BMPs shall be stored on site and shall be immediately available for use. Such supplies and materials shall include, but not be limited to, straw bales or other mulching material, silt fencing and stakes, filter fabric, etc.
6. During and after runoff producing storm events, contractor shall monitor all erosion control measures and shall prioritize implementation and maintenance of erosion and sediment control measures above all others.





Notes:
1. Bury bottom of filter fabric 6" vertically below finished grade.
2. 2"x2" fir, pine or steel fence posts.
3. Posts to be installed on uphill side of slope.
4. Compact both sides of filter fabric trench.



For further information on design criteria see chapter 4 of Clean Water Services Erosion Prevention and Sediment Control Planning and Design Manual.

Typical Filter Fabric Fence Detail

Scale: Not to Scale

Geotechnical Engineers TESC Notes

(Refer to Geotechnical Investigation Report dated Oct. 5th, 2014 by AGE for additional information)

The intent of the erosion control plan is to decrease erosion and off-site migration of soils. Typical measures used to decrease off-site migration include use of hay bales and rock coverings or check dams holding the soil in place, establishing a vegetation cover as soon as practical, and redirecting surface water flow away from areas disturbed by construction activities.

We anticipate that a portion of the property will be disturbed during construction of the proposed new turf, however, the disturbed area will have significant vegetation surrounding the area and the disturbed area will be covered with imported crushed rock as soon as practical after the subgrade is exposed so the risk of off-site transport of soil particles is low.

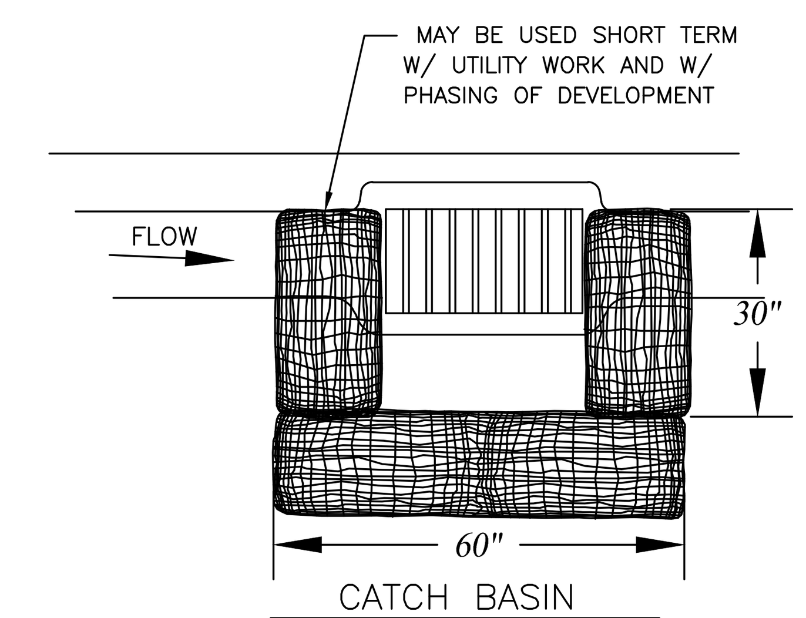
Surface water runoff from upslope of the disturbed area should be directed away from the construction area. Surface water flow on the exposed soil should move as sheet flow rather than concentrated flow.

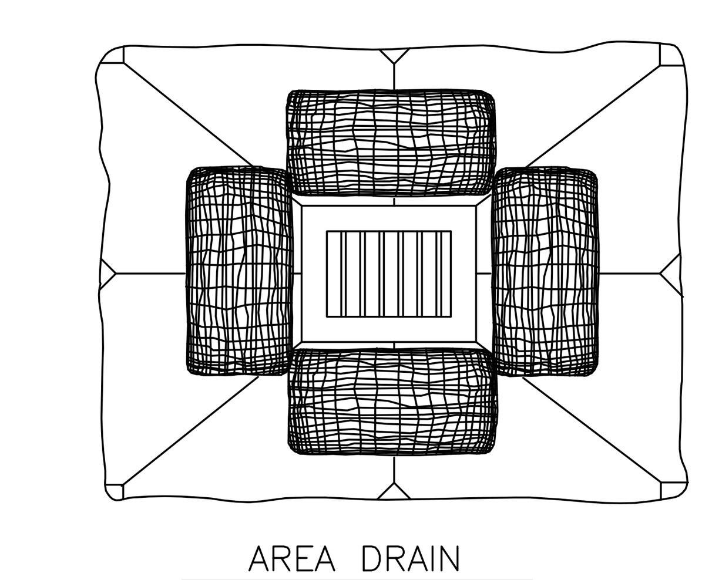
Runoff from the disturbed portion of the site may contain some soil material. To further reduce the risk of sediment leaving the site during periods of wet weather (typically winter and spring months), small settling basins can be installed at the start of the wet season below the site at the discharge end of graded areas, ditches and swale areas. Straw bales should be staked along the downhill edge of the settling basin. Water can be discharged from the settling basin using 4-in.-diameter flex pipe. The settling basins should
be installed no later than September 30.

Straw bales or silt fencing should be installed along the downhill edge (south and west sides) of the proposed construction. The silt fence should be embedded at least 4 in. into the ground and should be staked in place. The straw bales should be placed end-to-end and staked in place to prevent separation between the bales. The silt fence and straw bales should be placed to direct surface water runoff from the site towards the settlement basins.

During construction and prior to establishment of the site landscaping, the erosion control measures must be monitored and may require periodic maintenance. Maintenance may include removal of sediment from upslope of the straw bales or silt fence, removal of sediment from the settlement basins, and the placement of additional straw bales or sediment fence. The amount of required maintenance of the erosion control measures will decrease significantly as the landscaping becomes established.

The responsible person for the erosion control should evaluate the erosion control measures periodically during construction, including on about September 30 and after storm events. The intent of the evaluation would be to determine if additional measures need to be installed and if maintenance of the system needs to be completed.





NOTES:
1. ADDITIONAL MEASURES MUST BE CONSIDERED DEPENDING ON SOIL TYPES.
2. BIO-FILTER BAGS SHOULD BE STAKED WHERE APPLICABLE USING (2) 1"x2" WOODEN STAKES OR APPROVED EQUAL PER BAG.
3. WHEN USING 30" BIO-BAGS TO PROTECT A CATCH BASIN YOU MUST HAVE 4 BAGS AND THEY SHALL BE OVERLAPPED BY 6".

Typical Detail - Type 4 Inlet Protection

Scale: Not to Scale

Erosion & Sedimentation Control Notes:

1. Hold a pre-construction meeting of project construction personnel that includes the inspector to discuss erosion and sediment control measures and construction limits.
2. All inspections must be made in accordance with DEQ 1200-C permit requirements.
3. Inspection logs must be kept in accordance with DEQ's 1200-C permit requirements.
4. Retain a copy of the ESCP and all revisions on site and make it available on request to DEQ, Agent, or the local municipality. During inactive periods of greater than seven (7) consecutive calendar days, retain the ESCP at the construction site or at another location.
5. All permit registrants must implement the ESCP. Failure to implement any of the control measures or practices described in the ESCP is a violation of the permit.
6. The ESCP measures shown on this plan are minimum requirements for anticipated site conditions. During the construction period, upgrade these measures as needed to comply with all applicable local, state, and federal erosion and sediment control regulations.
7. Submission of all ESCP revisions is not required. Submittal of the ESCP revisions is only under specific conditions. Submit all necessary revision to DEQ or Agent.
8. Phase clearing and grading to the maximum extent practical to prevent exposed inactive areas from becoming a source of erosion.
9. Identify, mark, and protect (by fencing off or other means) critical riparian areas and vegetation including important trees and associated rooting zones, and vegetation areas to be preserved. Identify vegetative buffer zones between the site and sensitive areas (e.g., wetlands), and other areas to be preserved, especially in perimeter areas.
10. Preserve existing vegetation when practical and re-vegetate open areas. Re-vegetate open areas when practicable before and after grading or construction. Identify the type of vegetative seed mix used.
11. Erosion and sediment control measures including perimeter sediment control must be in place before vegetation is disturbed and must remain in place and be maintained, repaired, and promptly implemented following procedures established for the duration of construction, including protection for active storm drain inlets and catch basins and appropriate non-storm water pollution controls.
12. Establish concrete truck and other concrete equipment washout areas before beginning concrete work.
13. Apply temporary and/or permanent soil stabilization measures immediately on all disturbed areas as grading progresses and for all roadways including gravel roadways.
14. Establish material and waste storage areas, and other non-storm water controls.
15. Prevent tracking of sediment onto public or private roads using BMPs such as: graveled (or paved) exits and parking areas, gravel all unpaved roads located onsite, or use an exit tire wash. These BMPs must be in place prior to land-disturbing activities.
16. When trucking saturated soils from the site, either use water-tight trucks or drain loads on site.
17. Use BMPs to prevent or minimize storm water exposure to pollutants from spills; vehicle and equipment fueling, maintenance, and storage; other cleaning and maintenance activities; and waste handling activities. These pollutants include fuel, hydraulic fluid, and other oils from vehicles and machinery, as well as debris, leftover paints, solvents, and glues from construction operations.
18. Implement the following BMPs when applicable: written spill prevention and response procedures, employee training on spill prevention and proper disposal procedures, spill kits in all vehicles, regular maintenance schedule for vehicles and machinery, material delivery and storage controls, training and signage, and covered storage areas for waste and supplies.
19. Use water, soil-binding agent or other dust control technique as needed to avoid wind-blown soil.
20. The application rate of fertilizers used to reestablish vegetation must follow manufacturer's recommendations to minimize nutrient releases to surface waters. Exercise caution when using time-release fertilizers within any waterway riparian zone.
21. If a storm water treatment system (for example, electro-coagulation, flocculation, filtration, etc.) for sediment or other pollutant removal is employed, submit an operation and maintenance plan (including system schematic, location of system, location of inlet, location of discharge, discharge dispersion device design, and a sampling plan and frequency) before operating the treatment system. Obtain plan approval before operating the treatment system. Operate and maintain the treatment system according to manufacturer's specifications.
22. Temporarily stabilize soils at the end of the shift before holidays and weekends, if needed. The registrant is responsible for ensuring that soils are stable during rain events at all times of the year.
23. At the end of each workday soil stockpiles must be stabilized or covered, or other BMPs must be implemented to prevent discharges to surface waters or conveyance systems leading to surface waters.
24. Construction activities must avoid or minimize excavation and creation of bare ground during wet weather.
25. Sediment fence: remove trapped sediment before it reaches one third of the above ground fence height and before fence removal.
26. Other sediment barriers (such as biobags): remove sediment before it reaches two inches depth above ground height. and before BMP removal.
27. Catch basins: clean before retention capacity has been reduced by fifty percent. Sediment basins and sediment traps: remove trapped sediments before design capacity has been reduced by fifty percent and at completion of project.
28. Within 24 hours, significant sediment that has left the construction site must be remediated. Investigate the cause of the sediment release and implement steps to prevent a recurrence of the discharge within the same 24 hours. Any in-stream clean up of sediment shall be performed according to the Oregon Division of State Lands required timeframe.
29. The intentional washing of sediment into storm sewers or drainage ways must not occur. Vacuuming or dry sweeping and material pickup must be used to cleanup released sediments.
30. The entire site must be temporarily stabilized using vegetation or a heavy mulch layer, temporary seeding, or other method should all construction activities cease for 30 days or more.
31. Provide temporary stabilization for that portion of the site where construction activities cease for 14 days or more with a covering of blown straw and a tackifier, loose straw, or an adequate covering of compost mulch until work resumes on that portion of the site.
32. Provide permanent erosion control measures on all exposed areas. Do not remove temporary sediment control practices until permanent vegetation or other cover of exposed areas is established. However, do remove all temporary erosion control measures as exposed areas become stabilized, unless doing so conflicts with local requirements. Properly dispose of construction materials and waste, including sediment retained by temporary BMPs.

AUSLAND GROUP

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OREGON TECH TRACK AND SOCCER PROJECT

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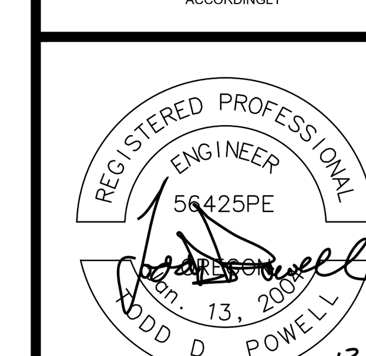


EXPIRES: 12/31/16

C-0.6

TESC DETAILS

Drawing name: V:\Projects - Current\14-0708 OIT Soccer Track\Design\Pre Development Drawings\Working Drawings\14-0708 OIT C.0 Sheets.dwg
Plot Date: Jan 12, 2015 - 4:05pm

AUSLAND PROJECT NO: 14-0708

CONTRACTOR RESPONSIBILITY

KEY NOTES□

1. CONTRACTOR SHALL PREPARE THE SITE FOR TEMPORARY PATHWAYS AND COMMENCEMENT STAGING AREAS VIA MINIM□M 6" COMPACTED AGGREGATE ON FIRM AND □NYIELDING S□□GRADE. WIDTH 12□PL□S 2□1 SIDE SLOPES AS NECESSARY. 1□20 MAXIM□M SLOPE IN DIRECTION OF TRAVEL. 1□50 MAXIM□M CROSS SLOPE. PROVIDE POSITIVE DRAINAGE.
2. CONTRACTOR SHALL INSTALL TEMPORARY CHAIN LINK FENCING □MIN. 6-FT HEIGHT□ARO□ND CEREMONY AREAS. CONS□LT WITH OREGON TECH PRIOR TO INSTALL FOR GATE LOCATIONS.
3. CONTRACTOR □SE OF THE SITE □□NE 6 - □□NE 15□O□TSIDE OF THE CEREMONY AREA IS LIMITED TO D□ST CONTROL ONLY. AT MINIM□M□CONTRACTOR SHALL PROVIDE D□ST CONTROL OVER ALL EXPOSED S□RFACES THE MORNING OF □□NE 13TH AND PRIOR TO 10□00a□.
4. CONTRACTOR SHALL PROTECT IN PLACE THE EXISTING TRACK S□RFACING AND ASPHALT IN FRONT AND TO THE WEST OF THE GRANDSTANDS □NTIL □□NE 15TH.

GENERAL NOTES□

1□ CONTRACTOR SHALL DE-MO□ILI□E AND HAVE THE SITE PREPARED FOR COMMENCEMENT □Y 7□00PM□SAT□RDAY□□□NE 6TH.

2□ CONTRACTOR CAN RE-MO□ILI□E TO THE SITE AT 7□00AM□ MONDAY□□□NE 15TH.

3□ WITH THE EXCEPTION OF THE WATER TR□CK□ALL E□□IPMENT SHALL □E TAKEN OFFSITE □Y 7□00PM□SAT□RDAY□□□NE 6TH.

4□ OREGON TECH RE□□IRES THE □SE OF THE GRAVEL PARKING AREA ASSOCIATED WITH THE SOLAR ARRAY. THEREFORE□THIS AREA IS OFF LIMITS TO THE CONTRACTOR FOR STAGING D□RING COMMENCEMENT.

5□ THE CONTRACTOR SHALL ACCESS THE SITE ON THE MORNING OF JUNE 13 (DAY OF COMMENCEMENT) TO "WATER DOWN" FOR D□ST CONTROL. WATER DOWN SHALL □E COMPLETED PRIOR TO 8□30AM.

6□ CONTRACTOR COMMENCEMENT PREPARATIONS SHALL CONSIST OF□

- 6□a. 12□WIDE COMPACTED AGGREGATE PATHWAY FROM SO□TH PARKING LOT GATE TO SEATING AREA □KEYNOTE 1□.
- 6□□. ADDITIONAL COMPACTED AGGREGATE AS NECESSARY TO ACCOMMODATE A FLAT□WALKA□LE S□RFACE FOR TEMPORARY STAGING □KEYNOTE 1□.
- 6□□. 6□- 8□TALL CHAIN LINK FENCING ARO□ND THE PROTECTED AREA IN FRONT OF THE GRANDSTANDS □KEYNOTE 2□.
- 6□d. POWER AND WATER SHALL □E AVAILA□LE TO THE GRANDSTANDS.
- 6□e. ALL AREAS S□□□ECT TO PEDESTRIAN OR VEHIC□LAR TRAFFIC D□RING COMMENCEMENT CEREMONY SHALL □E LEFT IN A S□ITA□LE CONDITION TO ACCOMMODATE S□CH TRAFFIC. CONTRACTOR SHALL INSTALL COMPACTED GRAVEL AND□OR TEMPORARY ASPHALT AS NECESSARY TO ACHIEVE□TO THE MAXIM□M EXTENT FEASI□LE□A S□RFACE ACCEPTA□LE FOR P□□LIC INGRESS □EGRESS.

OREGON TECH RESPONSIBILITY

KEY NOTES□

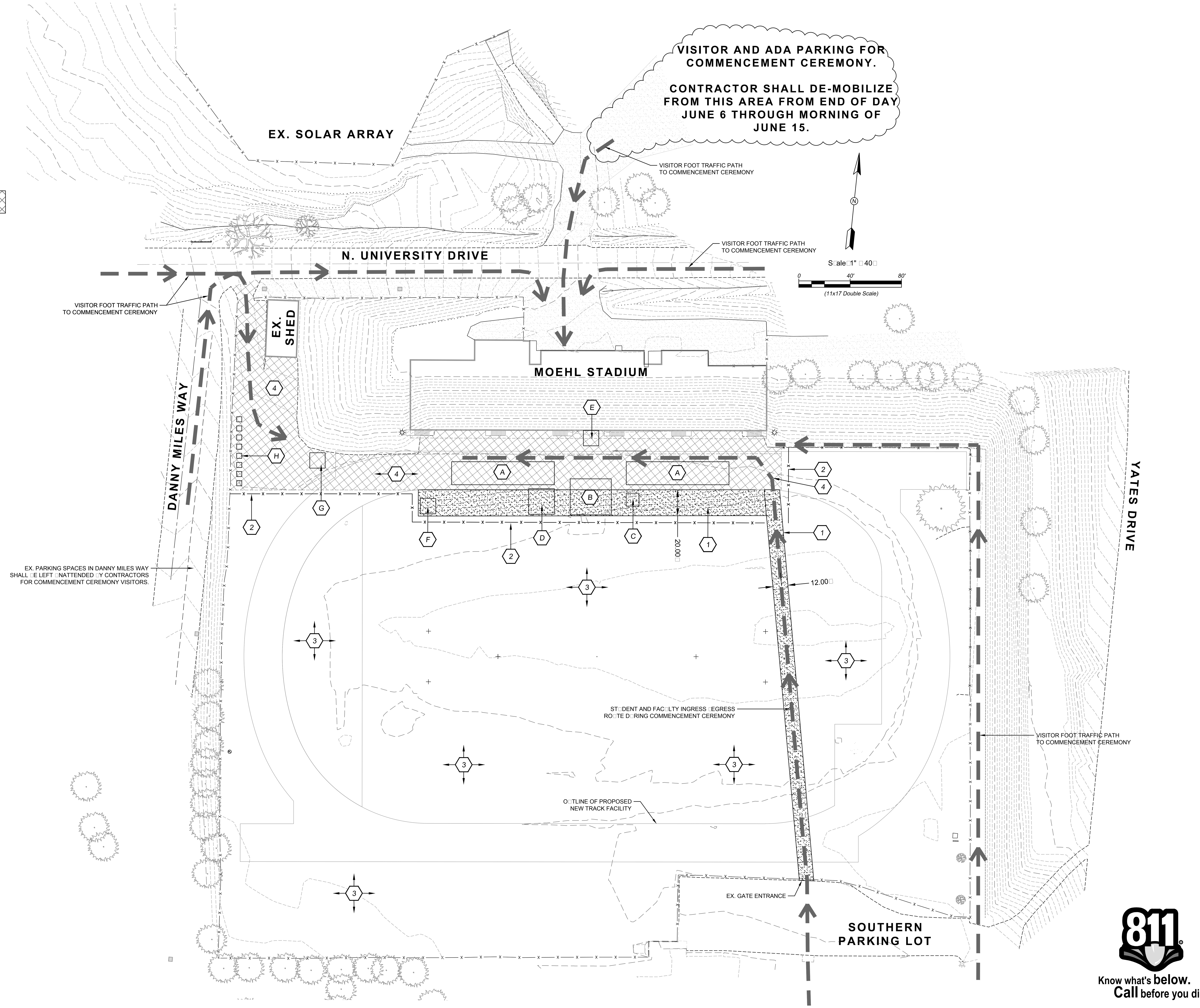
- A. CHAIR PREPARATION FOR ST□DENT SEATING AREAS □APPROX. 18□□80□EACH□
- B. INSTALLATION AND REMOVAL OF TEMPORARY STAGING FOR CEREMONY □28□□32□□
- C. INSTALLATION AND REMOVAL OF INTERPRETATION STAGE □10□□10□□
- D. CHAIR PREPARATION FOR GOLDEN OWL SEATING □20□□20□□
- E. INSTALLATION AND REMOVAL OF THE SO□ND CONTROL AND VIDEOGRAPHER STAGING AREA □12□□12□□
- F. INSTALLATION AND REMOVAL OF FIRST AID TENT □12□□12□□
- G. INSTALLATION AND REMOVAL OF EMERGENCY SERVICES TENT.
- H. INSTALLATION AND REMOVAL OF PORTA□LE RESTROOM FACILITIES.

GENERAL NOTES□

1□ OREGON TECH TO COORDINATE□P□RCHASE□INSTALL□AND REMOVE A WALKING S□RFACE MATERIAL □CARPET□PLYWOOD□MDF□ETC□S□ITA□LE FOR PLACEMENT ON TOP OF THE CONTRACTOR INSTALLED AGGREGATE PATHWAYS.

2□ OREGON TECH TO COORDINATE□P□RCHASE□INSTALL□AND REMOVE PLASTIC FENCING AND ASSOCIATED □RACING MATERIAL FOR SCREENING ALONG □OTH SIDES OF THE CONTRACTOR INSTALLED AGGREGATE PATHWAY FROM THE SO□THERN PARKING LOT TO THE SEATING AREA.

3□ OREGON TECH TO COORDINATE□P□RCHASE□INSTALL□AND REMOVE PLASTIC SCREENING □WIND □REAK MATERIAL TO □E PLACED VERTICALLY ON THE TEMPORARY CHAIN LINK FENCING S□RRO□NDING THE CEREMONY AREA.



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OREGON TECH TRACK AND SOCCER PRO□ECT

CONSTR□CTION DOC□MENTS

MAP NO. 38-09-00, TAX LOT 4900
3201 CAMPUS DRIVE, KLAMATH FALLS, OREGON
CITY PROJECT NO. OIT-270-P-13-17

VERIFY SCALES

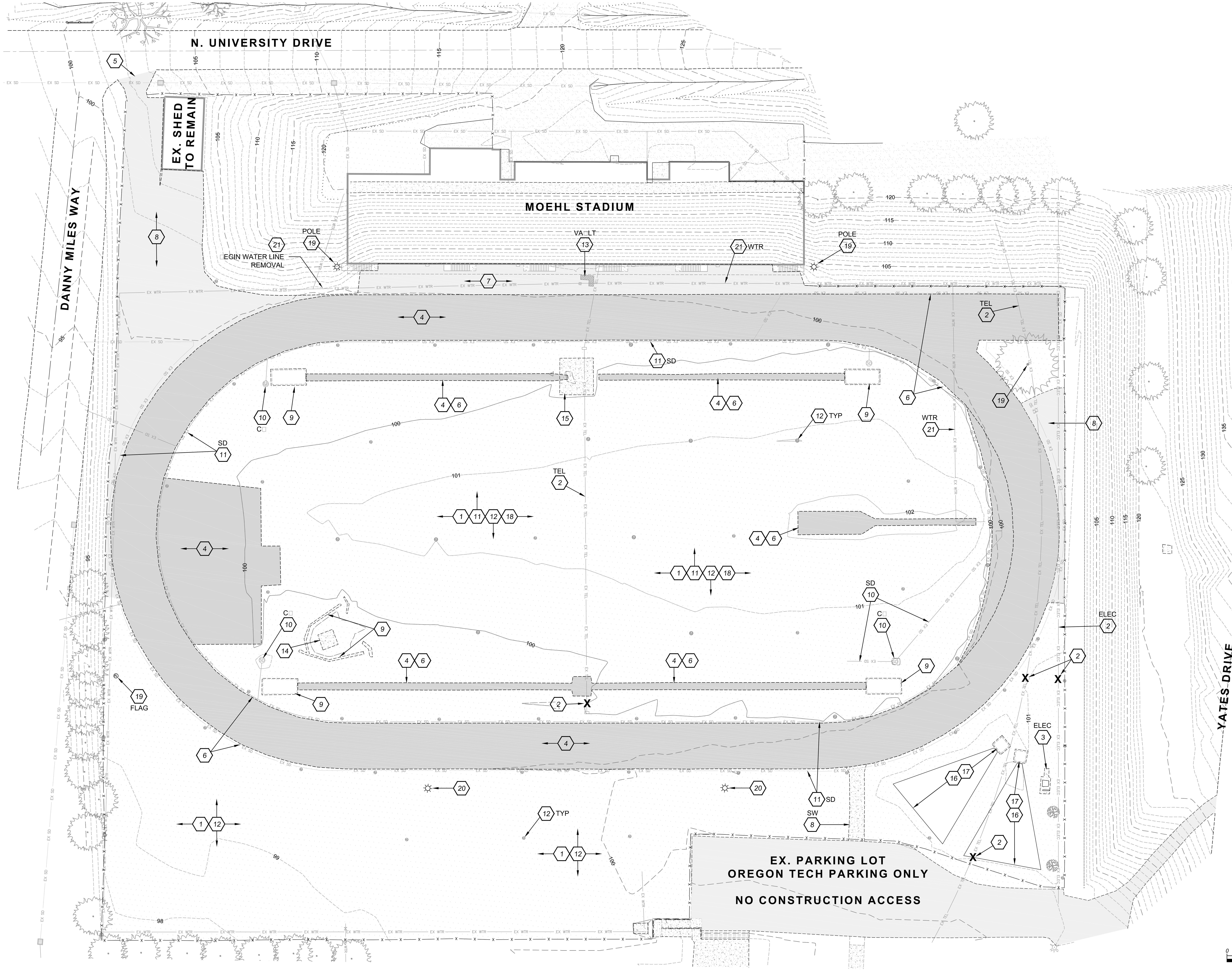
REGISTERED PROFESSIONAL ENGINEER 56425PE OREGON JAN. 13, 2004 TODD D. POWELL
EXPIRES: 12/31/16

C-0.7

Interim Site Condition

AUSLAND PROJECT NO: 14-0708

A PORTION OF SECTIONS 17 & 20, TOWNSHIP 38S., RANGE 9E., W.M., KLAMATH COUNTY, OREGON



DEMOLITION NOTES:

1. REMOVE EXISTING INFIELD SOD MATERIAL TO A DEPTH OF 3" □0.25□ AND HA□L TO THE DESIGNATED DISPOSAL SITE ON CAMP□S□APPROX. 2 □LOCKS NORTHEAST OF THE CONSTR□CTION SITE.
2. THE CONTRACTOR SHALL HAND EXCAVATE TO THE TOP OF EXISTING POWER AND COMM□NICATION COND□ITS IN ASS□MED LOCATIONS AND NOTIFY THE PRO□ECT ENGINEER IN WRITING OF THE LOCATION AND ELEVATIONS PRIOR TO THE DEMOLITION AND CONSTR□CTION ACTIVITIES. THE EXISTING POWER AND COMM□NICATION COND□ITS SHALL □E PROTECTED THRO□GHO□T ALL DEMOLITON AND CONSTR□CTION ACTIVITIES.
3. PROTECT EXISTING TRANSFORMER □ ELECTRICAL□COMM□NICATION E□□IPMENT THRO□GHO□T CONSTR□CTION.
4. REMOVE ALL EXISTING R□□□ERI□ED R□NNING TRACK AND FIELD EVENT S□RFACING AND DISPOSE OF OFFSITE.
5. SAWC□T EXISTING ASPHALT PAVING. CONTRACTOR SHO□LD ANTICICIPATE DAMAGE TO THE WORK IN PROGRESS AND NOT C□T TO THE FINAL LIMIT □NTIL READY TO PAVE □ACK TO THE NEAT EDGE.
6. REMOVE EXISTING TRACK AND FIELD EVENT ASPHALT AND CONCRETE PAVING AND DISPOSE OF OFFSITE. THE CONTRACTOR SHALL ASS□ME REMOVAL AND OFFSITE DISPOSAL OF AN EXISTING CONCRETE C□R□ □ELOW THE S□RFACE OF THE TRACK ASPHALT PAVING AT THE TRACK INTERIOR AND EXTERIOR EDGES.
7. REMOVE EXISTING ASPHALT PAVING □ETWEEN GRANDSTAND AND R□NNING TRACK AND DISPOSE OF OFFSITE. PROTECT EXISTING GRANDSTAND STR□CT□RE□STAIRWAYS□AND □TILITIES IN□THE AREA THRO□GHO□T CONSTR□CTION.
8. REMOVE EXISTING CONCRETE□ASPHALT PAVING AND DISPOSE OF OFF SITE.
9. REMOVE EXISTING CONCRETE C□R□ING AND DISPOSE OF OFF SITE.
10. REMOVE EXISTING CATCH □ASINS AND DISPOSE OF OFF SITE. CAP EXISTING DRAINLINE TO REMAIN □IF APPLICA□LE□ □ACKFILL EXCAVATED AREAS WITH STR□CT□RAL FILL TO 95□ COMPACTION WITH 12 INCH MAXIM□M LIFTS.
11. REMOVE ALL EXISTING S□□S□RFACE DRAINAGE LATERAL PERFORATED PIPING AND COLLECTOR PIPING FROM THE FIELD AREA AND DISPOSE OF OFFSITE. □ACKFILL EXCAVATED AREAS WITH STR□CT□RAL FILL OR EXISTING SAND OR PEA GRAVEL TO 95□ COMPACTION WITH 12 INCH MAXIM□M LIFTS.
12. REMOVE ALL EXISTING SPRINKLER HEADS AND RISER ASSEM□LIES□CLEAN THORO□GHLY□PACKAGE□AND DELIVER TO THE OWNER ONSITE. □ACKFILL EXCAVATED AREAS WITH STR□CT□RAL FILL TO 95□ COMPACTION WITH 12 INCH MAXIM□M LIFTS.
13. REMOVE EXISTING IRRIGATION VALVES AND □OXES□CLEAN THORO□GHLY□PACKAGE□AND DELIVER TO THE OWNER ONSITE. □ACKFILL EXCAVATED AREAS WITH STR□CT□RAL FILL TO 95□ COMPACTION WITH 12 INCH MAXIM□M LIFTS.
14. REMOVE EXISTING DISC□S CAGE CONCRETE FOOTINGS AND SLEEVES AND DISPOSE OF OFFSITE. □ACKFILL EXCAVATED AREAS WITH STR□CT□RAL FILL TO 95□ COMPACTION WITH 12 INCH MAXIM□M LIFTS.
15. REMOVE EXISTING POLE VA□LT □OXES AND CONCRETE □ASE AND DISPOSE OF OFF SITE.
16. REMOVE EXISTING SHOT P□T LANDING AREA EDGING AND DISPOSE OF OFF SITE.
17. REMOVE EXISTING CIDERS AND STOCKPILE ONSITE FOR RE-□SE IN NEW SHOT P□T LANDING AREA.
18. EXISTING EXCAVATED SAND ROOT □ONE MATERIAL FROM FIELD AREA TO □E □SED AS FILL FOR □ACKFILLING AND RESTORATION OF THE PERIMETER AREAS
19. PROTECT IN PLACE EXISTING ITEM
20. C□T AND REMOVE EXISTING WOOD LIGHT POLE AND DISPOSE OF OFFSITE. C□T MINIM□M 2-FEET □ELOW PROPOSED S□□GRADE.
21. REMOVE EXISTING WATER LINE AND DISPOSE OF OFFSITE.

S□ale□1" □30□ (11x17 Double Scale)

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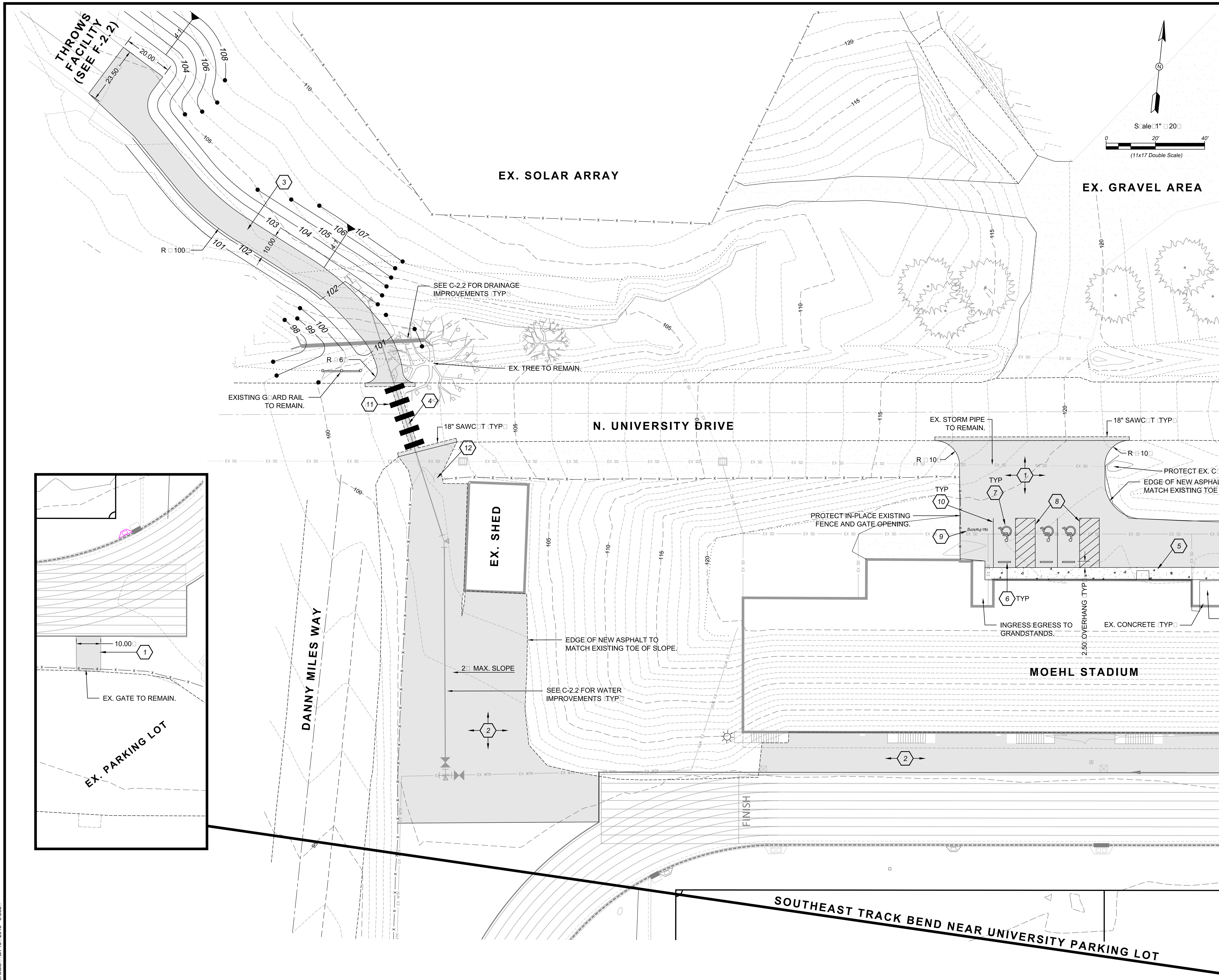
OREGON TECH TRACK AND SOCCER PRO□ECT
CONSTR□CTION DOC□MENTS
MAP NO. 38-09-00, TAX LOT 4900
3201 CAMPUS DRIVE, KLAMATH FALLS, OREGON
CITY PROJECT NO. OIT-270-P-13-17

VERIFY SCALES

EXPIRES: 12/31/16

C-1.1
TRACK DEMO

AUSLAND PROJECT NO: 14-0708



Construction Notes:

1. NEW PAVEMENT PER DETAIL 5 ON C2.3.
2. REPLACE EXISTING PAVEMENT. SEE DETAIL 4 ON C2.3.
3. CONSTRUCT NEW 10-FT WIDE PAVED SERVICE VEHICLE AND PEDESTRIAN PATH TO THROWS FACILITY. SEE DETAIL 5 ON C2.3. MAXIMUM SLOPE 2% IN ALL DIRECTIONS.
4. TRENCH RESTORATION AND PAVEMENT PATCH.
5. NEW 5-FT CONCRETE SIDEWALK WITH GEOTHERMAL TUBING PER DETAIL 8 ON C-2.3. NO CURB. TOP OF CONCRETE TO MATCH TOP OF ASPHALT.
6. INSTALL WHEEL STOP PER DETAIL 7 ON C2.3. ATTACH EACH END WITH REBAR THROUGH ASPHALT.
7. PROVIDE INTERNATIONAL SYMBOL OF ACCESSIBILITY PAVEMENT MARKING PER ICC ANSI A117.1 SECTION 502, CHAPTER 11, FIGURE 1. SEE DETAIL 6 ON C2.3.
8. PROVIDE 8' WIDE VAN ACCESSIBLE ACCESS AISLE MARKING PER ICC ANSI A117.1 SECTION 502 CHAPTER 11, FIGURE 2. SEE DETAIL 6 ON C2.3.
9. INSTALL WHITE "NO PARKING" PAINT LETTERING PER MUTCD STANDARDS.
10. INSTALL NEW 4" SOLID WHITE PARKING STRIPING PER MUTCD STANDARDS.
11. INSTALL NEW 24" SOLID WHITE CROSSWALK STRIPING PER MUTCD STANDARDS. SEE DETAIL 2 ON C2.3.
12. INSTALL NEW 15' WIDE DOUBLE SWING GATE PER DETAIL 3 ON F-7.10.

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DA HOGAN

Drawn: TDP | Designed: TDP | Checked: TDP, KMA

OREGON TECH TRACK AND SOCCER PROJECT

CONSTRUCTION DOCUMENTS

MAP NO. 38-09-00, TAX LOT 4900
3201 CAMPUS DRIVE, KLAMATH FALLS, OREGON
CITY PROJECT NO. OIT-270-P-13-17

VERIFY SCALES

REGISTERED PROFESSIONAL ENGINEER 56625PE OREGON TODD D. POWELL 1-12-15
EXPIRES: 12/31/16

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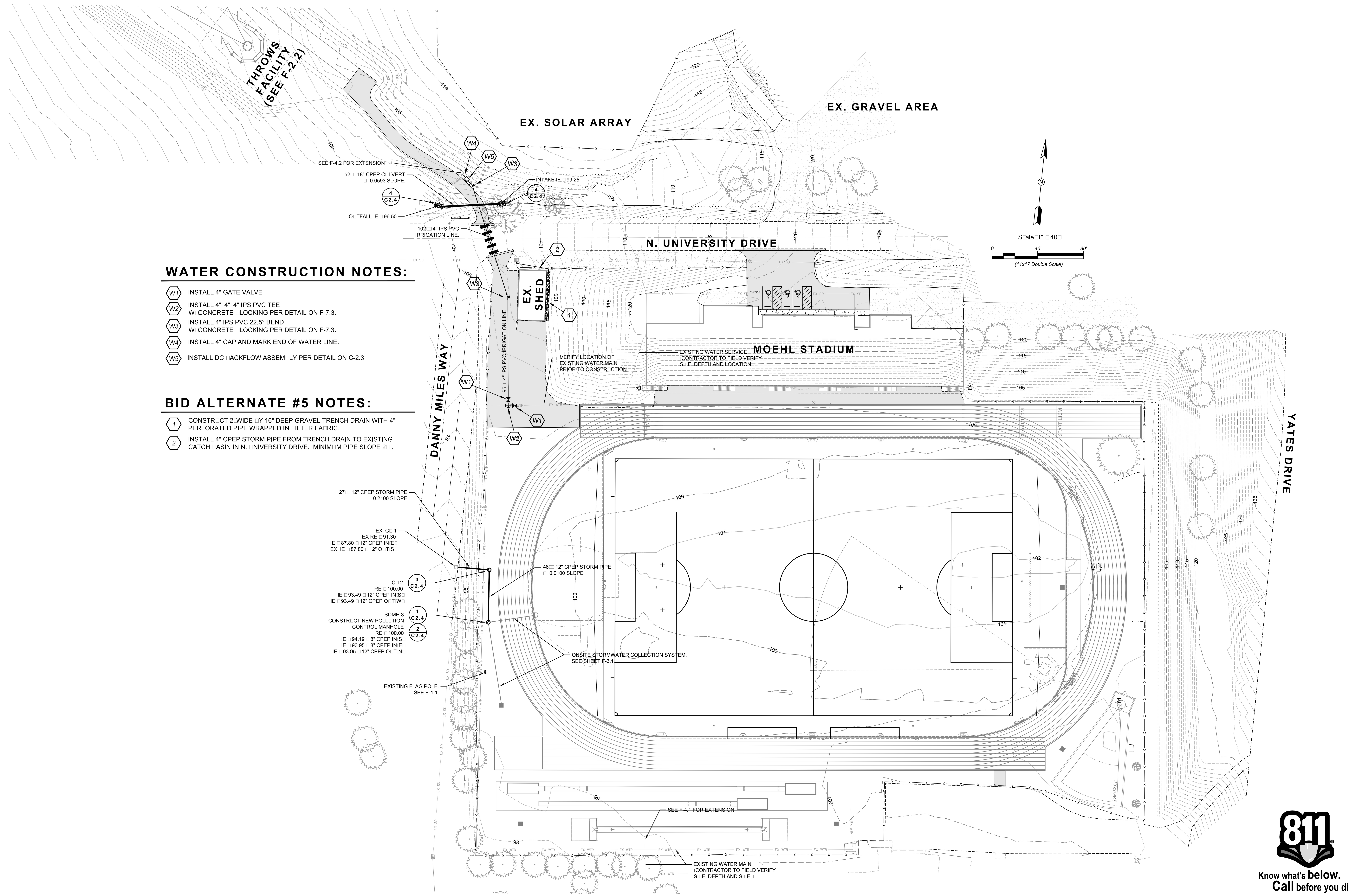
C-2.1

PAVING PLAN



WATER CONSTRUCTION NOTES:

- W1 — INSTALL 4" GATE VALVE
- W2 — INSTALL 4"x4"x4" IPS PVC TEE W/CONCRETE BLOCKING PER DETAIL ON F-7.3.
- W3 — INSTALL 4" IPS PVC 22.5° BEND W/CONCRETE BLOCKING PER DETAIL ON F-7.3.
- W4 — INSTALL 4" CAP AND MARK END OF WATER LINE.
- W5 — INSTALL DC BACKFLOW ASSEMBLY PER DETAIL ON C-2.3

BID ALTERNATE #5 NOTES:

1. CONSTRUCT 2' WIDE BY 16" DEEP GRAVEL TRENCH DRAIN WITH 4" PERFORATED PIPE WRAPPED IN FILTER FABRIC.
2. INSTALL 4" CPEP STORM PIPE FROM TRENCH DRAIN TO EXISTING CATCH BASIN IN N. UNIVERSITY DRIVE. MINIMUM PIPE SLOPE 2%.

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119 1st Avenue South, Suite 110, Seattle, Washington 98104
p. 206.285.0400 f. 206.285.0480

Drawn: TDP | Designed: TDP | Checked: TDP, KMA
Director Decision Date: N.A.

OREGON TECH TRACK AND SOCCER PROJECT

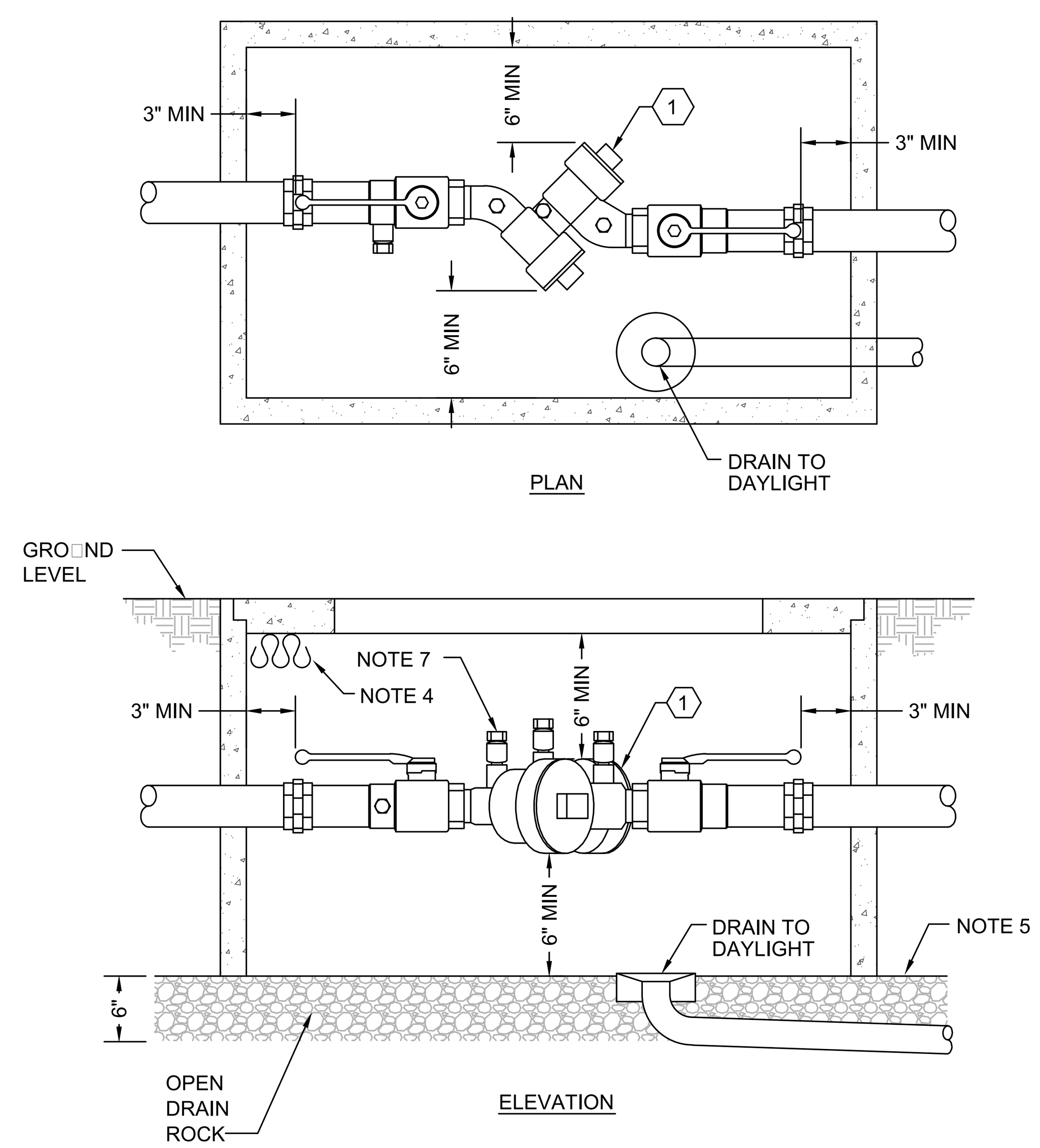
CONSTRUCTION DOCUMENTS
MAP NO. 38-09-00, TAX LOT 4900
3201 CAMPUS DRIVE, KLAMATH FALLS, OREGON
CITY PROJECT NO. OIT-270-P-13-17

VERIFY SCALES
ORIGINAL DRAWING BAR IS ONE INCH ON
IF NOT ONE INCH ON THIS SHEET ADJUST SCALES ACCORDINGLY

REGISTERED PROFESSIONAL ENGINEER 56425PE OREGON Jan. 13, 2004 TODD D. POWELL 1-30-15
EXPIRES: 12/31/16

C-2.2
UTILITY PLAN

AUSLAND PROJECT NO: 14-0708



NOTES

1. DO□□LE CHECK VALVE ASSEM□LY SHALL □E INSTALLED IN A LOCATION APPROVED □Y THE SERVICE PROVIDER.
2. DO□□LE CHECK VALVE ASSEM□LY MAY □E INSTALLED VERTICALLY□PROVIDED THAT THE ASSEM□LY□
   A. IS RECOMMENDED □Y THE MAN□FACT□RER FOR VERTICAL INSTALLATION
   □. IS INSTALLED IN AN ORIENTATION AS LISTED IN THE C□RRENT "APPROVED □ACKFLOW ASSEM□LY LIST" □OREGON DEPARTMENT OF H□MAN SERVICES□ 503-731-4007□.
3. ALL CLEARANCES APPLY TO O□TSIDE□IN-□□ILDING□AND VERTICAL INSTALLATIONS.
4. INS□LATION-FREE□E PROTECTION TO □E INS□LATION AND□OR HEAT SO□RCE TO KEEP ENCLOSURES AT A MINIMUM TEMPERATURE OF 40°F (NFPA 13-4-5.4.1.1).
5. COMPACTED GRAVEL OR □NDIST□R□ED □ASE.
6. A DOOR OR OTHER ACCESS SHALL □E PROVIDED.
7. ASSEM□LIES INSTALLED □ELOW GRO□ND LEVEL SHALL HAVE WATERTIGHT PL□GS OR CAPS INSTALLED ON THE TEST COCKS.

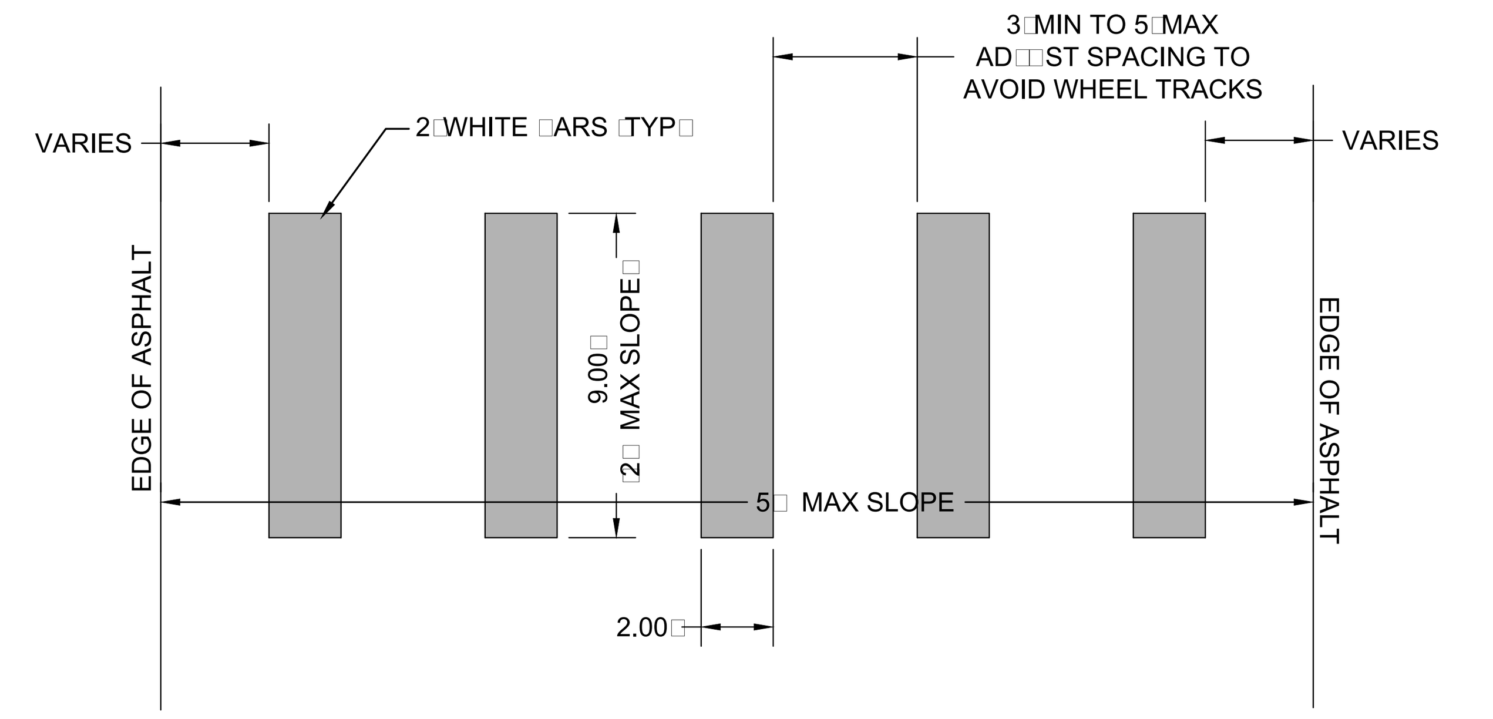
(1) - APPROVED CHECK VALVE ASSEM□LY INCL□DING FACTORY S□PPLIED SH□T-OFF VALVES

AS RE□□IRED □Y OAR 333-061-0070 AND THE OREGON PL□M□ING SPECIALTY CODE□AN INITIAL TEST PERFORMED □Y A STATE CERTIFIED □ACKFLOW ASSEM□LY TESTER IS RE□□IRED AT THE TIME IF INSTALLATION□WITH COPIES F□RNISHED TO□

1. THE OWNER
2. THE ENGINEER OF RECORD

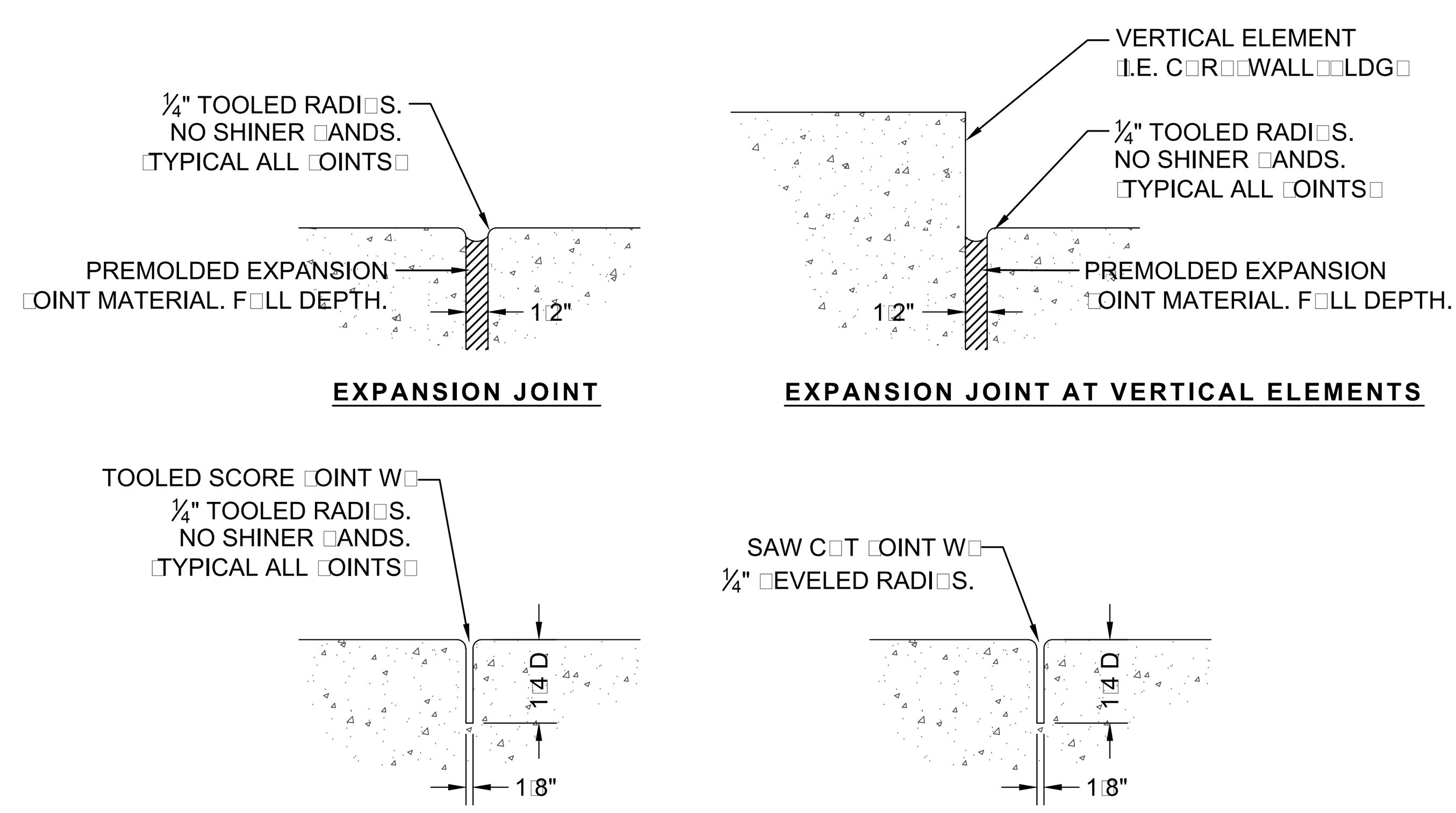
Double Check Valve Assembly 1/2" to 2" Pipes

1 / C2.3 SCALE□NTS



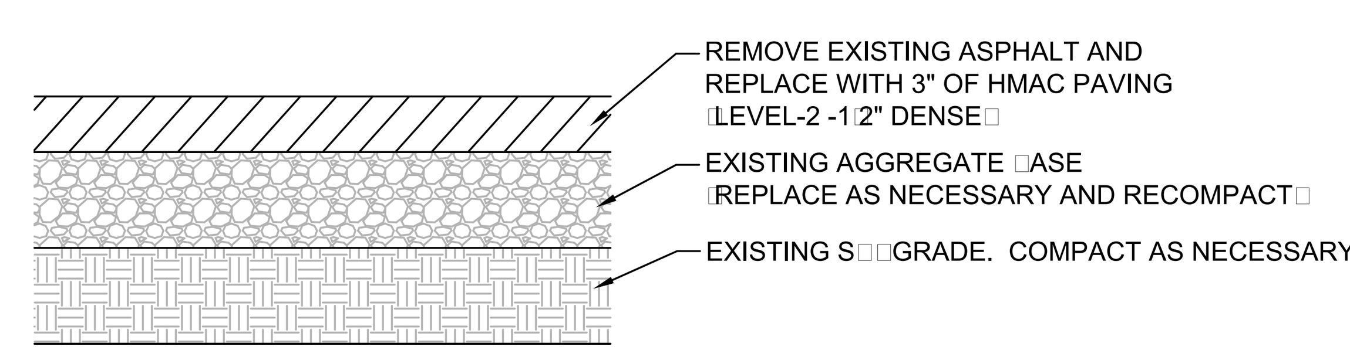
Staggered Continental Crosswalk

2 / C2.3 SCALE□NTS



Concrete Control Joints

3 / C2.3 SCALE□NTS

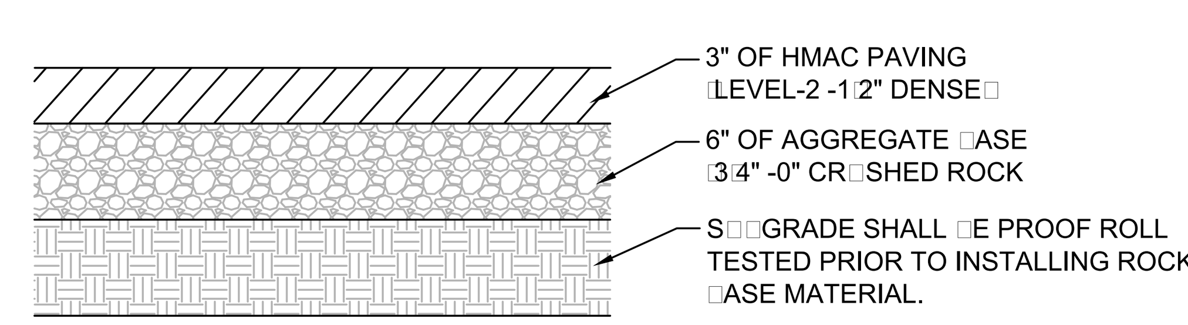


NOTES□

1. □□ST PRIOR TO PAVING□THE EXISTING AGGREGATE □ASE SHALL □E PROOF ROLLED. AGGREGATES THAT DO NOT PASS PROOF ROLL TESTING SHALL □E REMOVED AND RECOMPACTED AND TESTED AGAIN.

Asphalt Repair Section

4 / C2.3 SCALE□NTS

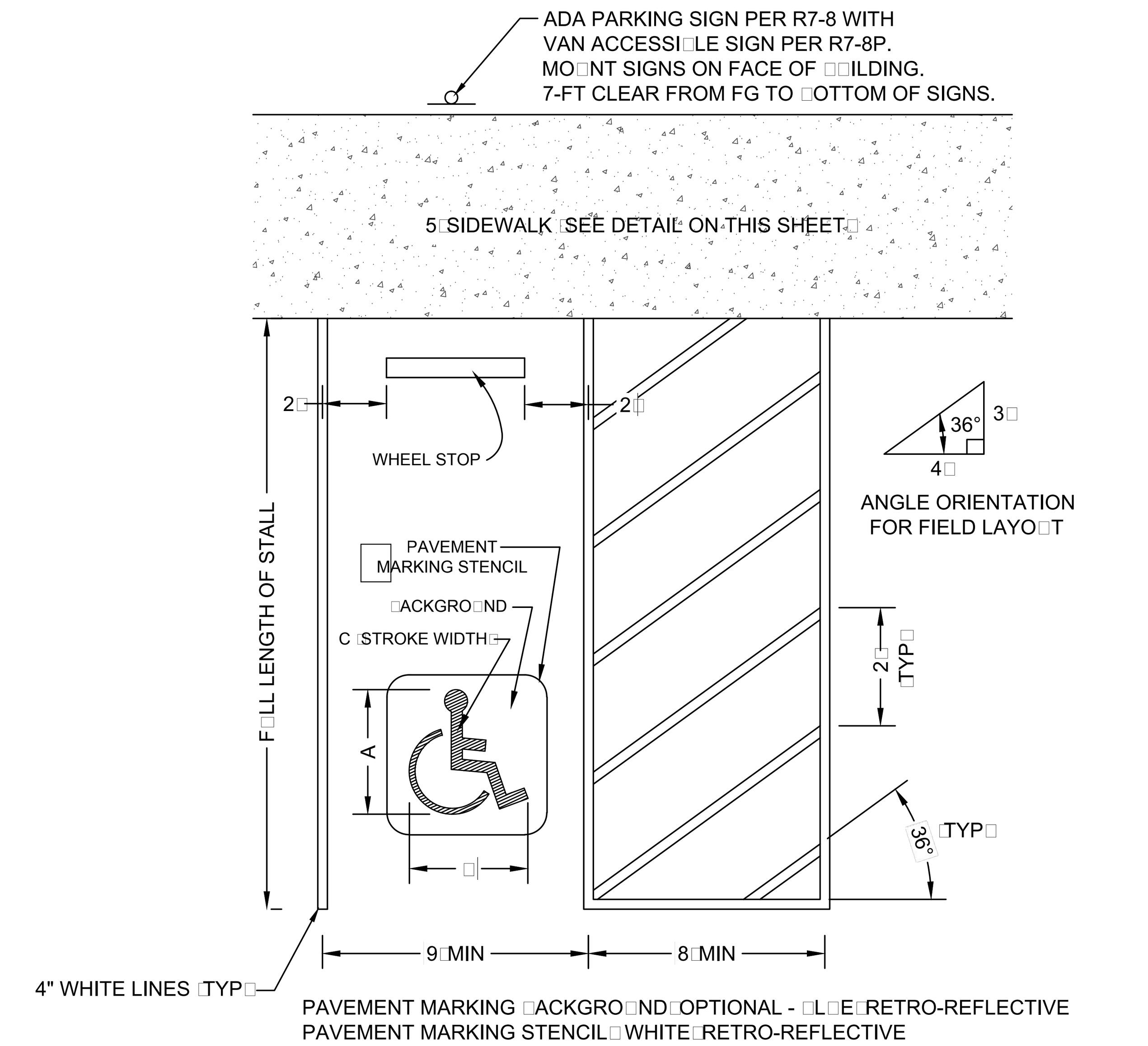


NOTES□

1. 3/4"-0" AGGREGATE □ASE SHALL □E INSTALLED IN MAXIM□M 6" LIFTS AND MECHANICALLY COMPACTED TO MINIM□M 98□ OF THE MAXIM□M DENSITY IN ACCORDANCE WITH THE AASHTO T-99 METHOD.
2. □□ST PRIOR TO PAVING□THE AGGREGATE □ASE SHALL □E PROOF ROLLED. AGGREGATES THAT DO NOT PASS PROOF ROLL TESTING SHALL □E REMOVED AND RECOMPACTED AND TESTED AGAIN.
3. □□ST PRIOR TO INSTALLING AGGREGATE □ASE ROCK THE S□□GRADE SHALL □E PROOF ROLLED. S□□GRADE MATERIAL THAT DOES NOT PASS PROOF ROLL TESTING SHALL □E REMOVED AND ADDITIONAL CR□SHED ROCK INSTALLED.

New Asphalt Section

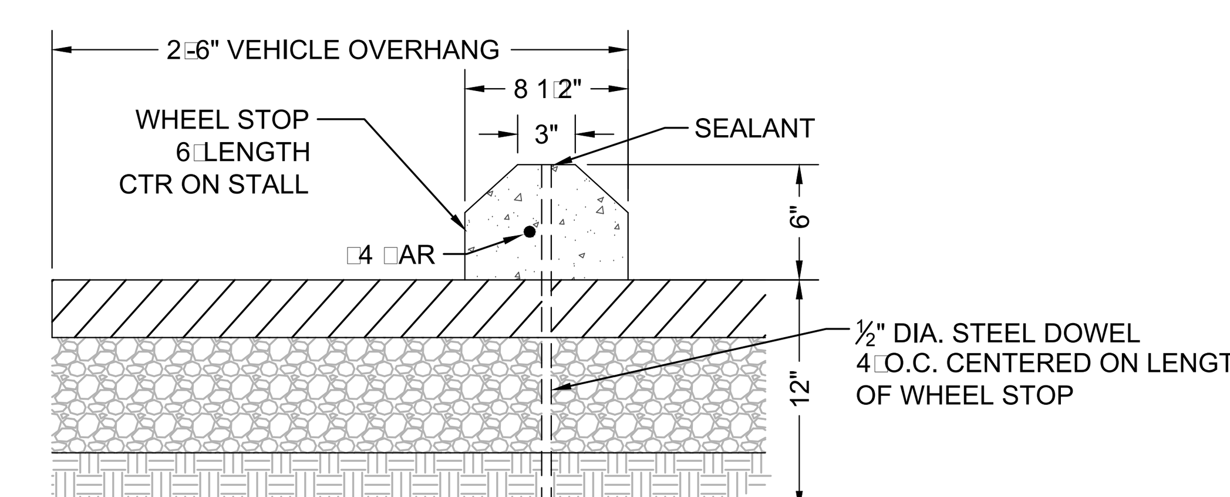
5 / C2.3 SCALE□NTS



LEGEND	DIMENSIONS □IN□		
	A	□	C
MINIM□M	28	24	3

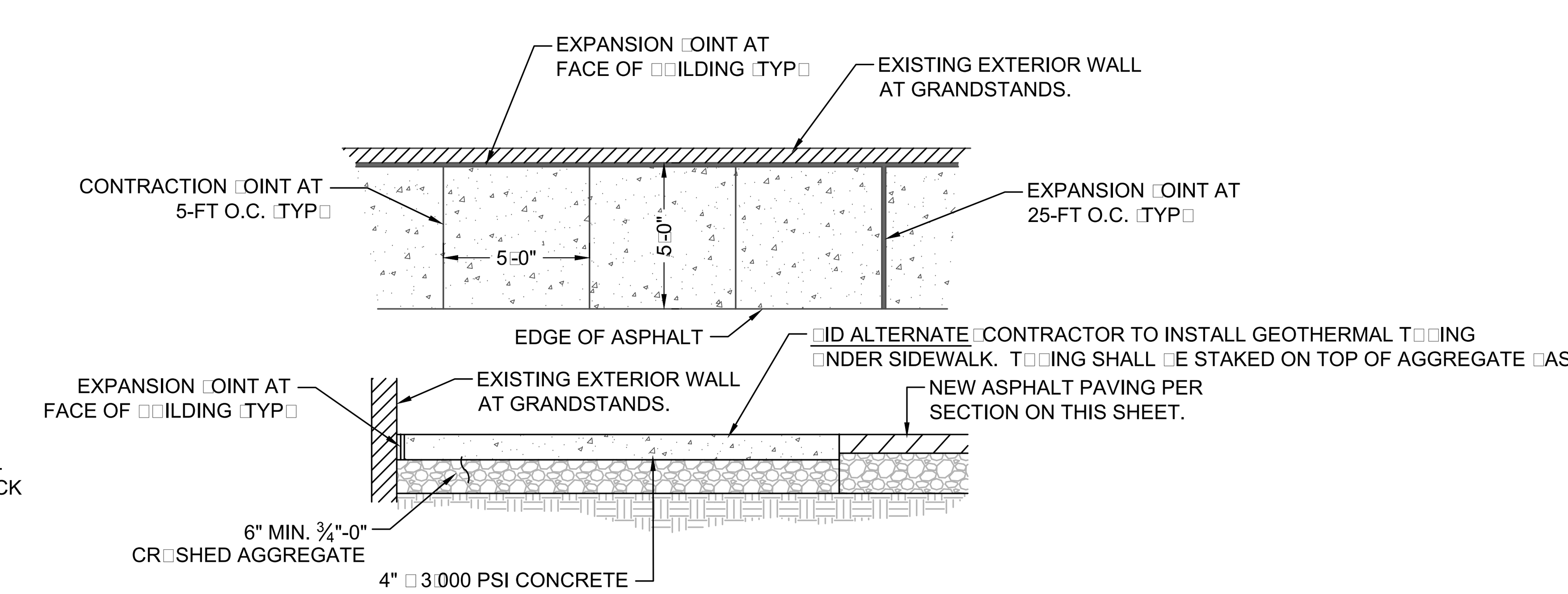
Van Accessible Parking

6 / C2.3 SCALE□NTS



Wheel Stop

7 / C2.3 SCALE□NTS



NOTES□

1. CONCRETE SHALL □E 3000 PSI MIN.□4" SL□MP □MAX.□
2. COMPACT S□□GRADE AND AGGREGATE TO 95□ OF MAXIM□M DRY DENSITY □4" MIN.□
3. FINISH SHALL □E MEDI□M □ROOM PERPENDIC□LAR TO PEDESTRIAN TRAFFIC □NLESS OTHERWISE DIRECTED.
4. CROSS SLOPE OF SIDEWALK SHALL □E 2□ AWAY FROM THE □□ILDING.
5. SEE CONCRETE CONTROL □OINT□DETAIL 4□ON THIS SHEET.

Concrete Sidewalk

8 / C2.3 SCALE□NTS

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Dra□n □□□	TDP	Dire□tor De□□sion Date	N/A
Designed □□□	TDP	First Su□□ittal Date□	
Che□□ed □□□	TDP KMA	Se□ond Su□□ittal Date□	
A□□ro□ed □□□		C□t A□□ro□al Date□	
Re□ 1			
Re□ 2			
Re□ 3			
As-□uilt			

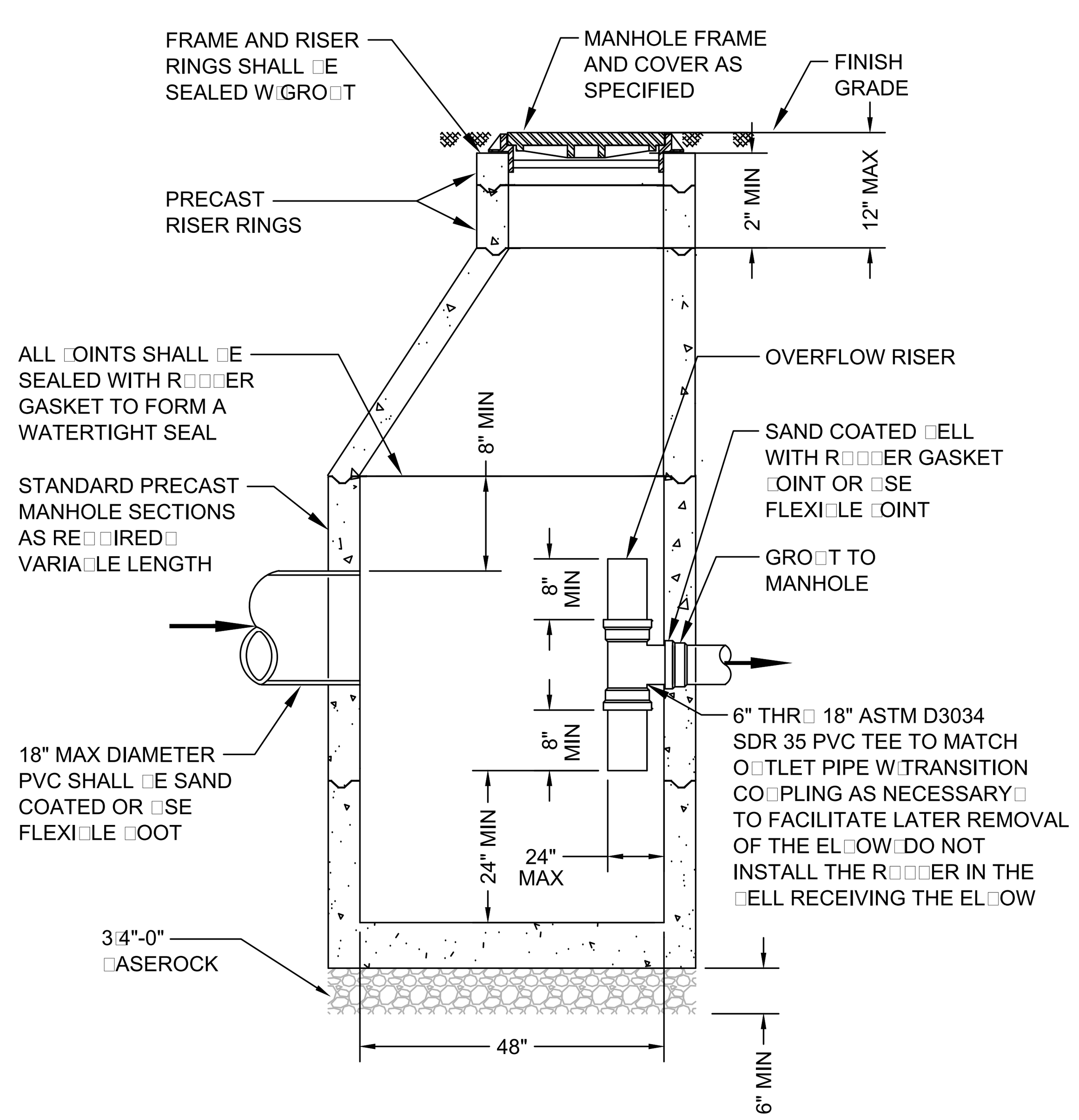
OREGON TECH TRACK AND SOCCER PRO□ECT
CONSTR□CTION DOC□MENTS
MAP NO. 38-09-00, TAX LOT 4900
3201 CAMPUS DRIVE, KLAMATH FALLS, OREGON
CITY PROJECT NO. OII-270-P-13-17

VERIFY SCALES
ORIGINAL DRAWING BAR IS ONE INCH ON
IF NOT ONE INCH ON THIS SHEET ADJUST SCALES ACCORDINGLY

REGISTERED PROFESSIONAL ENGINEER
58125PE
OREGON
JAN. 13, 2004
TODD D. POWELL
1-12-15
EXPIRES: 12/31/16

C-2.3
CIVIL DETAILS

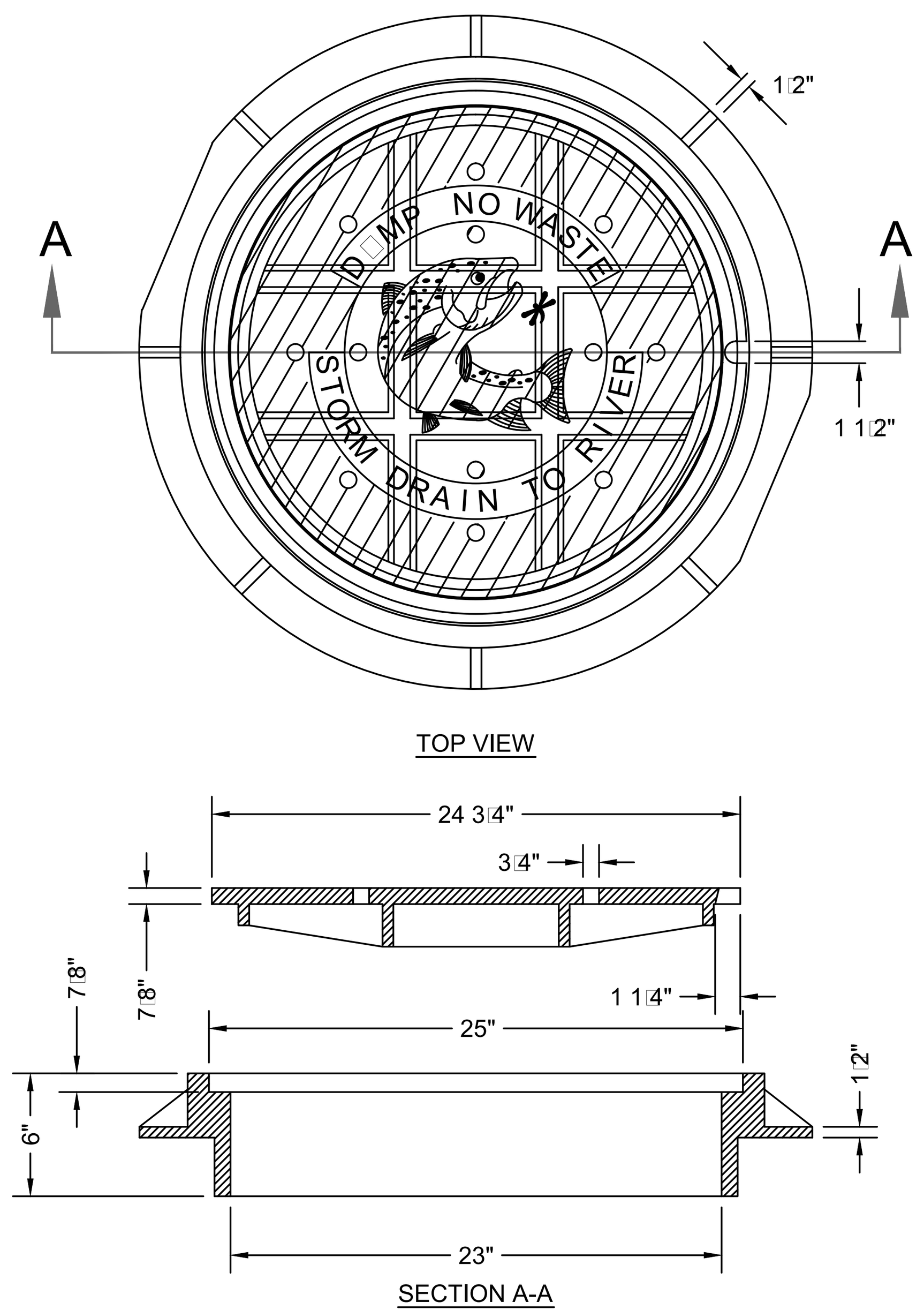
Dra□ing na□e□ V:\Pro□e□ts - Current\14-0708 OIT So□□er□Tra□□\Design\Pre De□elo□□ent Dra□ings\Wor□ing Dra□ings\14-0708 OIT C□□ Sheets.d□g
Plot Date□ □an 13□ 2015 - 9:19a□



NOTE□ ALL PRECAST SECTIONS SHALL CONFORM TO RE□□IREMENTS OF ASTM C 478.

1 C2.4 Storm Manhole w/ Water Quality Tee

SCALE□ NTS

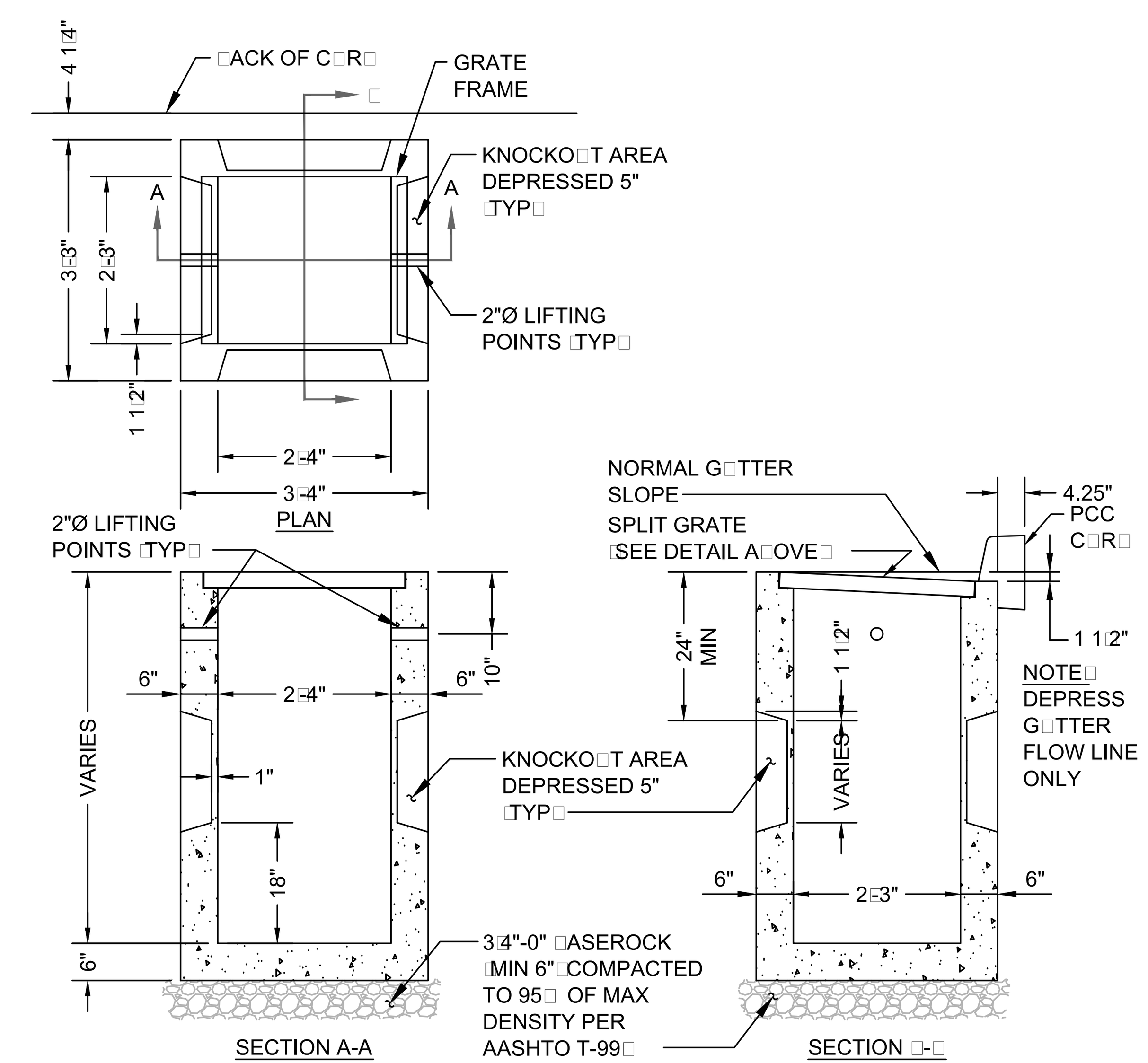


NOTES□

1. RING AND COVER TO □E MACHINED TO A TR□E 25" AND A TR□E □EARING ALL ARO□ND.
2. CASTINGS TO □E□D□L FO□NDRY AND S□PPLY MODEL A-2107□OR APPROVED E□□AL.

2 C2.4 Manhole Ring and Cover

SCALE□ NTS

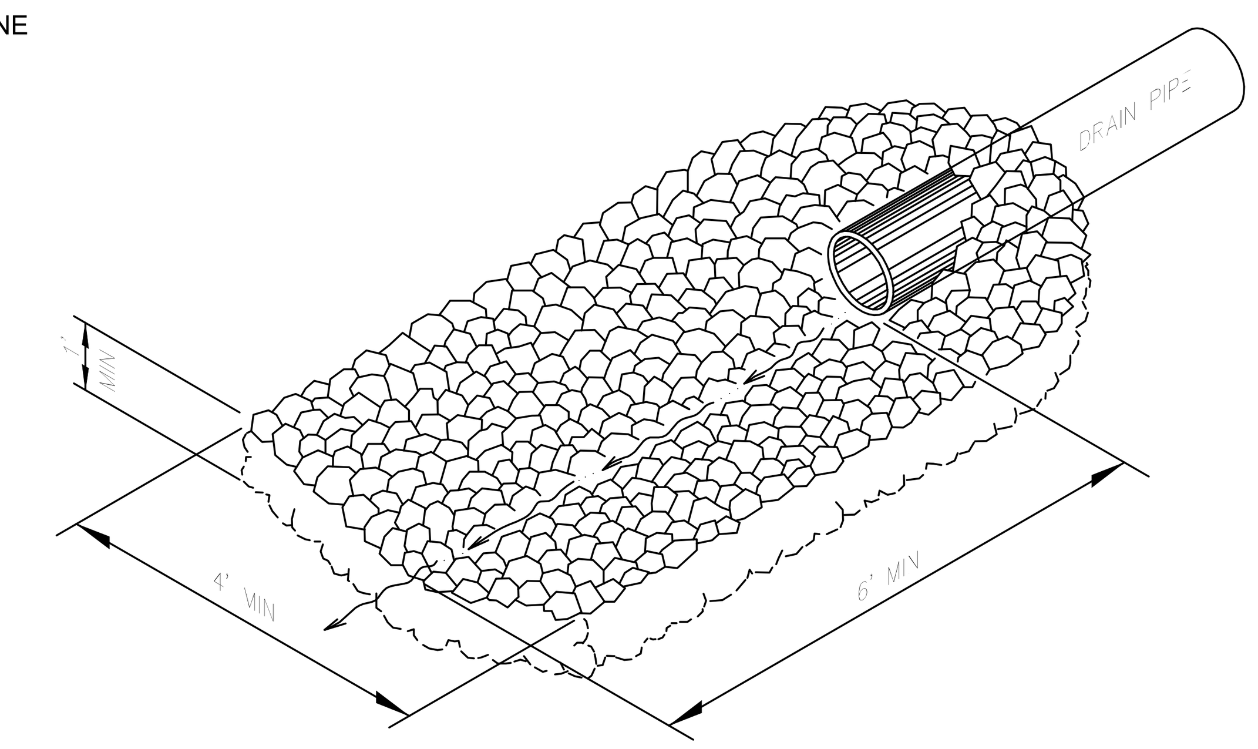


CONSTR□CTION NOTES□

1. GRATE AND FRAME MAY EACH □E OF CAST IRON OR WELDED STEEL CONSTR□CTION.
2. FOR PRECAST □OX□C□R□ M□ST □E HAND FORMED 10□EACH SIDE OF CATCH □ASIN.
3. CONCRETE STRENGTH SHALL □E 5000 PSI WITH FI□ER MESH.
4. CATCH □ASIN AND GRATE SHALL MEET HS20 LOADING.
5. A MINIM□M S□MP DEPTH OF 18" IS RE□□IRED.
6. O□TLET PIPE SHALL HAVE A MINIM□M OF 24" OF COVER.

3 C2.4 Catch Basin

SCALE□ NTS



4 C2.4 Riprap Dissipation Pad

SCALE□ NTS

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DA HOGAN

Dra□n	TDP	Dire tor De□s on Date N.A.
Des gned	TDP	F rst Su□□ttal Date
Che□ed	TDP KMA	Se ond Su□□ttal Date
A□ro ed		C t A□ ro al Date
Re 1		
Re 2		
Re 3		
As- u lt		

OREGON TECH TRACK AND SOCCER PRO□ECT

CONSTR□CTION DOC□MENTS

MAP NO. 38-09-00, TAX LOT 4900
3201 CAMPUS DRIVE, KLAMATH FALLS, OREGON
CITY PROJECT NO. OII-270-P-13-17

VERIFY SCALES
ORIGINAL DRAWING BAR IS ONE INCH ON
IF NOT ONE INCH ON THIS SHEET ADJUST SCALES ACCORDINGLY

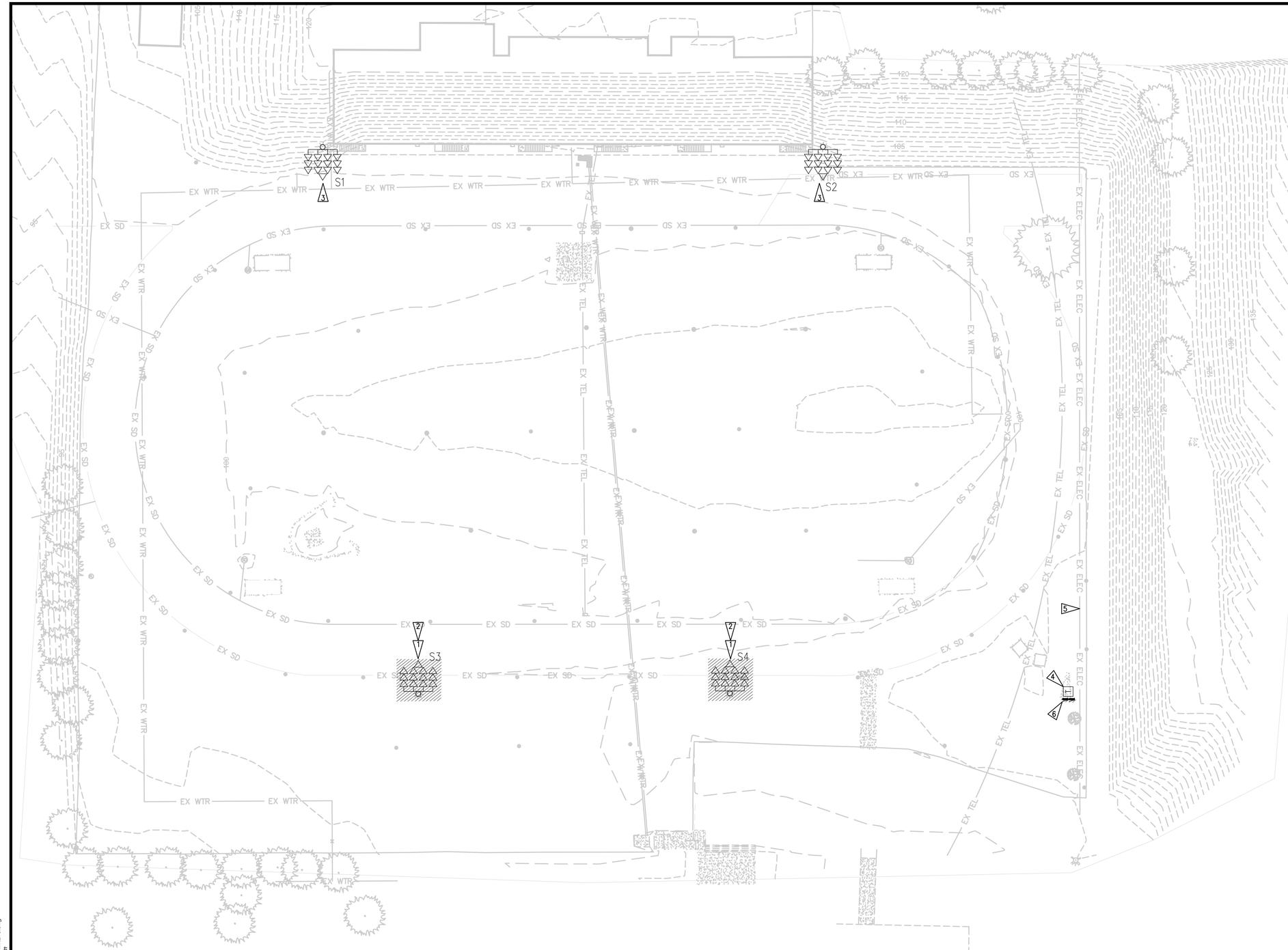
REGISTERED PROFESSIONAL ENGINEER 58422PE OREGON JAN. 13, 2004 TODD D. POWELL 1-12-15
EXPIRES: 12/31/16

C-2.4

STORM DETAILS

Dra□ing na□e V:\Pro□e ts - Current\14-0708 OIT So□□er\Tra□\Design Pre De elo□□ent Dra□ings Wor□ing Dra□ings\14-0708 OIT C□\Sheets.d□g
Plot Date: □an 13, 2015 - 9:21a□

AUSLAND PROJECT NO: 14-0708



LEGEND:

- EXISTING WOOD FLOODLIGHT POLE. APPROXIMATE HEIGHT 80' ABOVE GRADE
- EXISTING FLOODLIGHT
- EXISTING UTILITY TRANSFORMER

GENERAL NOTES:

1. MAINTAIN AND PROTECT ALL EXISTING UNDERGROUND UTILITIES. CONTRACTOR TO PROVIDE LOCATE PRIOR TO ANY EXCAVATION. PRIOR TO STARTING CONSTRUCTION, CONTRACTOR SHALL CALL "ONE-CALL" FOR UTILITY LOCATIONS.
2. REMOVE ABANDONED WIRES FROM UNDERGROUND CONDUITS, CUT CONDUIT RISERS 24" BELOW GRADE AND ABANDON.
3. ALL DEMOLISHED ELECTRICAL WIRES TO BE RETURNED TO OWNER.

FLAG NOTES:

1. DEMO EXISTING FLOODLIGHTS, BRACKETS AND POLE. CUT POLE 24" BELOW GRADE.
2. LOCATE AND DEMO EXISTING FLOODLIGHTING CIRCUIT BACK TO ELECTRICAL PANEL LOCATED ADJACENT TO THE TRANSFORMER. CUT CONDUIT RISERS 24" BELOW GRADE AND ABANDON EXISTING UNDERGROUND CONDUIT. COORDINATE DEMOLITION WITH RE-GRADING OF FIELD.
3. INTERCEPT CONDUIT AND CONDUCTORS AT POLE BASE OF POLE AND TURN UP INTO NEW JUNCTION BOX. COIL 5' OF CONDUCTOR LENGTH TO RECONNECT. LOCATE AND DEMO EXISTING FLOODLIGHTING CIRCUIT FROM JUNCTION BOX BACK TO ELECTRICAL PANEL LOCATED ADJACENT TO THE TRANSFORMER. COORDINATE DEMOLITION WITH RE-GRADING OF FIELD.
4. EXISTING TRANSFORMER TO REMAIN. COORDINATE SHUTDOWN WITH OWNER.
5. MAINTAIN AND PROTECT EXISTING UNDERGROUND PRIMARY FEEDER.
6. DEMO EXISTING ELECTRICAL PANELS, SECONDARY CONDUCTORS, AND BRANCH CIRCUITS.

EXISTING POLE AND FLOOD LIGHT SCHEDULE

POLE	FLOOD LIGHTS
S1	13
S2	13
S3	13
S4	13
	52

ELECTRICAL DEMOLITION SITE PLAN
SCALE: AS INDICATED

0 15 30 60 90 Feet
1 inch plotted
If measurement is other than 1 inch then the plot is reduced.

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119 1st Avenue South, Suite 310 Seattle, Washington 98104
p. 206.285.0900 f. 206.285.0480

Director Decision Date: N.A.
First Submittal Date: By:
Second Submittal Date: By:
City Approval Date: By:

Drawn By: AAU
Designed By: RRK
Checked By: CBF, JED
Approved:
Rev 1
Rev 2
Rev 3
As-Built

OREGON TECH TRACK AND SOCCER PROJECT
CONSTRUCTION DOCUMENTS
MAP NO. 38-09-00, TAX LOT 4900
3201 CAMPUS DRIVE, KLAMATH FALLS, OREGON
CITY PROJECT NO. OIT-270-P-13-17

VERIFY SCALES
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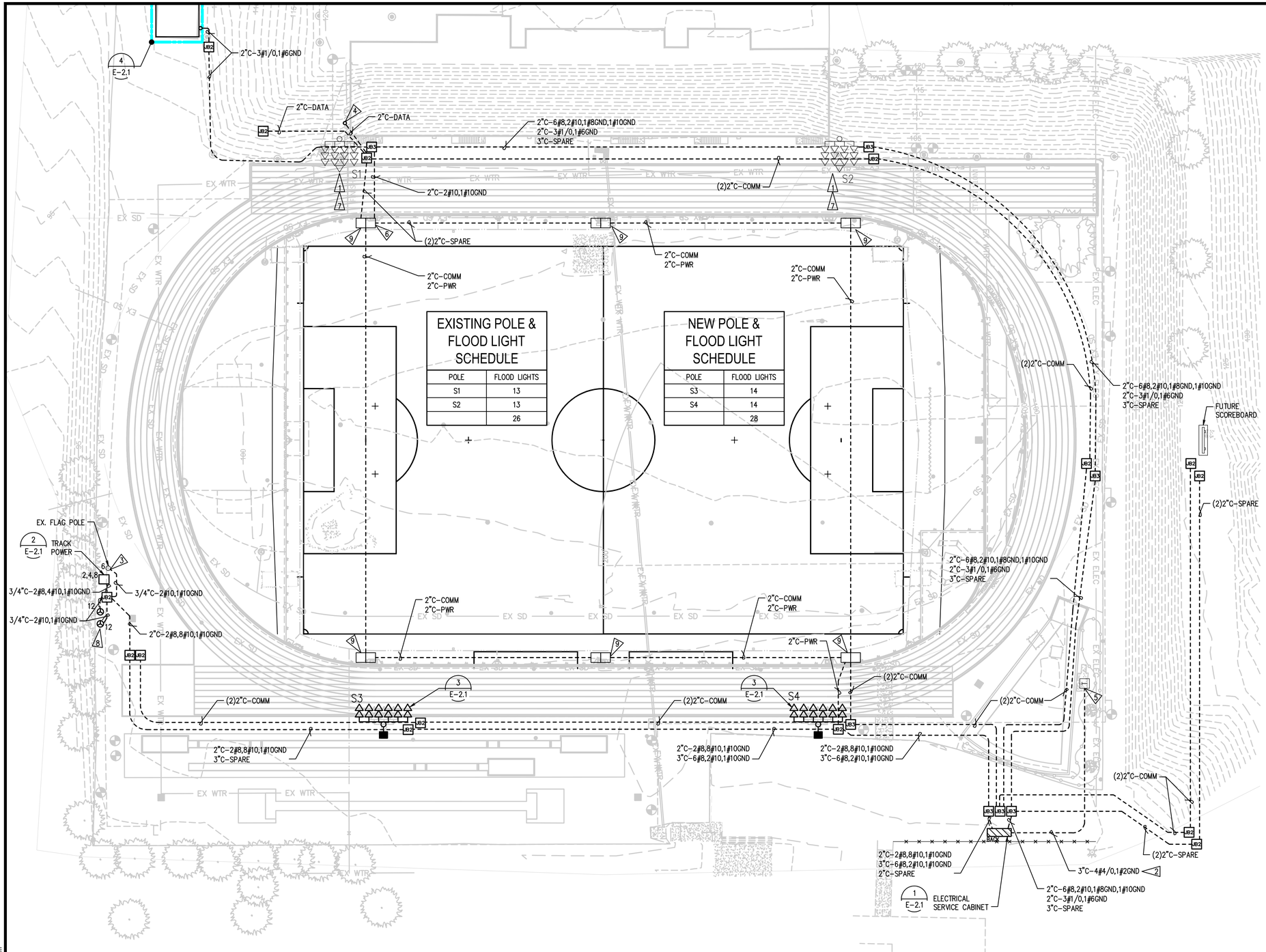
REGISTERED PROFESSIONAL ENGINEER
15025PE
OREGON
JULY 25, 1986
JAMES E. DEGNAN
EXPIRES 12-31-2015

E-1.0
Electrical Demolition Site Plan

AUSLAND PROJECT NO: 14-0708

J:\B1883O\CAD-BIM\E10 Jan 29, 2015 9:55 AM ByRKATAYA
Drawing name: J:\B1883O\CAD-BIM\E10.dwg
Plot Date: Jan 29, 2015 - 9:55am



GENERAL NOTES:

1. JUNCTION BOX LOCATIONS AND CONDUIT ROUTING ARE APPROXIMATE. ALIGN JUNCTION BOXES WITH PAVEMENT EDGES. CONDUIT ROUTING SHALL AVOID TREES. SUBMIT CONDUIT AND JUNCTION BOX LAYOUT PLAN TO ENGINEER PRIOR TO INSTALLATION.
2. MAINTAIN AND PROTECT ALL EXISTING UNDERGROUND UTILITIES. CONTRACTOR TO PROVIDE LOCATE PRIOR TO ANY EXCAVATION. PRIOR TO STARTING CONSTRUCTION, CONTRACTOR SHALL CALL "ONE-CALL" FOR UTILITY LOCATIONS.
3. ALL SPARE/EMPTY CONDUIT TO BE PROVIDED WITH NYLON PULL STRINGS.
4. ALL CONDUITS FOR COMMUNICATIONS SHALL HAVE A MAXIMUM BEND 60 DEGREE RADIUS AND BE INSTALLED NOT LESS THAN 30" BELOW FINISHED GRADE UNLESS OTHERWISE INDICATED.
5. CAP ALL UNUSED CONDUITS. WHERE CONDUITS ARE CAPPED MARK LOCATION WITH AN ELECTRICAL MARKER.
6. FIELD BENDING OF STRAIGHT CONDUIT SECTIONS INTO LONG RADIUS SWEEPS IS PREFERRED.
7. INSTALL CONDUIT WITH A MINIMUM SLOPE OF 4 INCHES PER 100 FEET AWAY FROM EACH JUNCTION BOX. COORDINATE WITH THE CIVIL DRAWINGS TO PROVIDE PROPER DRAINAGE AT EACH COMMUNICATIONS VAULT.
8. USE BELL ENDS TO TERMINATE ALL CONDUITS ENTRIES INTO COMMUNICATIONS HAND HOLES, IN-GROUND PULL BOXES, AND FOUNDATIONS. REAM AND CLEAN EXCESS ADHESIVES AND OTHER FOREIGN SUBSTANCES FROM CONDUIT ENDS.
9. GROUND IN-GROUND MAINTENANCE HOLES, HAND HOLES, AND JUNCTION BOXES PER MOST CURRENT VERSION OF THE NESC.

LEGEND:

- ○ EXISTING FLOODLIGHT POLE
- ○ NEW STEEL FLOODLIGHT STANDARD
- ▷ EXISTING NEMA FLOODLIGHT WITH GLARE CONTROL SHIELDING, 1500 WATT METAL HALIDE, 480 VOLT
- ▷ NEW NEMA FLOODLIGHT WITH GLARE CONTROL SHIELDING, 1500 WATT METAL HALIDE, 480 VOLT
- ■ AREA LUMINAIRE, 100 WATT LED, 480 VOLT, FULL CUTOFF
- T EXISTING UTILITY TRANSFORMER
- RACEWAY UNDERGROUND
- J82 TYPE II JUNCTION BOX, CHRISTY #FL30 WITH FL30T COVER
- J83 TYPE III JUNCTION BOX, CHRISTY #FL36 WITH FL36T COVER
- FIELD JUNCTION BOX WITH TURF COVER, SPORTS EDGE SEF900 SERIES.

FLAG NOTES:

1. CLEAN FLOODLIGHT REFLECTORS AND LENSES. PROVIDE NEW LAMP AND REAIM FLOODLIGHT.
2. PROVIDE NEW SECONDARY ELECTRICAL FEEDER TO NEW PEDESTAL. COORDINATE WITH OWNER.
3. PROVIDE CONNECTION TO FLAG POLE LIGHT.
4. STUB UP CONDUIT FOR CAMERA CONNECTION.
5. COORDINATE SHUTDOWN OF TRANSFORMER WITH OWNER.
6. PROVIDE GFCI WATERTIGHT RECEPTACLE WITH 6' CABLE FOR CAMERA CONNECTION INSIDE JUNCTION BOX. BRYANT 5-15R MODEL # 15W47BRYBK
7. ROUTE BOTH CIRCUITS UP POLE IN EXISTING CONDUIT. REWIRE FLOODLIGHTS ALTERNATING CIRCUITS PER AIMING DIAGRAM PROVIDED BY ENGINEER.
8. PROVIDE CONNECTION TO NEW IRRIGATION CONTROLLER. IRRIGATION CONTROLLER PROVIDED BY OTHERS UNDER THIS CONTRACT.
9. TERMINATE COMM AND POWER CONDUITS IN SEPARATE SECTIONS OF DIVIDED BOX.

ELECTRICAL SITE PLAN
SCALE: AS INDICATED

0 15 30 60 90
1 inch plotted — Feet
If measurement is other than 1 inch then the plot is reduced.

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DA HOGAN
119 1st Avenue South, Suite 310 Seattle, Washington 98104
p. 206.285.0400 f. 206.285.0480

Director Decision Date: N.A.
First Submittal Date:
Second Submittal Date:
City Approval Date:
By: By: By:
Drawn By: AAU
Designed By: RRK
Checked By: CBF, JED
Approved:
Rev 1 Rev 2 Rev 3 As-Built

OREGON TECH TRACK AND SOCCER PROJECT
CONSTRUCTION DOCUMENTS
MAP NO. 38-09-00, TAX LOT 4900
3201 CAMPUS DRIVE, KLAMATH FALLS, OREGON
CITY PROJECT NO. CIP-270-P-13-17

VERIFY SCALES
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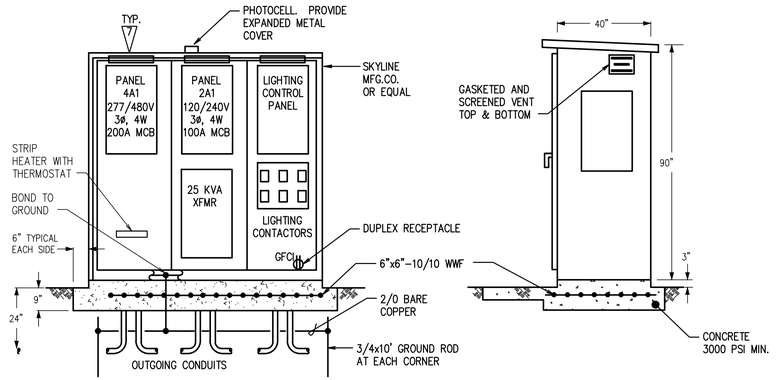
REGISTERED PROFESSIONAL ENGINEER
JAMES E. DEBOER
15025PE
OREGON
JULY 25, 1985
EXPIRES 12-31-2015

E-1.1
Electrical Site Plan

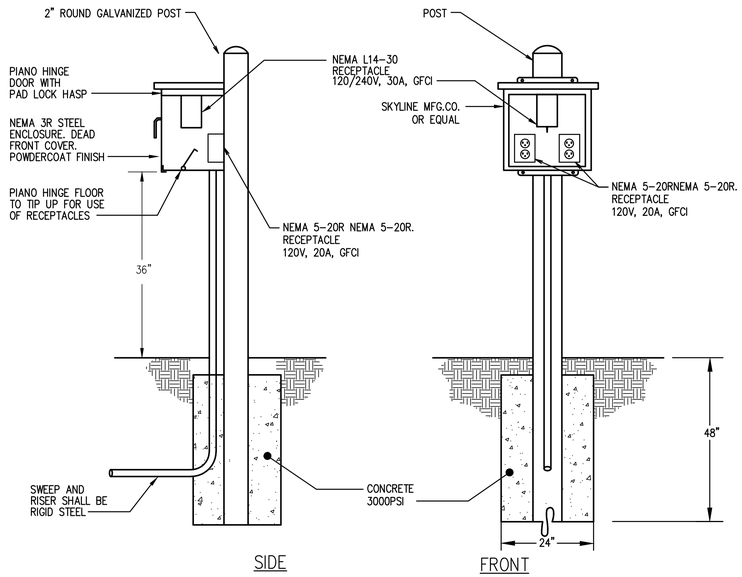
AUSLAND PROJECT NO: 14-0708

J:\18830\CAD-BIM\E11 Jan 29, 2015 9:55 AM By:RKATAYA
Drawing name: J:\18830\CAD-BIM\E11.dwg
Plot Date: Jan 29, 2015 - 9:55am

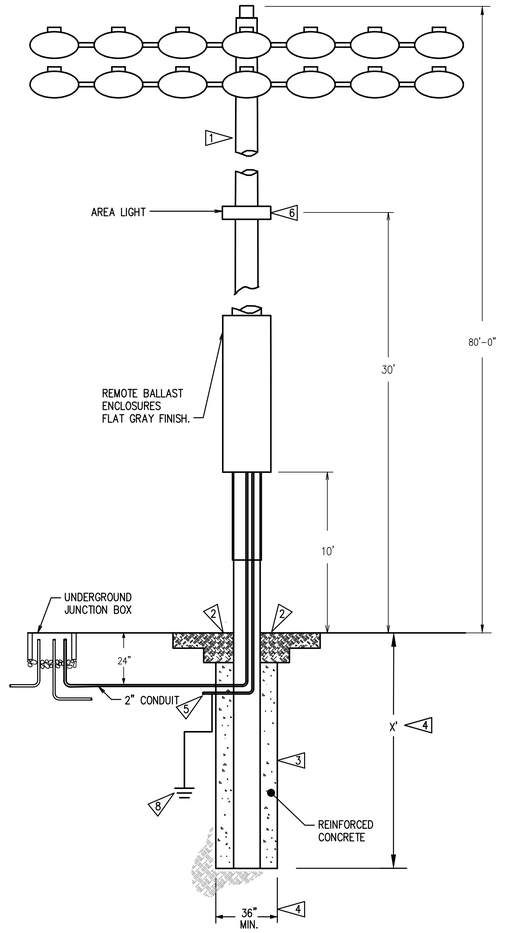


FRONT VIEW SIDE VIEW

1 E-2.1 PEDESTAL DETAIL
SCALE: NONE



2 E-2.1 TRACK POWER BOX MOUNTING DETAIL



3 E-2.1 FLOODLIGHT POLE DETAIL
SCALE: NONE

LEGEND:

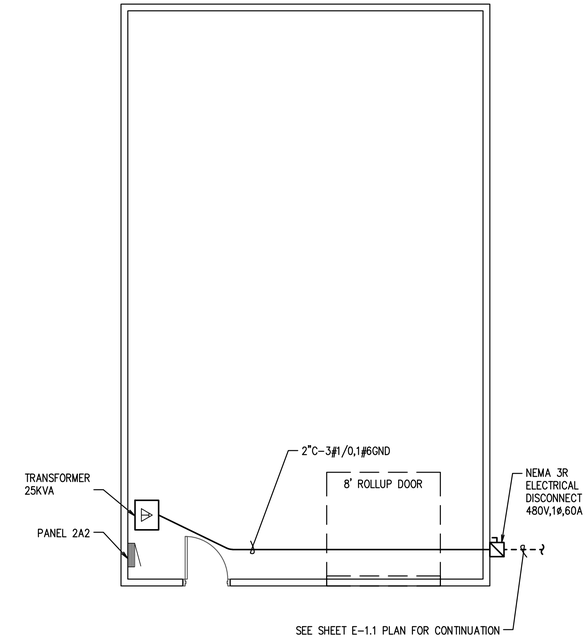
- 120 VOLT DUPLEX RECEPTACLE
- PANELBOARD
- ELECTRICAL TRANSFORMER
- ELECTRICAL DISCONNECT
- LIGHT SWITCH WITH OCCUPANCY SENSOR
- PC PHOTOCELL CONTROL
- EXPOSED RACEWAY
- UNDERGROUND RACEWAY

LIGHTING FIXTURE SCHEDULE

- LED SURFACE MOUNT LIGHT FIXTURE, VANDAL RESISTANT, NOMINALLY 4"x48", 120 VOLT, 43 WATT LED. LIGHT EDGE, VMONSOON SERIES, VMON1.
- LED SURFACE WALL MOUNT LIGHT FIXTURE, VANDAL RESISTAT, NOMINALLY 9"X9", 120 VOLT, 26 WATT LED. MOUNT FIXTURE AT +10' A.F.F. AT CENTER OF DOOR. KENALL FN9L-3-7-DB-26L40K-1-120V

FLAG NOTES:

1. SUPPLIER OF GALVANIZED STEEL POLE TO PROVIDE STRUCTURAL CALCULATIONS FROM A LICENSED STRUCTURAL ENGINEER REGISTERED IN THE STATE OF OREGON. CALCULATION TO INCLUDE WIND AND SEISMIC LOADS PER IBC 2012. SUBMIT WITH MANUFACTURER SHOP DRAWINGS DURING SUBMITTAL PHASE OF PROJECT.
2. PROVIDE MOW STRIP AT TOP OF FOUNDATION. SMOOTH FINISH CONCRETE AND SET AT GRADE. CONDUIT RISER SHALL BE INSTALLED FLUSH TO POLE PRIOR TO POURING CONCRETE.
3. CONTRACTOR TO REFER TO SOILS REPORT IN PROJECT MANUAL TO ASSESS CONDITIONS AFFECTING DRILLING FOR INSTALLATION OF POLE FOUNDATIONS.
4. POLE FOUNDATION CALCULATIONS TO BE PROVIDED BY CONTRACTOR. CALCULATIONS TO BE PROVIDED BY A LICENSED STRUCTURAL ENGINEER REGISTERED IN THE STATE OF OREGON.
5. PROVIDE 2" CONDUIT UP FLOODLIGHT POLE. EXTEND CONDUIT TO ADJACENT COMM JUNCTION BOX.
6. COORDINATE LOCATION OF BRACKET WITH POLE MANUFACTURER.
7. PROVIDE 2' LED STRIPLIGHT WITH DOOR CONTACT SWITCH.
8. PROVIDE POLE GROUNDING PER NEC 410.30 (B) AND POLE MANUFACTURER RECOMMENDATIONS.



4 E-2.1 ELECTRICAL PLAN - SHED
SCALE: 3/16" = 1'-0"

0 2 4 8 12 16
1 inch plotted — Feet
If measurement is other than 1 inch then the plot is reduced.

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p. 206.285.0400 f. 206.285.0480

Director Decision Date: N.A.
First Submittal Date:
Second Submittal Date:
City Approval Date:
By:
By:
By:

Drawn By: AAU
Designed By: RRK
Checked By: CBF, JED
Approved:
Rev 1
Rev 2
Rev 3
As-Built

OREGON TECH TRACK AND SOCCER PROJECT
CONSTRUCTION DOCUMENTS
MAP NO. 38-09-00, TAX LOT 4900
3201 CAMPUS DRIVE, KLAMATH FALLS, OREGON
CITY PROJECT NO. OIT-270-P-13-17

VERIFY SCALES
ORIGINAL DRAWING BAR IS ONE INCH ON.
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

REGISTERED PROFESSIONAL ENGINEER
15075PE
OREGON
JULY 25, 1995
JAMES E. DESMAN
EXPIRES 12-31-2015

E-2.1
Electrical Details & Schedules

AUSLAND PROJECT NO: 14-0708

J:\B1883O\CAD-BIM\E21 Feb 05, 2015 8:33 AM ByRKATAYA
Drawing name: J:\B1883O\CAD-BIM\E21.dwg
Plot Date: Feb 05, 2015 - 8:33am

LEGEND:

LC-1 LIGHTING CONTACTOR 3P30A

LC-2 LIGHTING CONTACTOR 3P60A

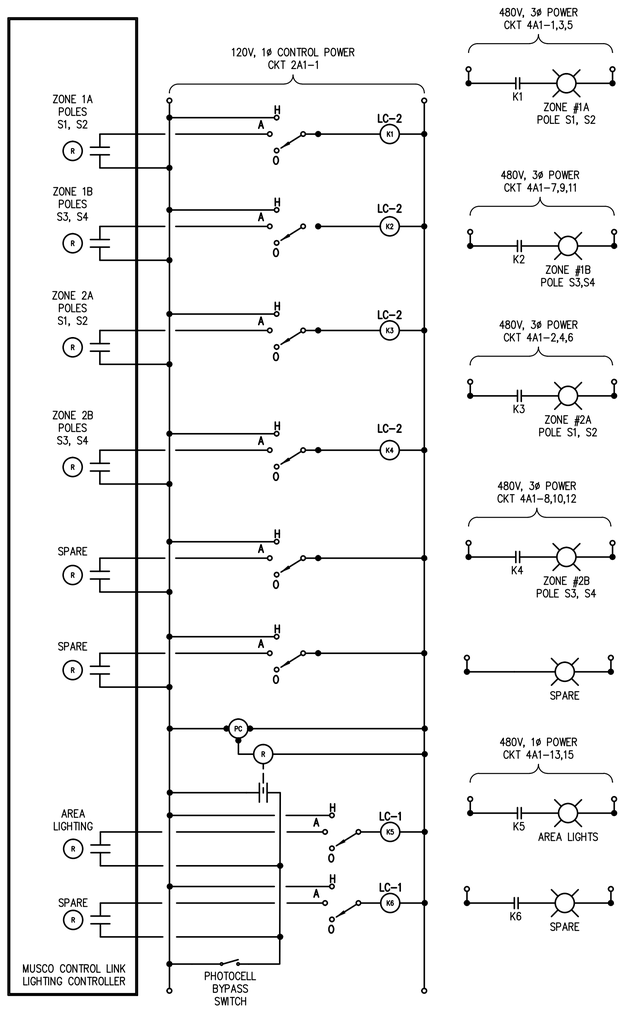
H / A / O HOA SWITCH, SQUARE D 9001 SERIES

PC PHOTOCELL 105-285 V. 1800 VA.

POLE LIGHTS

KX RELAY

KX NORMALLY OPEN CONTACTOR



1 E2.2 CONTROL ONE LINE
SCALE: NONE

Sparling — Panel

Name Panel 4A1 277/480V 3 PH 4W 200A Main CB Type: Panelboard
Location: OIT Soccer Field Surface Mounted 65,000 AIC
Serves: OIT Soccer Field Single Lugs

#	Description	Load	CB	*	A	B	C	CB	*	Load	Description	#
1	Lighting ZONE 1, POLES S1, S2	6.80	40/3 CB		X			40/3 CB		6.80	Lighting ZONE 2, POLES S1, S2	2
3	-------ZONE 1, POLES S1, S2	6.80	------- ---			X		------- ---		6.80	-------ZONE 2, POLES S1, S2	4
5	-------ZONE 1, POLES S1, S2	6.80	------- ---				X	------- ---		6.80	-------ZONE 2, POLES S1, S2	6
7	Lighting ZONE 1, POLES S3, S4	7.93	40/3 CB		X			40/3 CB		6.80	Lighting ZONE 2, POLES S3, S4	8
9	-------ZONE 1, POLES S3, S4	7.93	------- ---			X		------- ---		7.93	-------ZONE 2, POLES S3, S4	10
11	-------ZONE 1, POLES S3, S4	7.93	------- ---				X	------- ---		7.93	-------ZONE 2, POLES S3, S4	12
13	Lighting AREA LIGHTS	0.10	20/2 CB		X			40/3 CB		0.00	Spare	14
15	-------AREA LIGHTS	0.10	------- ---			X		------- ---		0.00	-------	16
17	Space	0.00	0/1				X	------- ---		0.00	-------	18
19	Space	0.00	0/1		X			0/1		0.00	Space	20
21	Space	0.00	0/1			X		0/1		0.00	Space	22
23	Space	0.00	0/1				X	0/1		0.00	Space	24
25	Space	0.00	0/1		X			0/1		0.00	Space	26
27	Space	0.00	0/1			X		0/1		0.00	Space	28
29	Space	0.00	0/1				X	0/1		0.00	Space	30
31	Space	0.00	0/1		X			0/1		0.00	Space	32
33	Space	0.00	0/1			X		0/1		0.00	Space	34
35	Space	0.00	0/1				X	60/2 CB		0.00	Panel Panel 2A2	36
37	Space	0.00	0/1		X			------- ---		0.00	-------Panel 2A2	38
39	Space	0.00	0/1			X		70/2 CB		3.11	Panel Panel 2A1	40
41	Space	0.00	0/1				X	------- ---		4.03	-------Panel 2A1	42

		PH A	PH B	PH C
Rev:				
Revised Ckts Marked * Existing Ckts Marked #	Connected KVA	28.43	32.68	33.50

File: J:\B18830\Design\Sched\Panels.PNL

* Circuit Breaker Code
G = GFCI H = HID Rated
S = Shunt Trip C = HACR Rated
D = Switching Duty # = See Note
A = AFCI

Notes: Provide Service Entrance Rated Panel

Load Type	Conn KVA	NEC Demand Factor		Dem. KVA	Dem. Amps	NEC Feed %	NEC Feed Amps
Equip	1.90	x 100%		1.90	2	x 100%	2
Lighting	87.67	x 100%		87.67	105	x 125%	132
Recept	5.04	10 KVA @ 100%, rest @ 50%		5.04	6	x 100%	6
	94.61		114 Amps	94.61	114		140

Sparling — Panel

Name Panel 2A1 120/240V 1 PH 3W 100A Main CB Type: Panelboard
Location: OIT Soccer Field Surface Mounted 10,000 AIC
Serves: OIT Soccer Field Single Lugs

#	Description	Load	CB	*	A	B	CB		Load	Description	#
1	Equip LIGHTING CONTROLLER	0.40	20/1 CB		X		30/2 CB		2.25	Recept TRACK POWER	2
3	Lighting SERVICE PEDESTAL	0.10	20/1 CB			X	------- ---		2.25	-------TRACK POWER	4
5	Recept SERVICE PEDESTAL	0.18	20/1 CB		X		20/1 CB		0.10	Lighting FLAG POLE	6
7	Equip PEDESTAL STRIP HEATER	1.00	20/1 CB			X	20/1 CB		0.18	Recept TRACK POWER	8
9	Spare	0.00	30/1 CB		X		20/1 CB		0.18	Recept TRACK POWER	10
11	Spare	0.00	20/1 CB			X	20/1 CB		0.50	Equip Irrigation Controller	12
13	Spare	0.00	20/1 CB		X		0/1		0.00	Space	14
15	Spare	0.00	20/1 CB			X	0/1		0.00	Space	16
17	Spare	0.00	20/1 CB		X		0/1		0.00	Space	18
19	Space	0.00	0/1			X	0/1		0.00	Space	20
21	Space	0.00	0/1		X		0/1		0.00	Space	22
23	Space	0.00	0/1			X	0/1		0.00	Space	24

		PH A	PH B
Rev:			
Revised Ckts Marked * Existing Ckts Marked #	Connected KVA	3.11	4.03

File: J:\B18830\Design\Sched\Panels.PNL

* Circuit Breaker Code
G = GFCI H = HID Rated
S = Shunt Trip C = HACR Rated
D = Switching Duty # = See Note
A = AFCI

Notes: Fed via 30KVA Transformer

Load Type	Conn KVA	NEC Demand Factor	Dem. KVA	Dem. Amps	NEC Feed %	NEC Feed Amps
Equip	1.90	x 100%	1.90	8	x 100%	8
Lighting	0.20	x 100%	0.20	1	x 125%	1
Recept	5.04	10 KVA @ 100%, rest @ 50%	5.04	21	x 100%	21
	7.14	30 Amps	7.14	30		30

Sparling — Panel

Name Panel 2A2 120/240V 1 PH 3W 100A Main CB Type: Panelboard
Location: OIT SHED Surface Mounted 10,000 AIC
Serves: OIT SHED Single Lugs

#	Description	Load	CB	*	A	B	CB		Load	Description	#
1	Spare	0.00	20/1 CB		X		0/1		0.00	Space	2
3	Spare	0.00	20/1 CB			X	0/1		0.00	Space	4
5	Spare	0.00	20/1 CB		X		0/1		0.00	Space	6
7	Spare	0.00	20/1 CB			X	0/1		0.00	Space	8
9	Spare	0.00	20/1 CB		X		0/1		0.00	Space	10
11	Spare	0.00	20/1 CB			X	0/1		0.00	Space	12
13	Space	0.00	0/1		X		0/1		0.00	Space	14
15	Space	0.00	0/1			X	0/1		0.00	Space	16
17	Space	0.00	0/1		X		0/1		0.00	Space	18

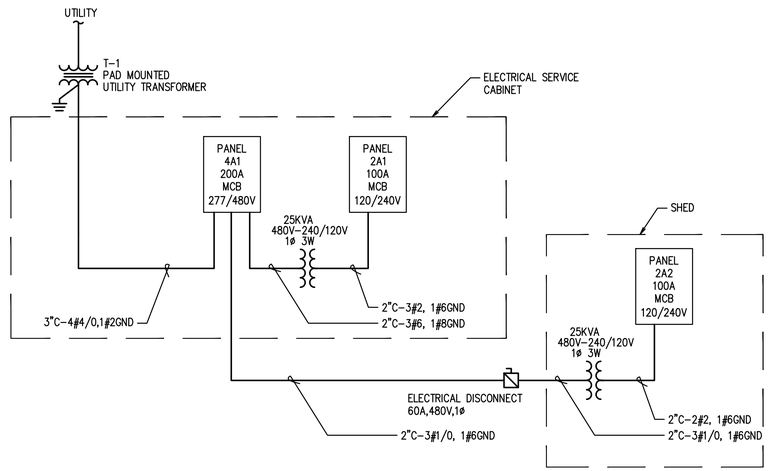
		PH A	PH B
Rev:			
Revised Ckts Marked * Existing Ckts Marked #	Connected KVA	0.00	0.00

File: J:\B18830\Design\Sched\Panels.PNL

* Circuit Breaker Code
G = GFCI H = HID Rated
S = Shunt Trip C = HACR Rated
D = Switching Duty # = See Note
A = AFCI

Notes: Fed via 15KVA Transformer

Load Type	Conn KVA	NEC Demand Factor	Dem. KVA	Dem. Amps	NEC Feed %	NEC Feed Amps
Space	0.00		0.00	0		0
	0.00	0 Amps	0.00	0		0



2 E2.2 ONE-LINE DIAGRAM
SCALE: NONE

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119 1st Avenue South, Suite 310 Seattle, Washington 98104
p. 206.285.0400 f. 206.285.0480

Director Decision Date: N.A.
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Designed By: RRK
Checked By: CBF, JED
Approved:
Rev 1 By:
Rev 2 By:
Rev 3 By:
As-Built
First Submittal Date:
Second Submittal Date:
City Approval Date:

OREGON TECH TRACK AND SOCCER PROJECT

CONSTRUCTION DOCUMENTS
MAP NO. 38-09-00, TAX LOT 4900
3201 CAMPUS DRIVE, KLAMATH FALLS, OREGON
CITY PROJECT NO. OIT-270-P-13-17

VERIFY SCALES
ORIGINAL DRAWING BAR IS ONE INCH ON.
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

REGISTERED PROFESSIONAL ENGINEER
JAMES E. DEHMAN
15025PE
OREGON
JUL 25, 1995
JAMES E. DEHMAN
EXPIRES 12-31-2015

E-2.2
Electrical Details & Schedules

AUSLAND PROJECT NO: 14-0708

J:\B18830\CAD-BIM\E22 Feb 05, 2015 8:33 AM ByRKATAYA
Drawing name: J:\B18830\CAD-BIM\E22.dwg
Plot Date: Feb 05, 2015 - 8:33am

MATCH LINE TO F-1.2

15' DOUBLE SWING GATE (10'+5') 3/F-7.10

4/F-7.5 3/F-7.5 COM-#1 COMMBOX & UTILITY ACCESS (TYP.)

ELECTRICAL HANDHOLE (SEE SHEET E-1.1)

7/F-7.2 CB-#2 SLOT DRAIN AND TYPE 1 CATCH BASIN (TYP.)

8-42" RUBBERIZED TRACK LANES (TYP.) 2/F-7.1

TRACK RAIL (TYP.) 25

1/F-7.8 NORTH TRACK SECTION

3/F-7.2 SLOT DRAIN (TYP.)

C-#4 VALVE & HEAD (TYP.) 1/F-7.6

C-#1 C-#2 C-#3 COM-#2 COM-#3 CB-#4

SG-#4 2/F-7.2 CB-#3 SLOT DRAIN CATCH BASIN (TYP.)

END OF EDGE ANCHOR AT SLOT DRAIN, BEGIN EDGE ANCHOR AT CONCRETE CURB 2/F-7.9 3/F-7.2

INFILLED SYNTHETIC TURF FIELD WITH SOCCER MARKINGS (TYP.) 1/F-7.1 1/F-8.1

SYNTHETIC TURF EDGE ANCHOR AT SLOT DRAIN (TYP.) 3/F-7.2

SG-#3 SOCCER GOAL ANCHOR (TYP.) 6/F-8.2

3/F-7.2 SYNTHETIC TURF EDGE ANCHOR AT SLOT DRAIN (TYP.)

RP-#7 20

6/F-7.2 5/F-7.2 CB-#6 TYPE 1 CATCH BASIN WITH TURF COVER

TRACK RAIL (TYP.) 25

SITE RESTORATION (TYP.) 3/F-7.1

60 LF BALL CONTROL NETTING 4/F-7.9

RUBBERIZED SURFACE OVER ASPHALT PAVING (TYP.) 2/F-7.1

SG-#1 SOCCER GOAL ANCHOR. MOVE OFF CENTER AS NEEDED TO AVOID CONFLICT

RP-#5 20

MID FIELD LOGO 5/F-8.2

RP-#1 RADIUS POINT MONUMENT (TYP.) 20 1/F-7.9

6/F-8.2 SOCCER GOAL ANCHOR (TYP.) SG-#2

RP-#6 20 RP-#3 20 RP-#2 20

25 TRACK RAIL (TYP.)

WEST TRACK SECTION 4/F-7.8

19

C-#10 VALVE & HEAD (TYP.) 1/F-7.6

RP-#4 RADIUS POINT MONUMENT (TYP.) 20 1/F-7.9

HIGH JUMP

SYNTHETIC TURF EDGE ANCHOR AT CONCRETE CURB (TYP.) 2/F-7.9

INFILLED SYNTHETIC TURF FIELD WITH SOCCER MARKINGS (TYP.) 1/F-7.1 1/F-8.1

END OF EDGE ANCHOR AT CONCRETE CURB, BEGIN EDGE ANCHOR AT SLOT DRAIN 2/F-7.9 3/F-7.2

RP-#8 20

SYNTHETIC TURF EDGE ANCHOR AT CONCRETE CURB (TYP.) 2/F-7.9

CB-#1 SLOT DRAIN AND TYPE 2 CATCH BASIN (TYP.) 7/F-7.2

TRACK RAIL (TYP.) 25

SG-#5 SOCCER GOAL ANCHOR (TYP.) 6/F-8.2

2/F-7.9 3/F-7.2

END OF EDGE ANCHOR AT CONCRETE CURB, BEGIN EDGE ANCHOR AT SLOT DRAIN

SYNTHETIC TURF EDGE ANCHOR AT SLOT DRAIN (TYP.) 3/F-7.2

4/F-7.5 3/F-7.5 COM-#5 COMMBOX & UTILITY ACCESS (TYP.)

2/F-7.9 3/F-7.2 END OF EDGE ANCHOR AT SLOT DRAIN, BEGIN EDGE ANCHOR AT CONCRETE CURB

PORTABLE DISCUS

8' HT. CHAINLINK FENCING AND SINGLE SWING GATE 4/F-7.10 2/F-7.10

10'x10' SHOT (CIRCLE ONLY)

SHOT PUT PAD AND TOE BOARD 1/F-7.11

CB-#10 TYPE 1 CATCH BASIN (TYP.) 5/F-7.2

LONG JUMP/ TRIPLE JUMP RUNWAY

C-#9 VALVE & HEAD (TYP.) 1/F-7.6

3/F-7.2 SLOT DRAIN (TYP.) COM-#6 (TYP.) C-#8 CB-#9

2/F-7.2 SLOT DRAIN CATCH BASIN (TYP.) 3/F-7.8 SOUTH TRACK SECTION

8-42" RUBBERIZED TRACK LANES (TYP.) 2/F-7.1

5/F-7.2 TYPE 1 CATCH BASIN (TYP.) CB-#13 CB-#7 C-#6 C-#7 SG-#6 COM-#4

EXISTING ELECTRICAL VAULTS TO REMAIN

19

6/F-7.12 LONG JUMP/ TRIPLE JUMP RUNWAY SECTION

LONG JUMP/ TRIPLE JUMP JUMP PIT 2/F-7.12

1/F-7.12 LONG JUMP TRIPLE JUMP PLAN VIEW

POLE VAULT RUNWAY SECTION 4/F-7.13

RUBBERIZED SURFACING OVER CONCRETE PAVING 2/F-7.1

CB-#11 CB-#12

SITE RESTORATION (TYP.) 3/F-7.1

DUAL POLE VAULT PLAN VIEW 2/F-7.13

POLE VAULT RUNWAY

CONCRETE PAVING 5/F-7.1

EXISTING IRRIGATION VAULTS TO REMAIN

3/F-7.1 SITE RESTORATION (TYP.) PAVED WALKWAY (TYP.)

4/F-7.1 SHOT PUT LANDING AREA

PROTECT EXISTING TREE TO REMAIN

SITE RESTORATION (TYP.) 3/F-7.1

STEEPLE CHASE 2/F-7.14

CB-#5 SLOT DRAIN CATCH BASIN (TYP.)

EAST TRACK SECTION

TRACK RAIL (TYP.) 28

60 LF BALL CONTROL NETTING 4/F-7.9

BASE BID LANDSCAPE RESTORATION SCHEDULE

TYPE 1: STADIUM LAWN, IRRIGATED, 2" RECLAIMED TOPSOIL INCORPORATED TO 4", KENTUCKY BLUEGRASS SEED
TYPE 2: THROWS VENUE LANDING AREA, UNIRRIGATED, 2" RECLAIMED TOPSOIL INCORPORATED TO 4", BLENDED SEED
TYPE 3: GRADING TRANSITION AREAS, UNIRRIGATED, GRADE ONLY, BLENDED SEED

ALTERNATE BID LANDSCAPE RESTORATION SCHEDULE

TYPE 1: STADIUM LAWN, IRRIGATED, 2" RECLAIMED TOPSOIL + 2" MFG. TOPSOIL INCORPORATED TO 6", KENTUCKY BLUEGRASS SEED
TYPE 2: THROWS VENUE LANDING AREA, IRRIGATED, 2" RECLAIMED TOPSOIL + 2" MFG. TOPSOIL INCORPORATED TO 6", KENTUCKY BLUEGRASS SEED
TYPE 3: GRADING TRANSITION AREAS, UNIRRIGATED, 2" RECLAIMED TOPSOIL INCORPORATED TO 4", BLENDED SEED

LAYOUT NOTES

FIELD & TRACK LAYOUT NOTES:

1. LAYOUT CONTROL PLAN ON SHEET F-6.1. DIGITAL DATA PROVIDED TO THE CONTRACTOR AFTER BID AWARD UPON REQUEST. DO NOT SCALE PRINTED DRAWINGS.
2. ESTABLISH THE LAYOUT OF THE TRACK RADIUS POINTS, CENTERLINE, AND MEASURING LINE, AND VERIFY 400M DISTANCE PRIOR TO COMMENCING CONSTRUCTION STAKING. SEVERAL OFFSET DIMENSIONS BASED ON THE MEASURING LINE ARE PROVIDED.
3. FURNISH AND INSTALL THE TRACK SLOT DRAIN SYSTEM INCLUDING CATCH BASINS, CONNECTIONS, AND CONCRETE ENCASEMENT AS SHOWN AND DESCRIBED. MEASUREMENTS TO OUTSIDE FACE AS PROVIDED. PROVIDE FOR UTILITIES ACCESS BOXES INCLUDING SPECIFIED CLEARENCES AND CONCRETE COVER. INSTALL SYNTHETIC TURF EDGE ANCHOR ON THE INSIDE FACE A SHOWN.
4. FURNISH AND INSTALL CONTINUOUS CONCRETE TRACK ASPHALT PAVEMENT CONTAINMENT CURB ALONG OUTSIDE PERIMETER, MEETING LAYOUT AND GRADING TOLERENCES. VERIFY A 3.25' MINIMUM CLEARANCE BETWEEN THE OUTSIDE EDGE OF THE OUTSIDE LANE OF THE RUBBERIZED SURFACING AND ANY VERTICAL FEATURE EXISTING OR PROPOSED INCLUDING TREES AND SHRUBS, ELECTRICAL EQUIPMENT, AND FENCING.
5. INSTALL ALL IN-FIELD UTILITIES A SHOWN AND DIRECTED; STAKE LOCATIONS FOR APPROVAL PRIOR TO INSTALLATION. UTILITY PIPING AND RACEWAYS ARE SHOWN SCHEMATICALLY; INCORPORATE COMMON TRENCHING AND PLACE VALVES AND APPURTENANCES AS CLOSE AS PRATICAL.
6. PROVIDE CONCRETE CONTAINMENT CURB AND RUBBERIZED SURFACING TERMINATION SURROUNDING ALL RUBBERIZED TRACK AND FIELD EVENT SURFACING. NO RUBBERIZED SURFACING SHALL BE PLACED ON UNCONTAINED ASPHALT PAVING, AND NO RUBBERIZED SURFACING SHALL TERMINANTE IN ANY WAY WHOLEY OR PARTLY ON OTHER THAN CONCRETE, OR APPROVED STEEL, ALUMINUM, OR WOOD UTILITIES ACCESS COMPONENTS.
7. FURNISH AND INSTALL SYNTHETIC TURF COVERS FOR CATCH BASINS LOCATED IN THE SYNTHETIC TURF FIELD AREA NOT OTHERWISE SCHEDULED TO RECEIVE RUBBERIZED SURFACING COVER.
8. FURNISH AND INSTALL RUBBERIZED SURFACING ON ALL UTILITIES INCLUDING FIELD COOLING SYSTEM COMPONENTS, ELECTRICAL AND COMMUNICATIONS HANDHOLES, WATER SYSTEMS CONTROL VALVES, AND CATCH BASINS LOCATED WITHIN OR ADJACENT TO THE RUNNING TRACK AND FIELD EVENT AREAS.
9. FURNISH AND INSTALL IN-GROUND, LOCKING CABLE ANCHORS FOR PORTABLE SOCCER GOALS, TOTAL 6 (SIX) AS SHOWN OR DIRECTED.
10. ALL LAYOUT (HORIZONTAL AND VERTICAL) SHALL MEET NCAA REQUIREMENTS FOR THE COMPETITION FACILITY PROPOSED. NON-COMPETITION AREAS SHALL BE LAID OUT TO +/-0.10':10'.

(CONTINUED ON SHEET F-1.2)

LAYOUT LEGEND

- SYNTHETIC TURF AND PERMEABLE AGGREGATE
- RUBBERIZED SURFACING (12) OVER ASPHALT PAVING
- THICKENED SURFACE, 20MM, DIMENSION PER IAAF (12) TABLE 3.1.22
- THICKENED SURFACE, WATER JUMP SURFACE, 25MM, DIMENSION PER IAAF TABLE 3.1.22 (PROVIDE STANDARD (12) SURFACE ON COVERS)
- CINDERS
- ASPHALT PAVING
- RUBBERIZED SURFACING (12) OVER CONCRETE PAVING
- CONCRETE PAVING
- JUMP PIT SAND
- LANDSCAPE RESTORATION TYPE 1
- CONCRETE CURBING
- LIMIT OF SYNTHETIC TURF AND EDGE ANCHOR
- SLOT DRAIN
- TYPE 1 AND SLOT DRAIN CATCH BASIN
- TYPE 2 AND SLOT DRAIN CATCH BASIN
- SLOT DRAIN CATCH BASIN
- TYPE 1 CATCH BASIN
- VALVE & HEAD IN RUBBERIZED SURFACE
- COMMBOX & UTILITY ACCESS
- BALL CONTROL NETTING

Scale: = 1"=30'
0 30' 60'
(11x17 Double Scale)

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Medford 541.773.3387

DA HOGAN
119 1st Avenue South, Suite 310
Seattle, Washington 98104
p. 206.285.0400
f. 206.285.0400

Director Decision Date: N.A.
First Submittal Date: 01-07-2015
Second Submittal Date: 01-27-2015
City Approval Date:
By: By: By:
Drawn By: CPW, JS
Designed By: EJG
Checked By: EJG, RSH
Approved:
Rev 1 Rev 2 Rev 3 As-Built

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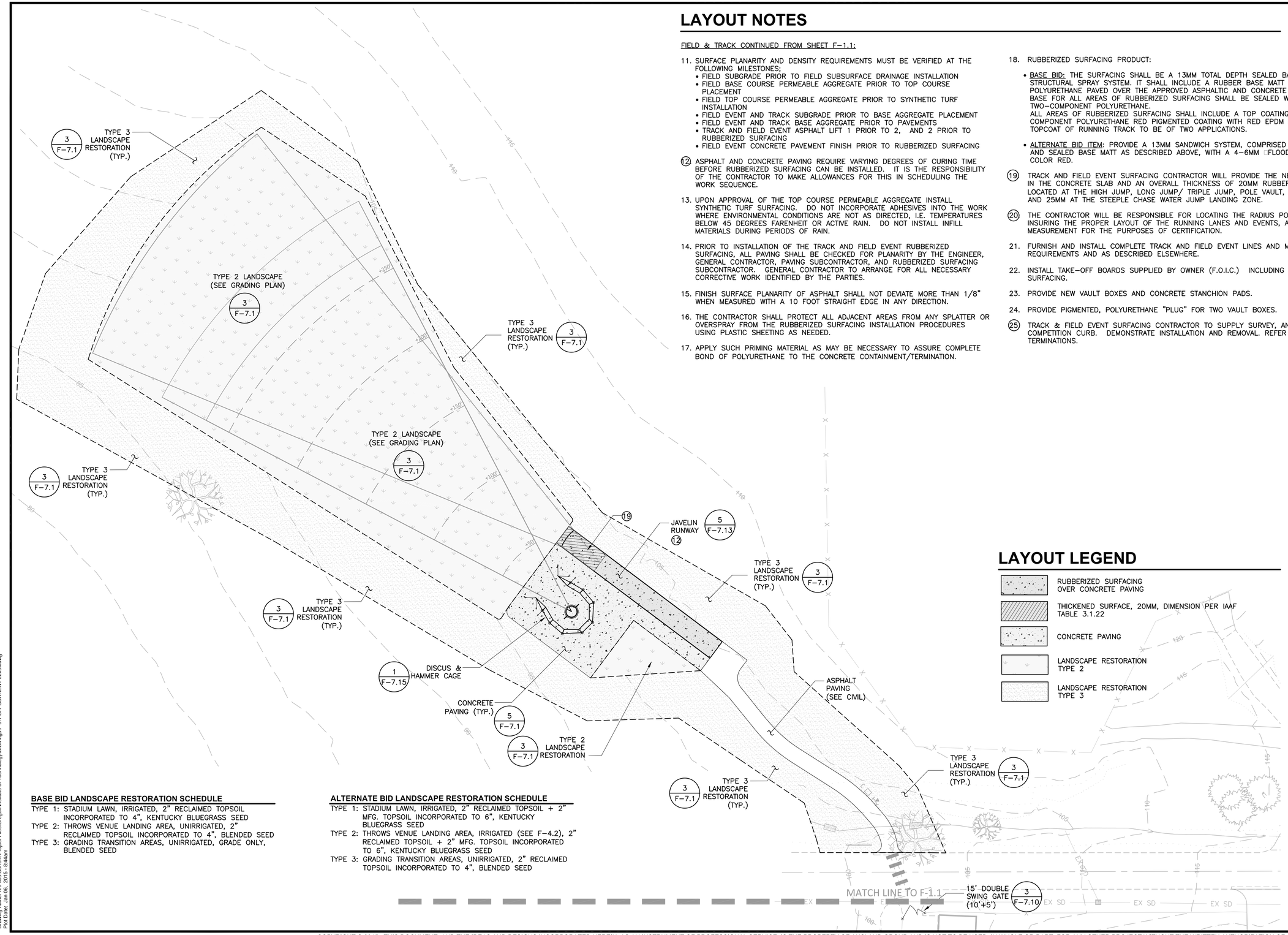
REGISTERED LANDSCAPE ARCHITECT
548
ROBERT HARDING
OREGON
05/31/15

SHEET
F-1.1
FIELD & TRACK LAYOUT PLAN

AUSLAND PROJECT NO: 14-0708

Drawing name: K:\Files\Current Project Files\Oregon Institute of Technology\Drawings\F-0.1 OIT CURRENT 22x34.dwg
Plot Date: Jan 27, 2015 - 3:48pm



LAYOUT NOTES

FIELD & TRACK CONTINUED FROM SHEET F-1.1:

11. SURFACE PLANARITY AND DENSITY REQUIREMENTS MUST BE VERIFIED AT THE FOLLOWING MILESTONES;
    - FIELD SUBGRADE PRIOR TO FIELD SUBSURFACE DRAINAGE INSTALLATION
    - FIELD BASE COURSE PERMEABLE AGGREGATE PRIOR TO TOP COURSE PLACEMENT
    - FIELD TOP COURSE PERMEABLE AGGREGATE PRIOR TO SYNTHETIC TURF INSTALLATION
    - FIELD EVENT AND TRACK SUBGRADE PRIOR TO BASE AGGREGATE PLACEMENT
    - FIELD EVENT AND TRACK BASE AGGREGATE PRIOR TO PAVEMENTS
    - TRACK AND FIELD EVENT ASPHALT LIFT 1 PRIOR TO 2, AND 2 PRIOR TO RUBBERIZED SURFACING
    - FIELD EVENT CONCRETE PAVEMENT FINISH PRIOR TO RUBBERIZED SURFACING
12. ASPHALT AND CONCRETE PAVING REQUIRE VARYING DEGREES OF CURING TIME BEFORE RUBBERIZED SURFACING CAN BE INSTALLED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE ALLOWANCES FOR THIS IN SCHEDULING THE WORK SEQUENCE.
13. UPON APPROVAL OF THE TOP COURSE PERMEABLE AGGREGATE INSTALL SYNTHETIC TURF SURFACING. DO NOT INCORPORATE ADHESIVES INTO THE WORK WHERE ENVIRONMENTAL CONDITIONS ARE NOT AS DIRECTED, I.E. TEMPERATURES BELOW 45 DEGREES FARENHEIT OR ACTIVE RAIN. DO NOT INSTALL INFILL MATERIALS DURING PERIODS OF RAIN.
14. PRIOR TO INSTALLATION OF THE TRACK AND FIELD EVENT RUBBERIZED SURFACING, ALL PAVING SHALL BE CHECKED FOR PLANARITY BY THE ENGINEER, GENERAL CONTRACTOR, PAVING SUBCONTRACTOR, AND RUBBERIZED SURFACING SUBCONTRACTOR. GENERAL CONTRACTOR TO ARRANGE FOR ALL NECESSARY CORRECTIVE WORK IDENTIFIED BY THE PARTIES.
15. FINISH SURFACE PLANARITY OF ASPHALT SHALL NOT DEVIATE MORE THAN 1/8" WHEN MEASURED WITH A 10 FOOT STRAIGHT EDGE IN ANY DIRECTION.
16. THE CONTRACTOR SHALL PROTECT ALL ADJACENT AREAS FROM ANY SPLATTER OR OVERSPRAY FROM THE RUBBERIZED SURFACING INSTALLATION PROCEDURES USING PLASTIC SHEETING AS NEEDED.
17. APPLY SUCH PRIMING MATERIAL AS MAY BE NECESSARY TO ASSURE COMPLETE BOND OF POLYURETHANE TO THE CONCRETE CONTAINMENT/TERMINATION.
18. RUBBERIZED SURFACING PRODUCT:
    - BASE BID: THE SURFACING SHALL BE A 13MM TOTAL DEPTH SEALED BASE MATT AND RED STRUCTURAL SPRAY SYSTEM. IT SHALL INCLUDE A RUBBER BASE MATT BOUND WITH POLYURETHANE PAVED OVER THE APPROVED ASPHALTIC AND CONCRETE BASE. THE RUBBER BASE FOR ALL AREAS OF RUBBERIZED SURFACING SHALL BE SEALED WITH A RED PIGMENTED TWO-COMPONENT POLYURETHANE.
      ALL AREAS OF RUBBERIZED SURFACING SHALL INCLUDE A TOP COATING OF SINGLE COMPONENT POLYURETHANE RED PIGMENTED COATING WITH RED EPDM RUBBER GRANULES. TOPCOAT OF RUNNING TRACK TO BE OF TWO APPLICATIONS.
    - ALTERNATE BID ITEM: PROVIDE A 13MM SANDWICH SYSTEM, COMPRISED OF AN 8-9MM PAVED AND SEALED BASE MATT AS DESCRIBED ABOVE, WITH A 4-6MM □FLOOD AND CHIP□ SURFACE, COLOR RED.
19. TRACK AND FIELD EVENT SURFACING CONTRACTOR WILL PROVIDE THE NECESSARY DEPRESSIONS IN THE CONCRETE SLAB AND AN OVERALL THICKNESS OF 20MM RUBBERIZED SURFACING LOCATED AT THE HIGH JUMP, LONG JUMP/ TRIPLE JUMP, POLE VAULT, AND JAVELIN RUNWAYS, AND 25MM AT THE STEEPLE CHASE WATER JUMP LANDING ZONE.
20. THE CONTRACTOR WILL BE RESPONSIBLE FOR LOCATING THE RADIUS POINTS REQUIRED FOR INSURING THE PROPER LAYOUT OF THE RUNNING LANES AND EVENTS, AND VERIFYING MEASUREMENT FOR THE PURPOSES OF CERTIFICATION.
21. FURNISH AND INSTALL COMPLETE TRACK AND FIELD EVENT LINES AND MARKINGS TO NCAA REQUIREMENTS AND AS DESCRIBED ELSEWHERE.
22. INSTALL TAKE-OFF BOARDS SUPPLIED BY OWNER (F.O.I.C.) INCLUDING RUBBERIZED SURFACING.
23. PROVIDE NEW VAULT BOXES AND CONCRETE STANCHION PADS.
24. PROVIDE PIGMENTED, POLYURETHANE "PLUG" FOR TWO VAULT BOXES.
25. TRACK & FIELD EVENT SURFACING CONTRACTOR TO SUPPLY SURVEY, AND INSTALL REMOVABLE COMPETITION CURB. DEMONSTRATE INSTALLATION AND REMOVAL. REFER TO F-1.1 FOR TERMINATIONS.

LAYOUT LEGEND

- RUBBERIZED SURFACING OVER CONCRETE PAVING
- THICKENED SURFACE, 20MM, DIMENSION PER IAAF TABLE 3.1.22
- CONCRETE PAVING
- LANDSCAPE RESTORATION TYPE 2
- LANDSCAPE RESTORATION TYPE 3

BASE BID LANDSCAPE RESTORATION SCHEDULE

TYPE 1: STADIUM LAWN, IRRIGATED, 2" RECLAIMED TOPSOIL INCORPORATED TO 4", KENTUCKY BLUEGRASS SEED
TYPE 2: THROWS VENUE LANDING AREA, UNIRRIGATED, 2" RECLAIMED TOPSOIL INCORPORATED TO 4", BLENDED SEED
TYPE 3: GRADING TRANSITION AREAS, UNIRRIGATED, GRADE ONLY, BLENDED SEED

ALTERNATE BID LANDSCAPE RESTORATION SCHEDULE

TYPE 1: STADIUM LAWN, IRRIGATED, 2" RECLAIMED TOPSOIL + 2" MFG. TOPSOIL INCORPORATED TO 6", KENTUCKY BLUEGRASS SEED
TYPE 2: THROWS VENUE LANDING AREA, IRRIGATED (SEE F-4.2), 2" RECLAIMED TOPSOIL + 2" MFG. TOPSOIL INCORPORATED TO 6", KENTUCKY BLUEGRASS SEED
TYPE 3: GRADING TRANSITION AREAS, UNIRRIGATED, 2" RECLAIMED TOPSOIL INCORPORATED TO 4", BLENDED SEED

Scale: = 1"=30'
0 30' 60'
(11x17 Double Scale)

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Seattle, Washington 98104
p. 206.285.0400
f. 206.285.0400

Drawn By: CPW, JS
Designed By: EJG
Checked By: EJG, RSH
Approved:
Director Decision Date: N.A.
First Submittal Date: 07-07-2015
Second Submittal Date:
City Approval Date:
Rev 1 By:
Rev 2 By:
Rev 3 By:
As-Built

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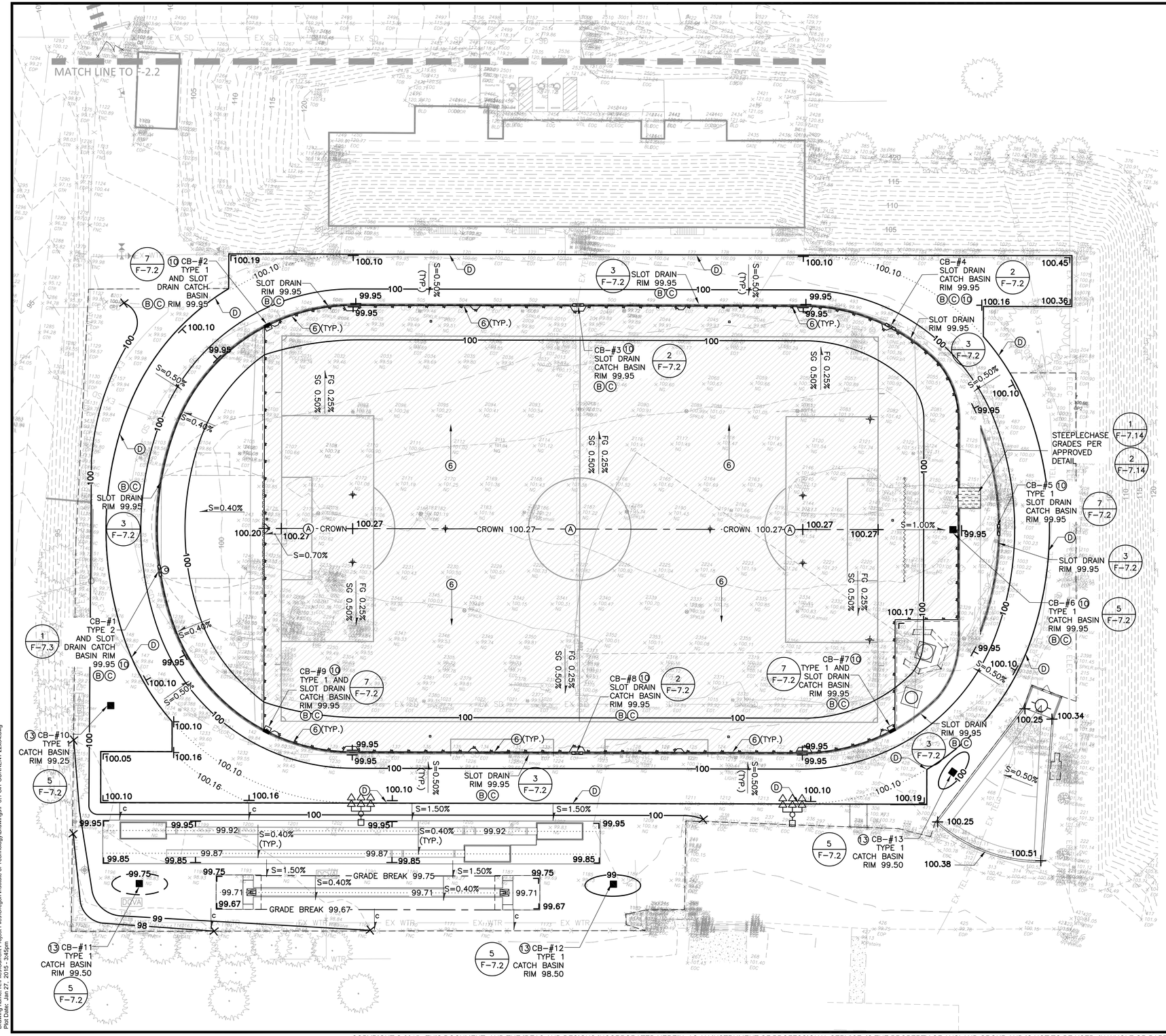
REGISTERED LANDSCAPE ARCHITECT
548
ROBERT HARDING
OREGON
05/31/15

SHEET
F-1.2
FIELD EVENTS LAYOUT PLAN

Drawing name: K:\Files\Current Project Files\Oregon Institute of Technology\Drawings\F-0.1 OIT CURRENT 22x34.dwg
Plot Date: Jan 06, 2015 - 8:44am



Ⓐ SYNTHETIC TURF FIELD CENTERLINE/ CROWN:

SUBGRADE ELEVATION:

FINISH GRADE OF BASE COURSE PERMEABLE AGGREGATE (6" DEPTH):	99.80
FINISH GRADE OF TOP COURSE PERMEABLE AGGREGATE (2" DEPTH):	100.30
FINISH GRADE OF SYNTHETIC TURF INFILL (1.5" DEPTH):	100.47
	100.60

Ⓑ SYNTHETIC TURF FIELD EDGE AT SLOT DRAIN

SUBGRADE ELEVATION:

FINISH GRADE OF BASE COURSE PERMEABLE AGGREGATE (10" DEPTH):	98.82
FINISH GRADE OF TOP COURSE PERMEABLE AGGREGATE (2" DEPTH):	99.65
FINISH GRADE OF SYNTHETIC TURF INFILL (1.5" DEPTH):	99.82
	99.95

RUBBERIZED RUNNING TRACK AREAS:

Ⓒ INSIDE EDGE:

SUBGRADE ELEVATION:

FINISH GRADE OF BASE AGGREGATE (6" DEPTH):	99.10
FINISH GRADE OF ASPHALT PAVING – 1ST LIFT (2" DEPTH)	99.60
FINISH GRADE OF ASPHALT PAVING – 2ND LIFT (1.5" DEPTH):	99.77
FINISH GRADE OF RUBBERIZED SURFACING (0.5" DEPTH):	99.90
	99.95

Ⓓ OUTSIDE EDGE:

SUBGRADE ELEVATION:

FINISH GRADE OF BASE AGGREGATE (6" DEPTH):	99.26
FINISH GRADE OF ASPHALT PAVING – 1ST LIFT (2" DEPTH)	99.76
FINISH GRADE OF ASPHALT PAVING – 2ND LIFT (1.5" DEPTH):	99.93
FINISH GRADE OF RUBBERIZED SURFACING (0.5" DEPTH):	100.06
	100.10

GRADING NOTES

1. THE CONTRACTOR SHALL CALL AND NOTIFY DIG ALERT 8–1–1 A MINIMUM OF 2 WORKING DAYS BEFORE DEMOLITION, DIGGING, OR GRADING OPERATIONS OCCUR.
2. BACKFILL AND COMPACT EXCAVATED AREAS RESULTING FROM ALL WORK WITH APPROVED SELECT FILL TO 95% WITH 12" MAX LIFTS.
3. EARTHWORK SEQUENCE
   - STRIP 3" (0.25') OF EXISTING INFIELD SOD AND ROOT MASS AND TRANSPORT TO ON–CAMPUS DISPOSAL SITE. DUMP IN PLACE AS DIRECTED.
   - STRIP AND STOCKPILE REMAINING 6" (050') OF ROOT ZONE SAND MATERIALS AND STOCKPILE FOR RE–USE AS GROWING MEDIUM FOR LAWN RESTORATION.
   - EXCAVATE NATIVE AND EXISTING FILL SOILS WITHIN THE STADIUM SITE FOR RE–USE AS FILLS ON THE N. UNIVERSITY DR. THROWS VENUE.
   - IMPORT APPROVED BULK FILL MATERIALS AS NECESSARY TO RECOVER VOLUME REQUIRED TO ESTABLISH DESIGNED SUBGRADE AT THE N. UNIVERSITY DR. THROWS VENUE.
   - REMOVE ALL RUBBERIZED SURFACING, ASPHALT PAVING, AND CONCRETE PAVING AND DISPOSE OF OFF SITE.
   - INCORPORATE REMAINING PAVEMENT BASE AGGREGATE MATERIALS INTO EITH THE STADIUM FIELD/TRACK SUBGRADE OR FILLS AT N. UNIVERSITY DR. THROWS VENUE.
   - NOTIFY THE ENGINEER UPON ESTABLIHSMENT OF ROUGH SUBGRADE AT FIELD AND TRACK AND N. UNIVERSITY THROWS VENUE.
4. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN THE EVENT OR DISCOVERY OF POOR SOILS, GROUNDWATER OR DISCREPANCIES IN THE EXISTING CONDITIONS AS NOTED ON THE PLANS.

(CONTINUED ON SHEET F–2.2)

GRADING LEGEND

- EXISTING CONTOUR LINES
- SPOT ELEVATION
- NEW CONTOUR LINES
- FINISH GRADE SURFACE SLOPE / SUB GRADE SURFACE SLOPE
- CONSTANT SURFACE SLOPE
- MATCH TO EXISTING
- LIMIT OF PERMEABLE AGGREGATE
- CATCH BASIN INLET (C.B.I.) TYPE 1
- SLOT DRAIN CATCH BASIN
- SLOT DRAIN TYPE 1 CATCH BASIN
- LIMIT OF SYNTHETIC TURF AND EDGE ANCHOR
- SLOT DRAIN

Scale: = 1"=30'

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Drawn By: CPW, JS | Director Decision Date: N.A.
Designed By: EJG | First Submittal Date: 01-07-2015
Checked By: EJG, RSH | Second Submittal Date: 01-27-2015
Approved: | City Approval Date:
Rev 1 By: | Rev 2 By: | Rev 3 By: | As-Built

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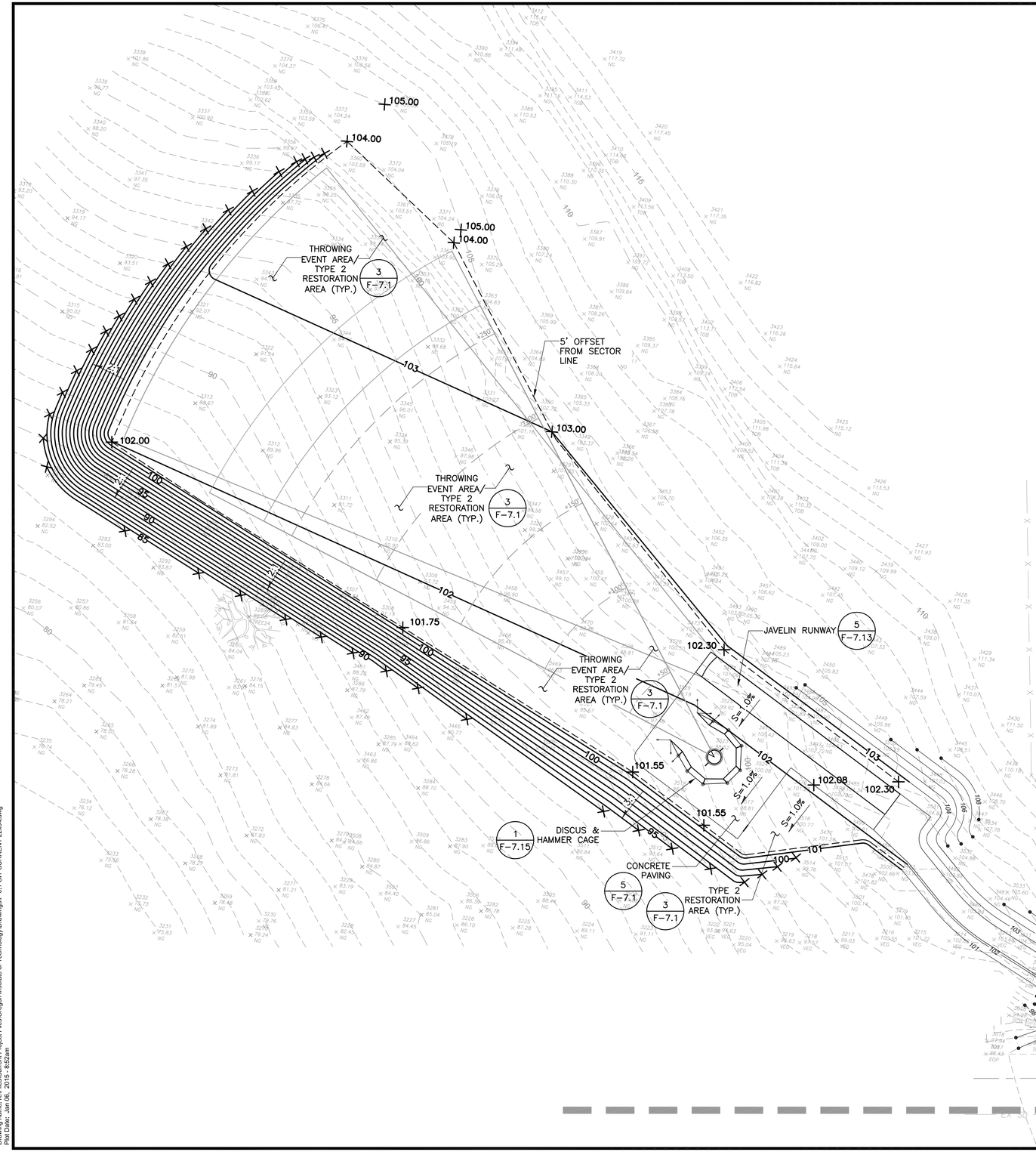
SHEET
F-2.1
FIELD & TRACK GRADING PLAN

AUSLAND PROJECT NO: 14-0708

Drawing name: K:\Files\Current Project Files\Oregon Institute of Technology\Drawings\F-0.1 OIT CURRENT 22x34.dwg
Plot Date: Jan 27, 2015 - 3:45pm



GRADING NOTES

FIELD & TRACK CONTINUED FROM SHEET F-2.1:

5. THE RUBBERIZED RUNNING TRACK SHALL HAVE A CONSTANT CROSS SLOPE AS SHOWN, PERPENDICULAR TO ALL RUNNING LANES WITHIN THE CONTINUOUS 400M CIRCUIT ("CHUTES" TO HAVE A CONTINUATION OF THE SAME SLOPE, GENERALLY AT SOME DIAGONAL RELATIONSHIP). THE RUNNING TRACK PAVING SHALL BE FLUSH WITH THE INTERIOR SLOT DRAIN. POSITIVE DRAINAGE SHALL BE MAINTAINED ACROSS THE WIDTH OF THE TRACK INTO THE SLOT DRAIN OPENING. BIRD BATHS OR PONDING OF SURFACE WATER WILL NOT BE PERMITTED.

6. THE FIELD SECTION SHALL BE CONSTRUCTED SUCH THAT THE SUBGRADE SLOPES AT A CONSTANT 0.5% FROM CENTERLINE TO THE COLLECTOR TRENCH AND THE FINISHED GRADE SLOPES AT 0.25%. THE ENDS OF THE FIELD SHALL BE COMPRISED OF CONSTANT –SLOPE TRANSITIONS FROM THE CROWN CONDITION TO THE DESIGN CURB ELEVATIONS SHOWN.

7. ALL SOIL SUBGRADE SHALL BE PROPERLY MOISTURE CONDITIONED AND TESTED FOR PLANARITY AND DENSITY IMMEDIATELY PRIOR TO BEING COVERED.

8. SYNTHETIC TURF EDGE ANCHOR/NAILER SHALL BE INSTALLED ON THE INTERIOR FACE OF THE TRACK CONCTAINEMENT CURB, SLOT DRAIN ENCASEMENT, AND UTILITY ACCESS APRON PAVING AT AN ELEVATION THAT HAS BEEN APPROVED PRIOR TO THE ESTABLISHMENT OF THE SUBGRADE. TOP COURSE PERMEABLE AGGREGATE SHALL BE INSTALLED UNIFORMLY FLUSH TO THE TOP OF THE EDGE TURF NAILER/ANCHOR AS SHOWN IN THE DETAILS.

9. NEW PERIMETER PAVING/CONCRETE SHALL MEET AND MATCH ADJACENT EXISTING SURFACES. CONTRACTOR SHALL PROTECT EDGES OF EXISTING PAVEMENTS TO REMAIN BY NOT MAKING A FINAL SAWCUT ON THESE SURFACES UNTIL PREPARING TO PERFORM THE PATCHING WORK.

10. ACTUAL RIM ELEVATIONS OF CATCH BASINS AT THE TRACK AND FIELD EDGES NEED TO ACCOMMODATE RUBBERIZED OR SYNTHETIC TURF SURFACING COVER PER DETAILS.

11. PROVIDE POSITIVE DRAINAGE FOR ALL RUBBERIZED SURFACING IN THE "D" AREAS. DO NOT EXCEED NCAA REQUIREMENTS.

12. MEET AND MATCH ALL EXISTING, UNDISTURBED SURFACES IN A SMOOTHLY TRANSITIONING MANNER. ALL SURFACES SHALL BE POSITIVELY DRAINING AND OF AN APPROPRIATE DENSITY PRIOR TO THE APPLICATION OF THE SCHEDULED FINISH WORK I.E. PAVEMENTS OR LANDSCAPING.

13. ADJUST CATCH BASINS IN LANDSCAPE AREAS AS DIRECTED. ALLOW A MINIMUM 6 INCH (0.50') ADJUSTMENT WHEN SETTING MAIN BODY OF EACH CATCH BASIN.

NOTE LEGEND

1. (INDICATES GENERAL CONSTRUCTION NOTE)
3. (INDICATES SPECIFIC CONSTRUCTION KEYNOTE)

GRADING LEGEND

- 110 — EXISTING CONTOUR LINES
- 100.12 — SPOT ELEVATION
- 100 — NEW CONTOUR LINES
- S=1.00% — SURFACE SLOPE
- c — CONSTANT SURFACE SLOPE
- MATCH TO EXISTING

Scale: = *1"=30'*

0 30' 60'

(11x17 Double Scale)

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Drawn By: CPW, JS
Designed By: EJG
Checked By: EJG, RSH
Approved:
Director Decision Date: N.A.
First Submittal Date: 01-07-2015
Second Submittal Date:
City Approval Date:
Rev 1 By:
Rev 2 By:
Rev 3 By:
As-Built

OREGON TECH TRACK AND SOCCER PROJECT
CONSTRUCTION DOCUMENTS
MAP NO. 38-09-00, TAX LOT 4900
3201 CAMPUS DRIVE, KLAMATH FALLS, OREGON
CITY PROJECT NO. OIT-270-P-13-17

VERIFY SCALES
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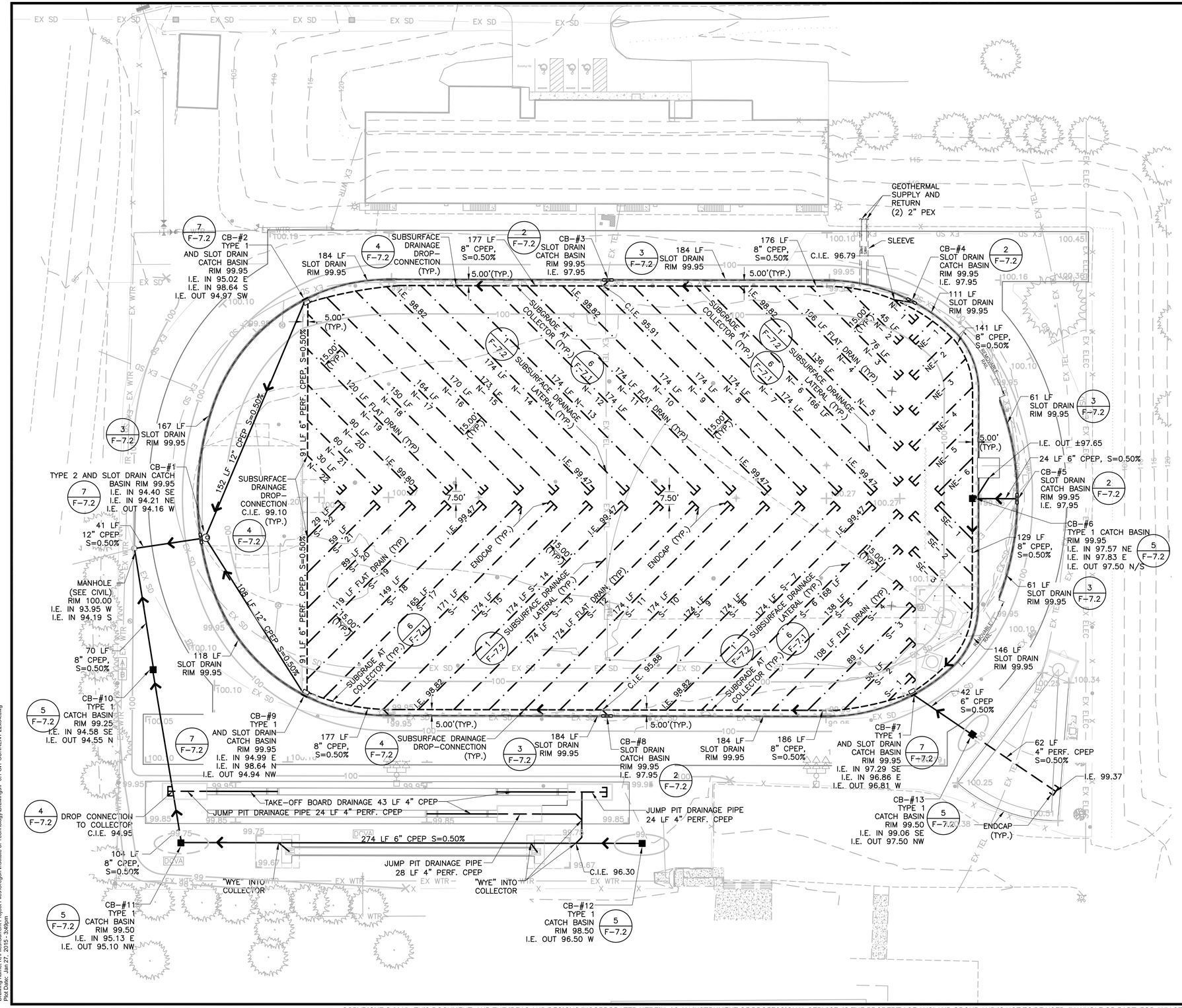
REGISTERED
548
ROBERT HARDING
OREGON
05/31/15
LANDSCAPE ARCHITECT

SHEET
F-2.2
FIELD EVENTS GRADING PLAN

Drawing name: K:\Files\Current Project Files\Oregon Institute of Technology\Drawings\F-0.1 OIT CURRENT 22x34.dwg
Plot Date: Jan 06, 2015 - 8:52am

AUSLAND PROJECT NO: 14-0708

A PORTION OF SECTIONS 17 & 20, TOWNSHIP 38S., RANGE 9E., W.M., KLAMATH COUNTY, OREGON



DRAINAGE NOTES

1. SUBSURFACE DRAINAGE COLLECTOR PIPE CAN BE INSTALLED PRIOR TO FINAL ACCEPTANCE OF THE FIELD SUBGRADE.
2. COORDINATION: IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT THE ALL WATER SYSTEMS PIPING IS INSTALLED AT A SUFFICIENT DEPTH BELOW SUBGRADE BEFORE THE TRENCHING FOR THE SUBSURFACE DRAINAGE SYSTEMS TO AVOID CONFLICTS BETWEEN SYSTEMS.
3. NO FIELD SUBSURFACE DRAINAGE (FLAT DRAINS OR TRADITIONAL TRENCHED ROUND PIPE) SHALL BE INSTALLED PRIOR TO THE APPROVAL OF THE PREPARED SUBGRADE DENSITY AND PLANARITY.
4. ALL FLAT DRAIN PIPE IS TO BE INSTALLED ON AN APPROVED NON-WOVEN POLYPROYLENE GEOTEXTILE. ALL TRENCHED SUBSURFACE DRAINAGE SHALL HAVE SIMILAR EQUAL FABRIC INSTALLED ALONG THE TRENCH WALLS AND ON THE SUBGRADE BETWEEN TRENCHES.
5. TRENCHING FOR THE SUBSURFACE DRAINAGE LATERALS SHALL NOT PROCEED UNTIL THE IRRIGATION SYSTEM PIPING HAS BEEN BACKFILLED AND COMPACTED AND THE FIELD SUBGRADE IS APPROVED BY ENGINEER.
6. TRENCH EXCAVATION SHALL BE MADE TO THE ALIGNMENT, ELEVATION, GRADE AND SLOPE AS INDICATED ON THE DRAWINGS. 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.
7. 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.
8. SURPLUS EXCAVATED SOIL SHALL BE REMOVED FROM THE FIELD AREA PRIOR TO COMMENCING ON THE NEXT ADJACENT TRENCH. EXCAVATED MATERIAL MAY NOT REMAIN ON SUBGRADE. PROVIDE A SMOOTH, EVEN SUBGRADE AFTER REMOVAL OF THE TRENCH MATERIAL. LEAVE NO LOOSE MATERIAL ON THE SUBGRADE.
9. 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 PERFORATED PIPE.
10. NO FOREIGN MATERIAL WILL BE PERMITTED INSIDE, ALONGSIDE, UNDER, OR ON TOP OF THE PERFORATED DRAIN PIPE.
11. THE BACKFILL FOR ALL PERFORATED PIPE SHALL BE CLEAN WASHED PEA GRAVEL. REFER TO THE SPECIFICATIONS FOR THE GRADATION REQUIREMENTS.
12. 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 SAND OR BASE AGGREGATE.
13. DURING PLACEMENT OF SPECIFIED TRENCH BACKFILL, PIPE MUST BE HELD IN PLACE 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.
14. CAP THE ENDS OF ALL LATERAL RUNS. ALL OPEN ENDS DURING CONSTRUCTION ARE TO BE TEMPORARILY CAPPED OR PLUGGED.
15. CONNECTION OF LATERALS TO COLLECTOR DRAINS SHALL BE MADE WITH A COMBINATION REDUCING TEE AND REDUCING SADDLE TEE.
16. NO TRUCKS OR EQUIPMENT WILL BE ALLOWED TO DRIVE OVER THE TOP OF THE TRENCHES EXCEPT TRACK-EQUIPPED MACHINERY UTILIZED IN SPREADING IMPORTED SAND OR BASE AGGREGATE MATERIALS. BACKFILLED TRENCHES ARE TO BE STAKED AND FLAGGED 3' ABOVE GRADE AT MAXIMUM 30' SPACING FOR IDENTITY.

NOTE LEGEND

1. (INDICATES GENERAL CONSTRUCTION NOTE)
③ (INDICATES SPECIFIC CONSTRUCTION KEYNOTE)

DRAINAGE LEGEND

E-·-·-	END CAP
-·-·-·-	FLATDRAIN 12"x1"
— — —	4" PERF. CPEP
———	CPEP SUBSURFACE DRAINAGE COLLECTOR OR STORM DRAIN PIPE
S=0.50%	PIPE SLOPE
←	FLOW DIRECTION
IE 94.30	INVERT ELEVATION
CIE 93.00	COLLECTOR INVERT ELEVATION
▬	SLOT DRAIN
◨	TYPE 1 AND SLOT DRAIN CATCH BASIN
◨	TYPE 2 AND SLOT DRAIN CATCH BASIN
■	SLOT DRAIN CATCH BASIN
◆	TYPE 1 CATCH BASIN
HWS HWR	GEOTHERMAL SUPPLY & RETURN
- - - -	SLEEVE

811
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Drawn By:	CPW, JS	Director Decision Date:	N.A.
Designed By:	EJG	First Submittal Date:	01-07-2015
Checked By:	EJG, RSH	Second Submittal Date:	01-27-2015
Approved:		City Approval Date:	
Rev 1 △1		By:	
Rev 2 △2		By:	
Rev 3 △3		By:	
As-Built			

OREGON TECH TRACK AND SOCCER PROJECT

CONSTRUCTION DOCUMENTS
MAP NO. 38-09-00, TAX LOT 4900
3201 CAMPUS DRIVE, KLAMATH FALLS, OREGON
CITY PROJECT NO. OIT-270-P-13-17

VERIFY SCALES
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REGISTERED LANDSCAPE ARCHITECT
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OREGON
05/31/15

SHEET
F-3.1
FIELD & TRACK DRAINAGE PLAN

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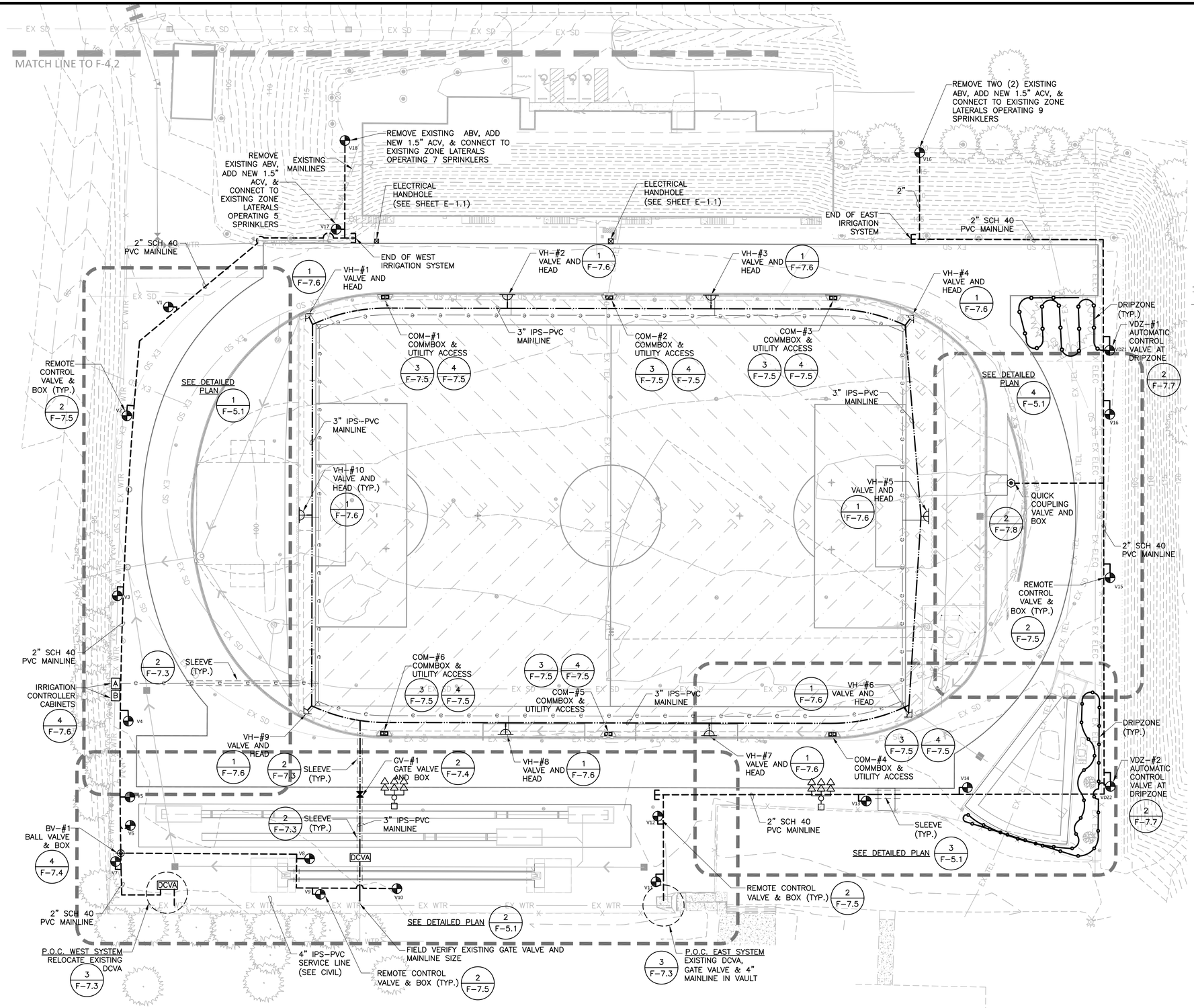
Plot Date: Jan 27, 2015 - 3:49pm

AUSLAND PROJECT NO: 14-0708



IRRIGATION LEGEND

- 2" GATE VALVE AND BOX
- 1" QUICK COUPLER VALVE AND BOX
- PVC BALL VALVE IN INDIVIDUAL BOX
- PVC-IPS IRRIGATION MAIN LINE, TYP. 3"
- SCH 40 LANDSCAPE IRRIGATION MAINLINE
- DRIPLINE
- HUNTER SK-2/ STG-900-83 (180°) 92 GPM/ 1.23"/HR @ 120 PSI
- HUNTER SK-2/ STG-900-83 (90°) 92 GPM/ 2.46"/HR @ 120 PSI
- REMOTE CONTROL VALVE IN INDIVIDUAL BOX RAINBIRD PEB-PRS-D @ SPRAY HEADS AND RAINBIRD PEB @ ROTOR HEADS
- [A] FIELD-12 STATION AUTOMATIC CONTROLLER RAINBIRD ESP-12SAT-2S-LS OR APPROVED EQUAL
- [B] LANDSCAPE-24 STATION AUTOMATIC CONTROLLER RAINBIRD ESP-24SAT-2S-LS OR APPROVED EQUAL
- IRRIGATION SLEEVE
- 24 VOLT ENERGIZER WIRE. #14 UF, SEPARATE WIRES PLUS COMMON TO CONNECT IRRIGATION REMOTE CONTROL VALVES TO CONTROLLER
- EXISTING IRRIGATION HEAD TO REMAIN
- [DCVA] DOUBLE CHECK VALVE ASSEMBLY OR APPROVED EQUAL

IRRIGATION NOTES

1. INSTALL A RESTRAINED IPS-PVC MAINLINE LOOP WITH VALVE-IN-HEAD TURF COOLING ROTOR HEADS
2. REFER TO DETAILED ZONE LAYOUT PLANS ON F-5.1
3. SEE SHEET F-4.2 IRRIGATION NOTES CONTINUED.

Scale: = 1"=30'

0 30' 60'

(11x17 Double Scale)

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SHEET
F-4.1
FIELD & TRACK IRRIGATION PLAN

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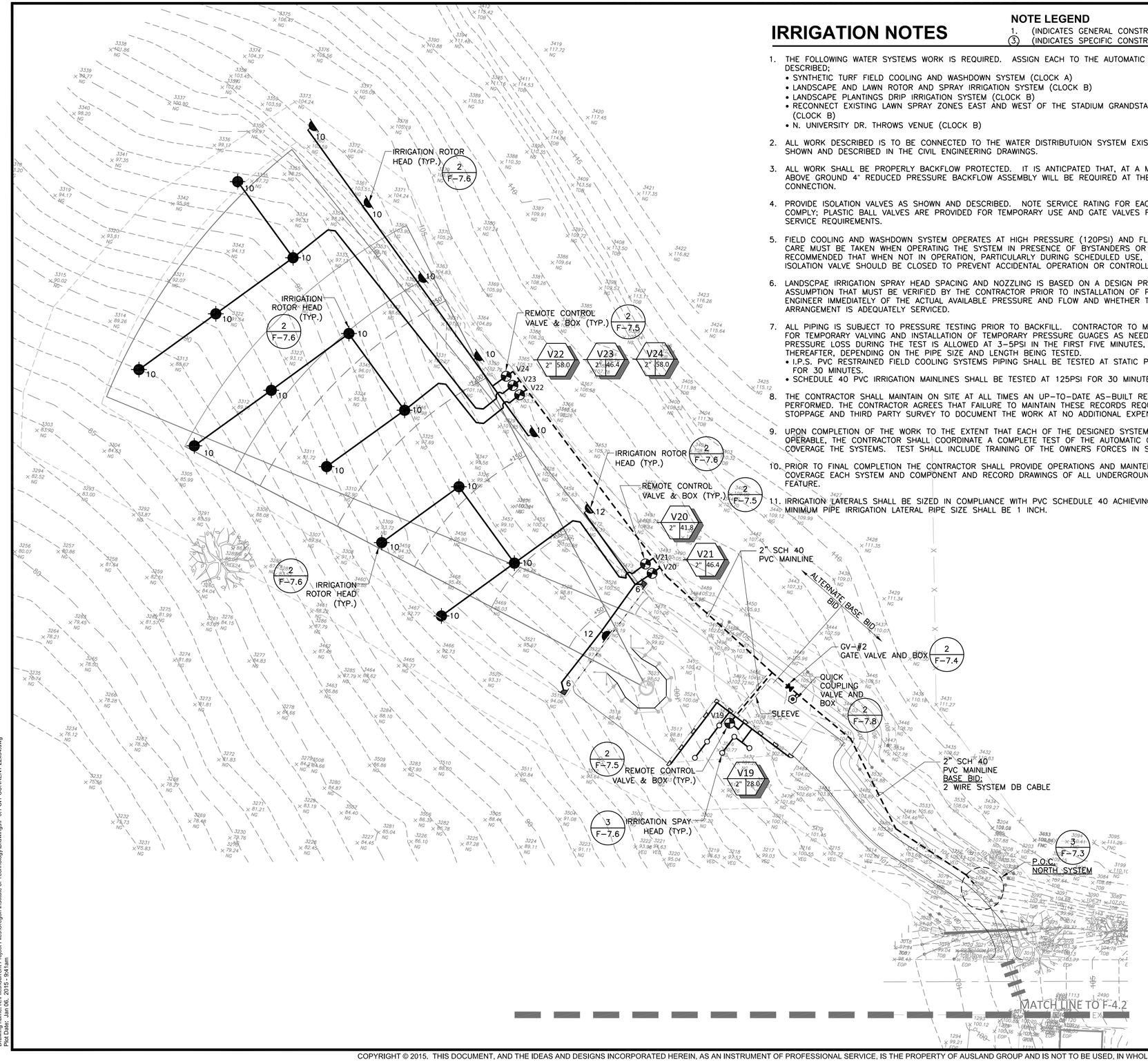

IRRIGATION NOTES

NOTE LEGEND

1. (INDICATES GENERAL CONSTRUCTION NOTE)
(3) (INDICATES SPECIFIC CONSTRUCTION KEYNOTE)

1. THE FOLLOWING WATER SYSTEMS WORK IS REQUIRED. ASSIGN EACH TO THE AUTOMATIC CONTROLLER DESCRIBED;
   - SYNTHETIC TURF FIELD COOLING AND WASHDOWN SYSTEM (CLOCK A)
   - LANDSCAPE AND LAWN ROTOR AND SPRAY IRRIGATION SYSTEM (CLOCK B)
   - LANDSCAPE PLANTINGS DRIP IRRIGATION SYSTEM (CLOCK B)
   - RECONNECT EXISTING LAWN SPRAY ZONES EAST AND WEST OF THE STADIUM GRANDSTAND STRUCTURE (CLOCK B)
   - N. UNIVERSITY DR. THROWS VENUE (CLOCK B)
2. ALL WORK DESCRIBED IS TO BE CONNECTED TO THE WATER DISTRIBUTUION SYSTEM EXISTING ON SITE AS SHOWN AND DESCRIBED IN THE CIVIL ENGINEERING DRAWINGS.
3. ALL WORK SHALL BE PROPERLY BACKFLOW PROTECTED. IT IS ANTICPATED THAT, AT A MINIMUM, A HEATED, ABOVE GROUND 4" REDUCED PRESSURE BACKFLOW ASSEMBLY WILL BE REQUIRED AT THE POINT OF CONNECTION.
4. PROVIDE ISOLATION VALVES AS SHOWN AND DESCRIBED. NOTE SERVICE RATING FOR EACH VALVE AND COMPLY; PLASTIC BALL VALVES ARE PROVIDED FOR TEMPORARY USE AND GATE VALVES FOR LONGER-TERM SERVICE REQUIREMENTS.
5. FIELD COOLING AND WASHDOWN SYSTEM OPERATES AT HIGH PRESSURE (120PSI) AND FLOW (100GPM) RATES. CARE MUST BE TAKEN WHEN OPERATING THE SYSTEM IN PRESENCE OF BYSTANDERS OR PEDESTRIANS. IT IS RECOMMENDED THAT WHEN NOT IN OPERATION, PARTICULARLY DURING SCHEDULED USE, THE SYSTEM ISOLATION VALVE SHOULD BE CLOSED TO PREVENT ACCIDENTAL OPERATION OR CONTROLLER MALFUNCTION.
6. LANDSCPAE IRRIGATION SPRAY HEAD SPACING AND NOZZLING IS BASED ON A DESIGN PRESSSURE AND FLOW ASSUMPTION THAT MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO INSTALLATION OF PIPING. NOTIFY THE ENGINEER IMMEDIATELY OF THE ACTUAL AVAILABLE PRESSURE AND FLOW AND WHETHER THE DESIGNED ZONING ARRANGEMENT IS ADEQUATELY SERVICED.
7. ALL PIPING IS SUBJECT TO PRESSURE TESTING PRIOR TO BACKFILL. CONTRACTOR TO MAKE ACCOMODATIONS FOR TEMPORARY VALVING AND INSTALLATION OF TEMPORARY PRESSURE GUAGES AS NEEDED. GENERALLY, PRESSURE LOSS DURING THE TEST IS ALLOWED AT 3-5PSI IN THE FIRST FIVE MINUTES, NO MORE THAN 2PSI THEREAFTER, DEPENDING ON THE PIPE SIZE AND LENGTH BEING TESTED.
   - I.P.S. PVC RESTRAINED FIELD COOLING SYSTEMS PIPING SHALL BE TESTED AT STATIC PRESSURE PLUS 25% FOR 30 MINUTES.
   - SCHEDULE 40 PVC IRRIGATION MAINLINES SHALL BE TESTED AT 125PSI FOR 30 MINUTES.
8. THE CONTRACTOR SHALL MAINTAIN ON SITE AT ALL TIMES AN UP-TO-DATE AS-BUILT RECORD OF THE WORK PERFORMED. THE CONTRACTOR AGREES THAT FAILURE TO MAINTAIN THESE RECORDS REQUIRES A WORK STOPPAGE AND THIRD PARTY SURVEY TO DOCUMENT THE WORK AT NO ADDITIONAL EXPENSE TO THE OWNER.
9. UPON COMPLETION OF THE WORK TO THE EXTENT THAT EACH OF THE DESIGNED SYSTEMS IS FULLY OPERABLE, THE CONTRACTOR SHALL COORDINATE A COMPLETE TEST OF THE AUTOMATIC OPERATION AND COVERAGE THE SYSTEMS. TEST SHALL INCLUDE TRAINING OF THE OWNERS FORCES IN SAID OPERATION.
10. PRIOR TO FINAL COMPLETION THE CONTRACTOR SHALL PROVIDE OPERATIONS AND MAINTENANCE MANUALS COVERAGE EACH SYSTEM AND COMPONENT AND RECORD DRAWINGS OF ALL UNDERGROUND AND SURFACE FEATURE.
11. IRRIGATION LATERALS SHALL BE SIZED IN COMPLIANCE WITH PVC SCHEDULE 40 ACHIEVING MINIMAL PSI LOSS. MINIMUM PIPE IRRIGATION LATERAL PIPE SIZE SHALL BE 1 INCH.

IRRIGATION LEGEND

- 2" GATE VALVE AND BOX
- 1" QUICK COUPLER VALVE AND BOX
- SCH 40 LANDSCAPE IRRIGATION MAINLINE
- SCH 40 LANDSCAPE IRRIGATION LATERALS
- 6 — RAINBIRD F4-PC-SS-NP-6, 80 PSI. 49' RADIUS, 6.9 GPM
- 10 — RAINBIRD F4-PC-SS-NP-10, 80 PSI. 55' RADIUS, 11.6 GPM
- 12 — RAINBIRD F4-PC-SS-NP-12, 80 PSI. 61' RADIUS, 14.0 GPM
- 10 — RAINBIRD F4-FC-SS-NP-10, 80 PSI. 55' RADIUS, 11.6 GPM
- FULL POP UP SPRINKLER 30 PSI, 12' RADIUS, 2.60 GPM, RAINBIRD 1800-SAM-PRS
- HALF POP UP SPRINKLER 30 PSI, 12' RADIUS, 1.30 GPM, RAINBIRD 1800-SAM-PRS
- QUARTER POP UP SPRINKLER 30 PSI, 12' RADIUS, 0.65 GPM, RAINBIRD 1800-SAM-PRS
- REMOTE CONTROL VALVE IN INDIVIDUAL BOX RAINBIRD PEB-PRS-D @ SPRAY HEADS AND RAINBIRD PEB @ ROTOR HEADS
- IRRIGATION SLEEVE

VALVE STATION 3 — 2" | 40 — VALVE GALLONS PER MINUTE (GPM)
VALVE SIZE

Scale: = 1"=30'
0 30' 60'
(11x17 Double Scale)

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SHEET
F-4.2
FIELD EVENTS IRRIGATION PLAN

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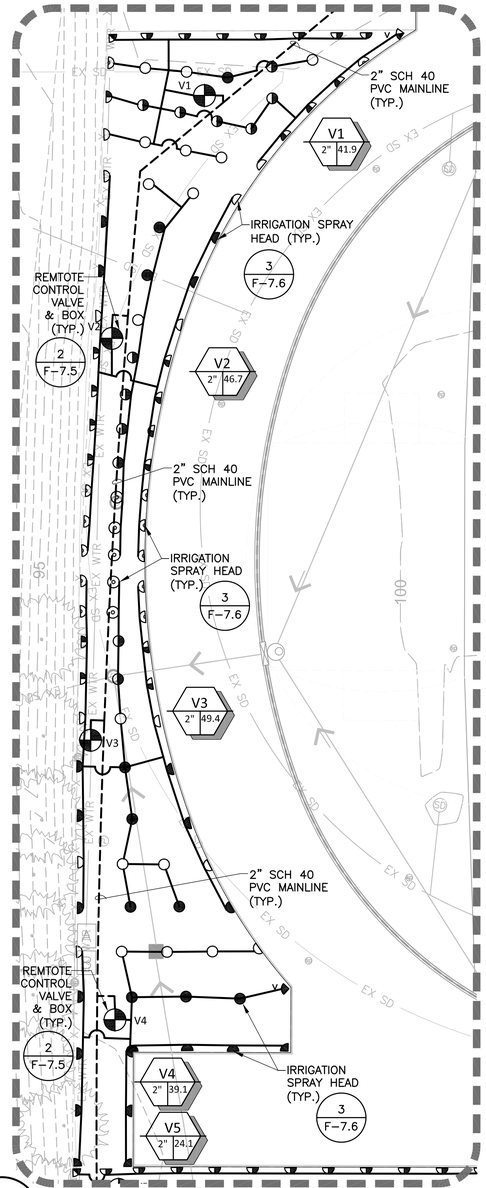
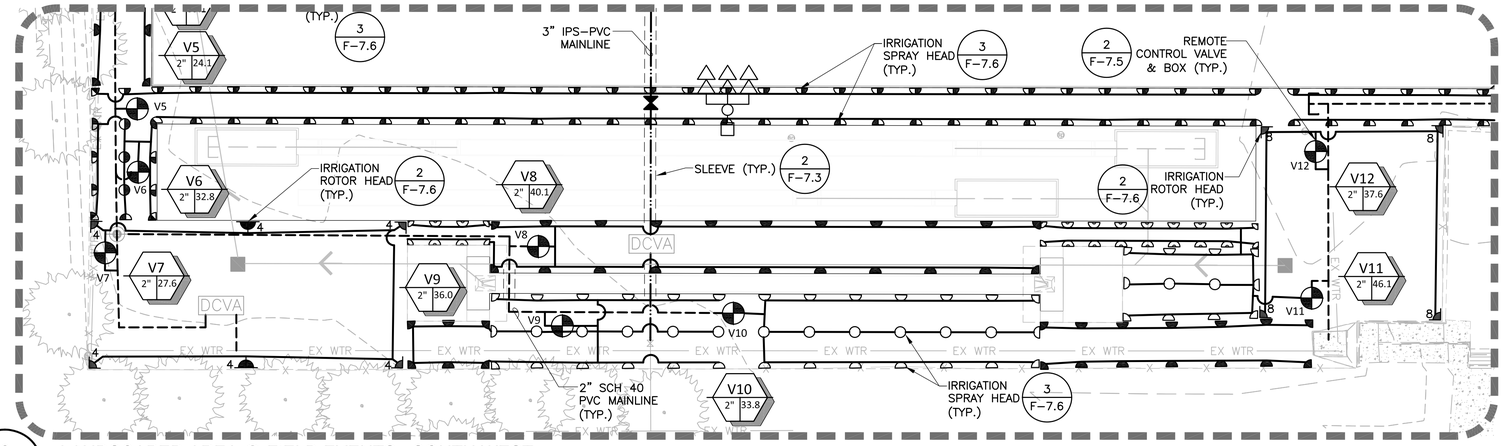


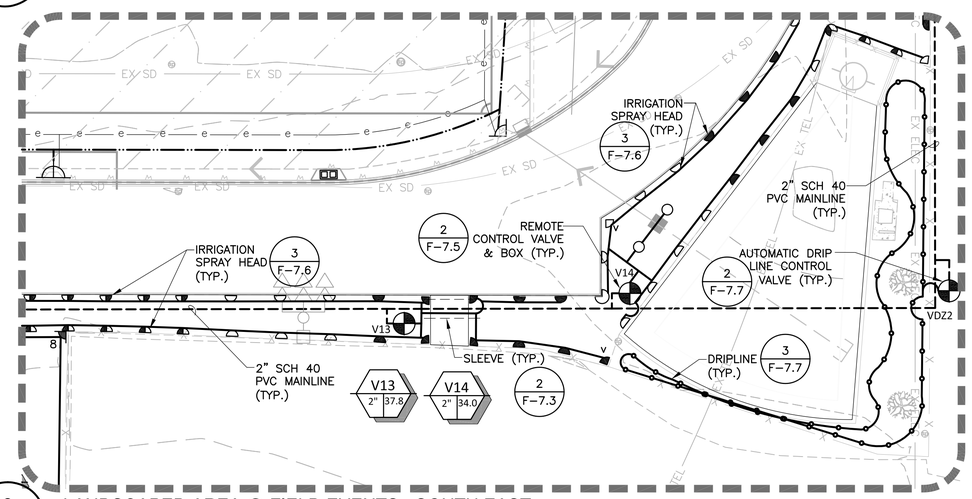
1 / F-5.1 LANDSCAPED AREA - WEST

AS NOTED



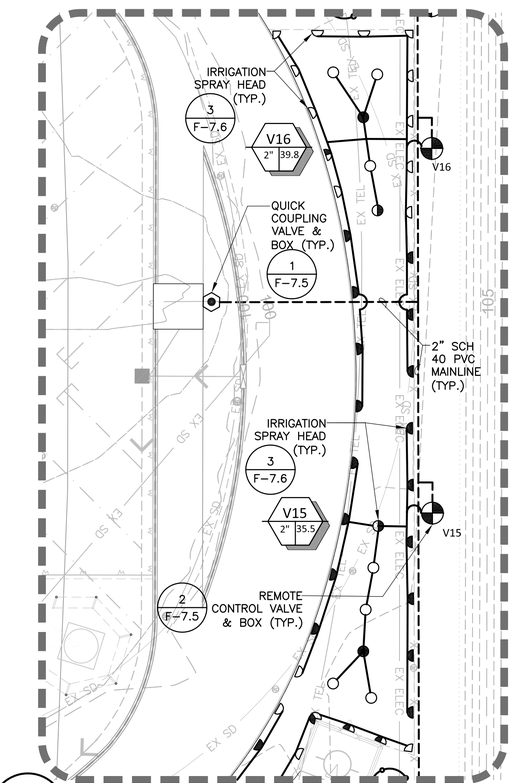
2 / F-5.1 LANDSCAPED AREA @ FIELD EVENTS - SOUTH WEST

AS NOTED



3 / F-5.1 LANDSCAPED AREA @ FIELD EVENTS - SOUTH EAST

AS NOTED



4 / F-5.1 LANDSCAPED AREA - EAST

AS NOTED

IRRIGATION LEGEND

SEE SHEET F-4.1 FOR GATE VALVE, BALL VALVE, QUICK COUPLING VALVE, DOUBLE CHECK VALVE AND IRRIGATION CONTROLLER AND LEGEND

- PVC-IPS IRRIGATION MAIN LINE, TYP. 3"
- SCH 40 LANDSCAPE IRRIGATION MAINLINE
- SCH 40 LANDSCAPE IRRIGATION LATERALS, 1" UNLESS OTHERWISE NOTED
- DRIPLINE

VALVE STATION / VALVE SIZE — V1 2" 40 — VALVE GALLONS PER MINUTE (GPM)

IRRIGATION LEGEND

- 4 RAINBIRD F4-PC-SS-NP-4, 80 PSI. 43' RADIUS, 4.6 GPM
- 4 RAINBIRD F4-PC-SS-NP-4, 80 PSI. 43' RADIUS, 4.6 GPM
- 8 RAINBIRD F4-PC-SS-NP-8, 80 PSI. 53' RADIUS, 9.4 GPM
- FULL POP UP SPRINKLER 30 PSI, 15' RADIUS, 3.70 GPM, RAINBIRD 1800-SAM-PRS
- HALF POP UP SPRINKLER 30 PSI, 15' RADIUS, 1.85 GPM, RAINBIRD 1800-SAM-PRS
- QUARTER POP UP SPRINKLER 30 PSI, 15' RADIUS, 0.92 GPM, RAINBIRD 1800-SAM-PRS
- THREE-QUARTER POP UP SPRINKLER 30 PSI, 15' RADIUS, 2.78 GPM, RAINBIRD 1800-SAM-PRS
- FULL POP UP SPRINKLER 30 PSI, 12' RADIUS, 2.60 GPM, RAINBIRD 1800-SAM-PRS
- THREE-QUARTER POP UP SPRINKLER 30 PSI, 15' RADIUS, 1.95 GPM, RAINBIRD 1800-SAM-PRS
- HALF POP UP SPRINKLER 30 PSI, 12' RADIUS, 1.30 GPM, RAINBIRD 1800-SAM-PRS
- QUARTER POP UP SPRINKLER 30 PSI, 12' RADIUS, 0.65 GPM, RAINBIRD 1800-SAM-PRS
- FULL POP UP SPRINKLER 30 PSI, 10' RADIUS, 1.58 GPM, RAINBIRD 1800-SAM-PRS
- THREE-QUARTER POP UP SPRINKLER 30 PSI, 10' RADIUS, 1.18 GPM, RAINBIRD 1800-SAM-PRS
- HALF POP UP SPRINKLER 30 PSI, 10' RADIUS, 0.79 GPM, RAINBIRD 1800-SAM-PRS
- QUARTER POP UP SPRINKLER 30 PSI, 10' RADIUS, 0.39 GPM, RAINBIRD 1800-SAM-PRS
- FULL POP UP SPRINKLER 30 PSI, 8' RADIUS, 1.05 GPM, RAINBIRD 1800-SAM-PRS
- HALF POP UP SPRINKLER 30 PSI, 8' RADIUS, 0.52 GPM, RAINBIRD 1800-SAM-PRS
- QUARTER POP UP SPRINKLER 30 PSI, 8' RADIUS, 0.26 GPM, RAINBIRD 1800-SAM-PRS
- V4 REMOTE CONTROL VALVE IN INDIVIDUAL BOX RAINBIRD PEB-PRS-D @ SPRAY HEADS AND RAINBIRD PEB @ ROTOR HEADS

IRRIGATION PIPE SIZE LEGEND

Ⓐ =1-1/4" Ⓒ =2"
Ⓑ =1-1/2" Ⓓ =2-1/2"

Scale: = 1"=20'
0 20' 40'
(11x17 Double Scale)

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119 1st Avenue South, Suite 310 Seattle, Washington 98104
p. 206.285.0400 f. 206.285.0400

Director Decision Date: N.A.
First Submittal Date: 07-07-2015
Second Submittal Date:
City Approval Date:

Drawn By: CPW, JS
Designed By: EJG
Checked By: EJG, RSH
Approved:
Rev 1 Rev 2 Rev 3 As-Built

OREGON TECH TRACK AND SOCCER PROJECT

CONSTRUCTION DOCUMENTS

MAP NO. 38-09-00, TAX LOT 4900
3201 CAMPUS DRIVE, KLAMATH FALLS, OREGON
CITY PROJECT NO. OIT-270-P-13-17

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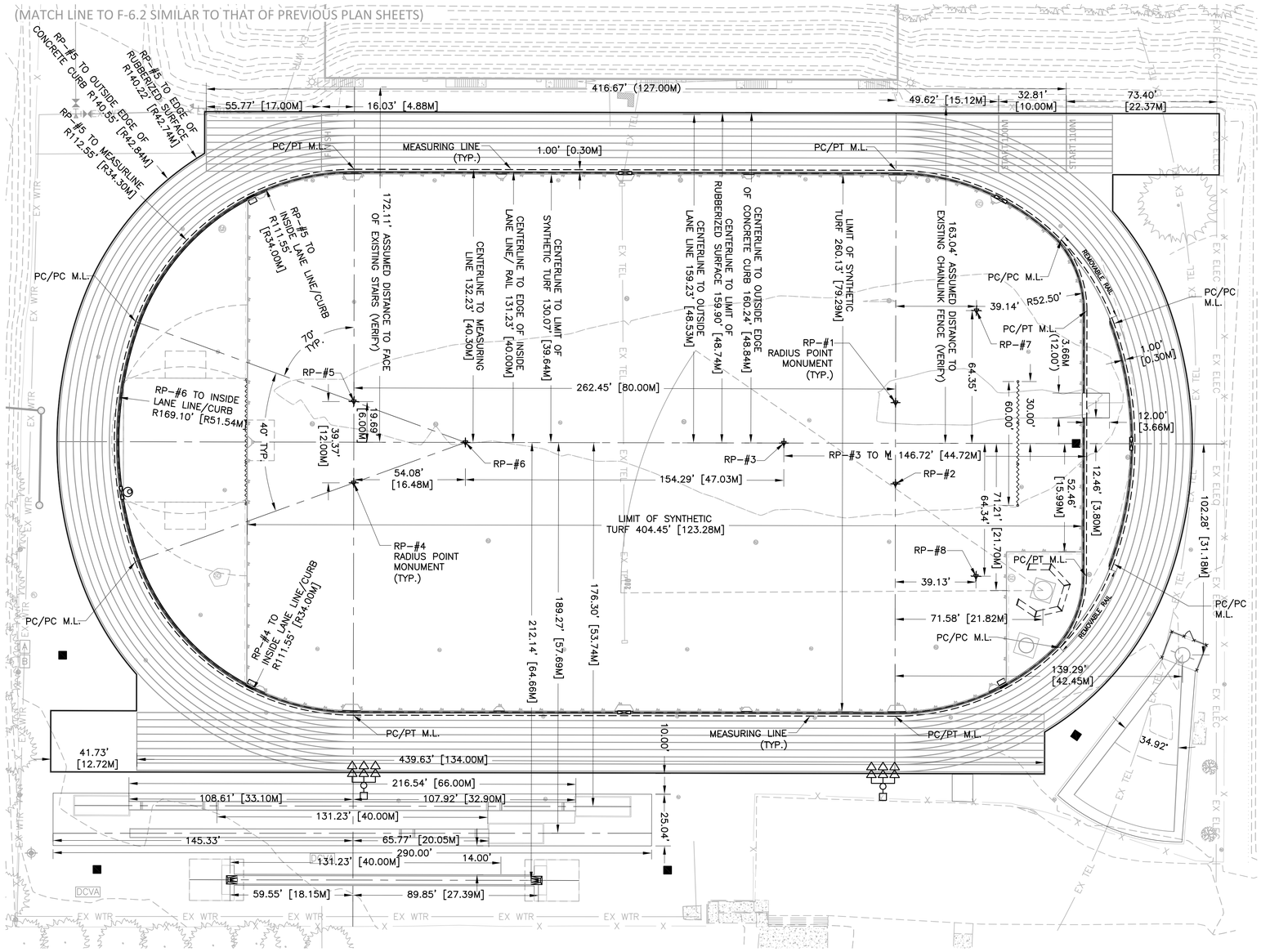
548
ROBERT HARDING
OREGON
05/31/15

SHEET
F-5.1
IRRIGATION DETAIL PLANS

AUSLAND PROJECT NO: 14-0708

Drawing name: K:\Files\Current Project Files\Oregon Institute of Technology\Drawings\F-5.1 OIT CURRENT 22x34.dwg
Plot Date: Jan 06, 2015 - 10:20am



TRACK CALCULATIONS

Oregon Tech University			
400M Double-Bend Track Layout Calculations			
Layout Summary	**Metric**	**Conversion**	**Feet**
Distance RP#3 to RP#6	79.99600	3.2808399	262.45407
Running Length on Straights	159.99200	3.2808399	524.90814
Small Radius Turns RP's 1, 2, 4, 5			
RP to Measuring Line	34.30000	3.2808399	112.53281
Angle per Segment	70.00000	Degrees	
Total Angle for 4 Segements	280.00000	Degrees	
Running Length	167.62181	3.2808399	549.94033
Large Radius Turns (2)			
RP to Measuring Line	51.84300	3.2808399	170.08858
Angle per Segment	40.00000	Degrees	
Total Angle for 2 Segements	80.00000	Degrees	
Running Length	72.38665	3.2808399	237.48902
Total Running Length @ M.L.	**400.00047**	3.2808399	1312.33749
Track Rail to Measuring Line	0.30000	3.2808399	0.98425
Track Rail to Slot Drain	0.18000	3.2808399	0.59055
Small Radius Turns			
Distance RP to Slot Drain	33.82000	3.2808399	110.95801
Distance RP to Track Rail	34.00000	3.2808399	111.54856
Track Rail to Measuring Line	0.30000	3.2808399	0.98425
Lane Width	1.06700	3.2808399	3.50066
Distance RP to Lane 2 Line	35.06700	3.2808399	115.04921
Lane Width	1.06700	3.2808399	3.50066
Distance RP to Lane 3 Line	36.13400	3.2808399	118.54987
Lane Width	1.06700	3.2808399	3.50066
Distance RP to Lane 4 Line	37.20100	3.2808399	122.05053
Lane Width	1.06700	3.2808399	3.50066
Distance RP to Lane 5 Line	38.26800	3.2808399	125.55118
Lane Width	1.06700	3.2808399	3.50066
Distance RP to Lane 6 Line	39.33500	3.2808399	129.05184
Lane Width	1.06700	3.2808399	3.50066
Distance RP to Lane 7 Line	40.40200	3.2808399	132.55249
Lane Width	1.06700	3.2808399	3.50066
Distance RP to Lane 8 Line	41.46900	3.2808399	136.05315
Lane Width	1.06700	3.2808399	3.50066
Distance RP to Outside Lane Line	42.53600	3.2808399	139.55381
Additional Surfacing	0.20300	3.2808399	0.66601
Distance RP to Edge of Surfacing	42.73900	3.2808399	140.21982
Large Radius Turns			
Distance RP to Slot Drain	51.36300	3.2808399	168.51378
Distance RP to Track Rail	51.54300	3.2808399	169.10433
Track Rail to Measuring Line	0.30000	3.2808399	0.98425
Lane Width	1.06700	3.2808399	3.50066
Distance RP to Lane 2 Line	52.61000	3.2808399	172.60499
Lane Width	1.06700	3.2808399	3.50066
Distance RP to Lane 3 Line	53.67700	3.2808399	176.10564
Lane Width	1.06700	3.2808399	3.50066
Distance RP to Lane 4 Line	54.74400	3.2808399	179.60630
Lane Width	1.06700	3.2808399	3.50066
Distance RP to Lane 5 Line	55.81100	3.2808399	183.10696
Lane Width	1.06700	3.2808399	3.50066
Distance RP to Lane 6 Line	56.87800	3.2808399	186.60761
Lane Width	1.06700	3.2808399	3.50066
Distance RP to Lane 7 Line	57.94500	3.2808399	190.10827
Lane Width	1.06700	3.2808399	3.50066
Distance RP to Lane 8 Line	59.01200	3.2808399	193.60892
Lane Width	1.06700	3.2808399	3.50066
Distance RP to Outside Lane Line	60.07900	3.2808399	197.10958
Additional Surfacing	0.20300	3.2808399	0.66601
Distance RP to Edge of Surfacing	60.28200	3.2808399	197.77559

LAYOUT CONTROL NOTES

1. THE WORK SHALL BE PERFORMED IN A MANNER RESULTING IN A FULLY COMPLIANT NCAA TRACK AND FIELD AND SOCCER FACILITY AS REGARDS ALL NEW WORK. THE CONTRACTOR ACKNOWLEDGES AN UNDERSTANDING OF THE PUBLISHED RULES AND REGULATIONS ASSOCIATED WITH THESE PROGRAMS.
2. THE CONTRACTOR WILL UTILIZE ONLY THE APPROVED ELECTRONIC, DIGITAL LAYOUT PLANS AND A PROFESSIONAL LAND SURVEYOR LICENSED IN THE STATE OF OREGON FOR THE LAYOUT OF THE PRIMARY GEOMETRY OF THE WORK INCLUDING BUT NOT LIMITED TO;
   - DOUBLE–BEND TRACK RADIUS POINTS
   - SLOT DRAIN CENTERLINE AND CONCRETE ENCASEMENT
   - TRACK 400M MEASURING LINE
   - TRACK OUTSIDE CURB, INSIDE FACE AND RUBBERIZED SURFACING TERMINATION
   - TRACK STRIPING EVENT MARKINGS LAYOUT
   - WET–SEALED AND SIGNED TRACK CERTIFICATION
3. CERTAIN COMPONENTS OF THE WORK MAY REQUIRE ADJUSTMENTS TO THE DIGITAL LAYOUT DEPENDING ON THE APPROVED MANUFACTURER – FABRICATOR OF A PRE–ENGINEERED EMBEDDED COMPONENT SUCH AS THE STEEPLECHASE WATER JUMP FORM.
4. IAAF AND NCAA DIVISION 1 TRACK & FIELD FACILITIES ARE COMMONLY DESIGNED TO COMPLY WITH VERY SPECIFIC DIMENSIONING REQUIREMENTS THAT ARE DEFINED BY THE VARIOUS REFERENCE STANDARDS IN METRIC UNITS.
   - METRIC DIMENSIONS OVERRIDE ENGLISH UNITS.
   - CONVERSION FACTOR FROM METERS TO FEET IS 3.2808399
   - THE CONTRACTOR IS CAUTIONED TO AVOID ROUNDING ERRORS AND ACCUMULATED ERROR WHEN LAYING OUT THE WORK.
5. THE CONTRACTOR WILL BE PROVIDED WITH DIGITAL DATA IN AUTOCADD FORMAT (X,Y – HORIZONTAL DATA ONLY) FOR THE IMPROVEMENTS IDENTIFIED ON ALL PLAN SHEETS FOLLOWING APPROVAL OF THE LICENSED SURVEYOR PERFORMING THE CONSTRUCTION LAYOUT.
6. THE LOCATION AND PLACEMENT OF ALL IMPROVEMENTS SHOULD BE CONSIDERED RELATIVE TO THE REFERENCE POINTS PROVIDED OR OTHER EXISTING AND PROPOSED FEATURES DESCRIBED.
7. DIMENSIONS AND COORDINATES PROVIDED TYPICALLY IDENTIFY THE FOLLOWING COMMON FEATURES.
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   - FACE OF WALL
   - CENTERLINE OF FENCE OR CENTER–POINT OF POST
   - CENTER–POINT OF CATCH BASIN
   - CORNER OF BUILDING, ENCLOSURE, OR OTHER STRUCTURE.
   - RADIUS POINT
   - POINT OF CURVATURE / POINT OF TANGENCY

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Drawn By: CPW, JS
Designed By: EJG
Checked By: EJG, RSH
Approved:
Director Decision Date: N.A.
First Submittal Date: 01-07-2015
Second Submittal Date: 01-27-2015
City Approval Date:
Rev 1 By:
Rev 2 By:
Rev 3 By:
As-Built

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OREGON
05/31/15

SHEET
F-6.1
FIELD & TRACK LAYOUT CONTROL PLAN

AUSLAND PROJECT NO: 14-0708

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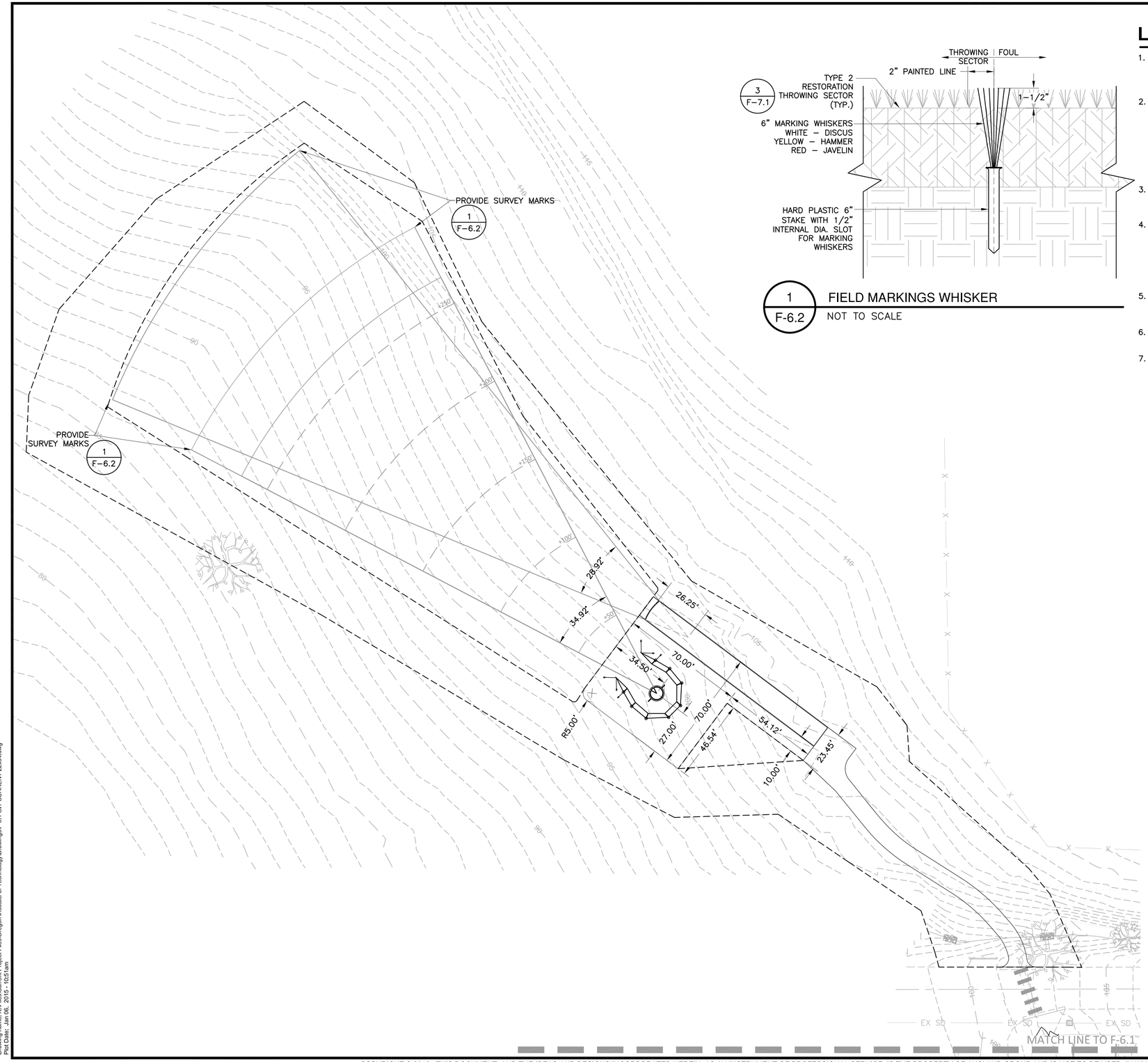

1
F-6.2
FIELD MARKINGS WHISKER
NOT TO SCALE

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Drawn By: CPW, JS
Designed By: EJG
Checked By: EJG, RSH
Approved:
Director Decision Date: N.A.
First Submittal Date: 01-07-2015
Second Submittal Date:
City Approval Date:
Rev 1 By:
Rev 2 By:
Rev 3 By:
As-Built

OREGON TECH TRACK AND SOCCER PROJECT

CONSTRUCTION DOCUMENTS

MAP NO. 38-09-00, TAX LOT 4900
3201 CAMPUS DRIVE, KLAMATH FALLS, OREGON
CITY PROJECT NO. OIT-270-P-13-17

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OREGON
05/31/15
LANDSCAPE ARCHITECT

SHEET
F-6.2
FIELD EVENTS LAYOUT CONTROL PLAN

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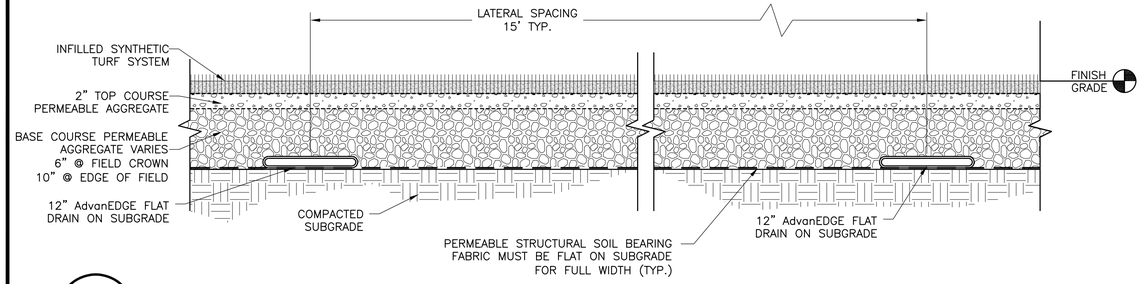

1 / F-7.1 SYNTHETIC TURF FIELD & DRAINAGE SECTION

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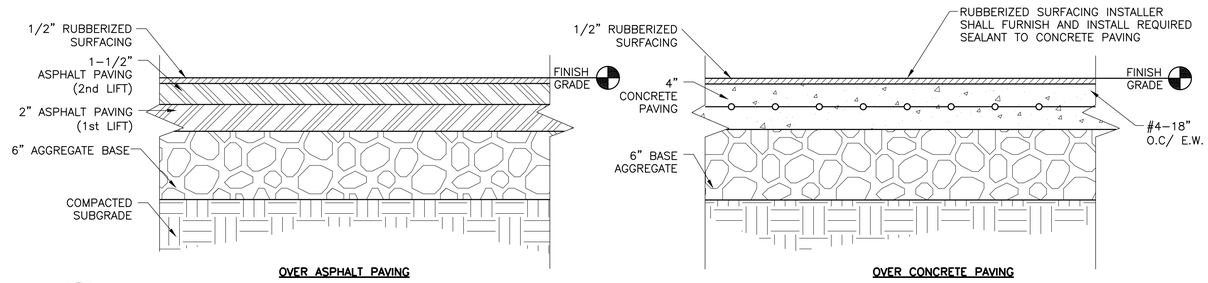

2 / F-7.1 RUBBERIZED TRACK SECTIONS

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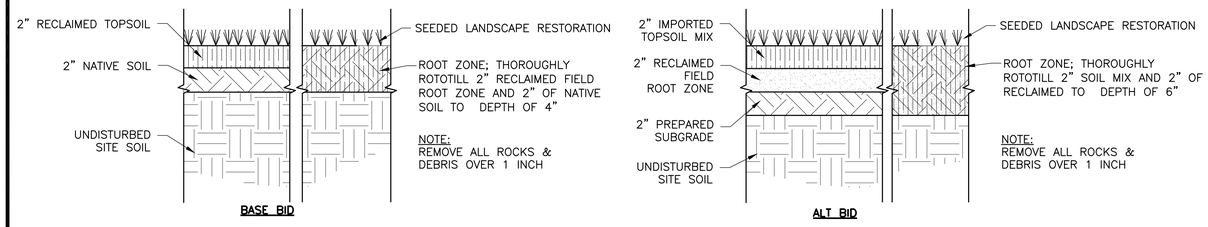

3 / F-7.1 SITE RESTORATION SOIL BASED

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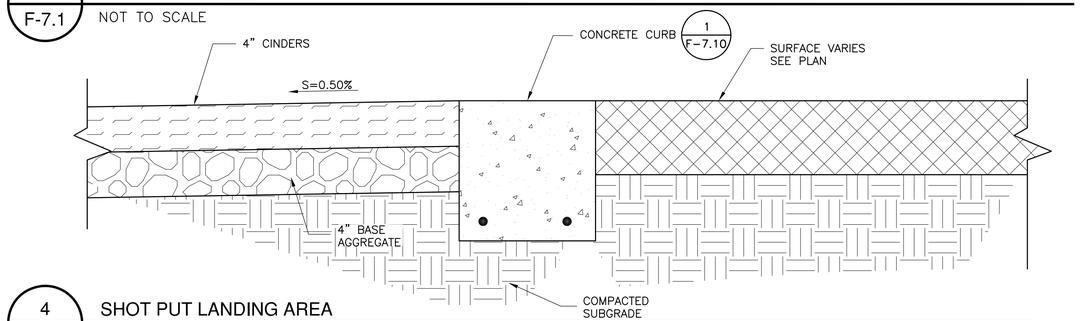

4 / F-7.1 SHOT PUT LANDING AREA

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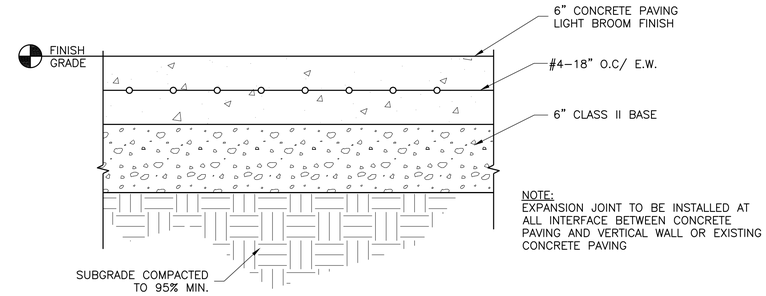

5 / F-7.1 CONCRETE PAVING

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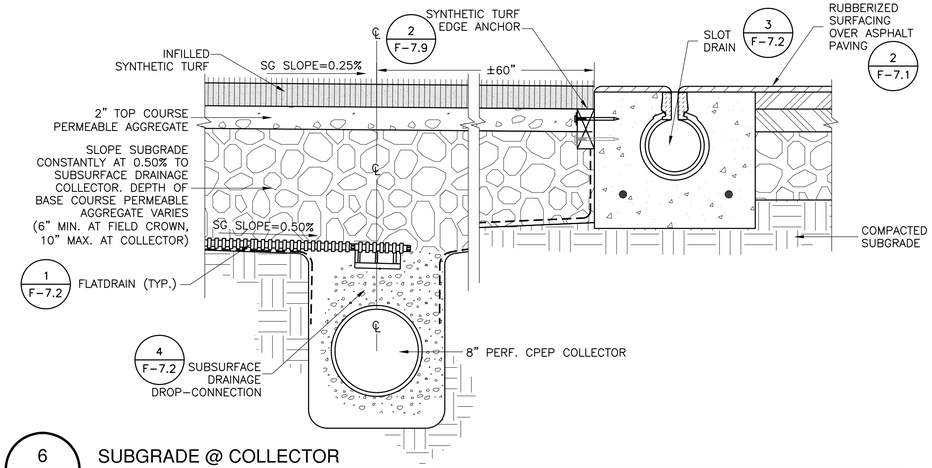

6 / F-7.1 SUBGRADE @ COLLECTOR

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SHEET
F-7.1
TYPICAL SECTIONS

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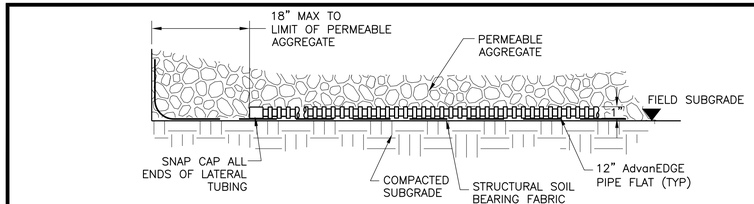
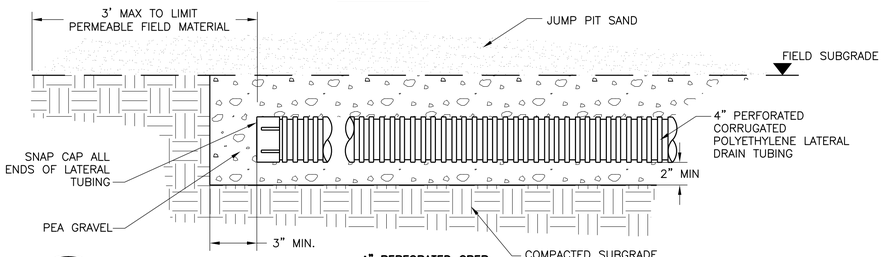


12" FLAT DRAIN



4" PERFORATED CPEP

1 / F-7.2 SUBSURFACE DRAINAGE LATERAL

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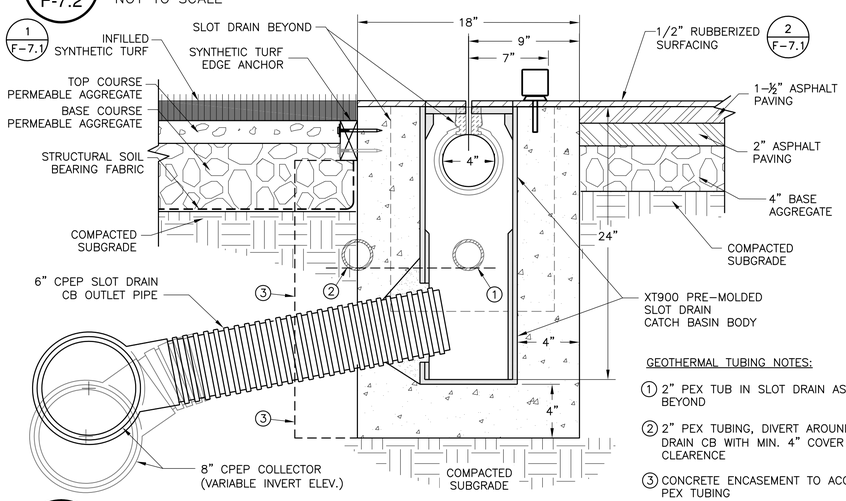
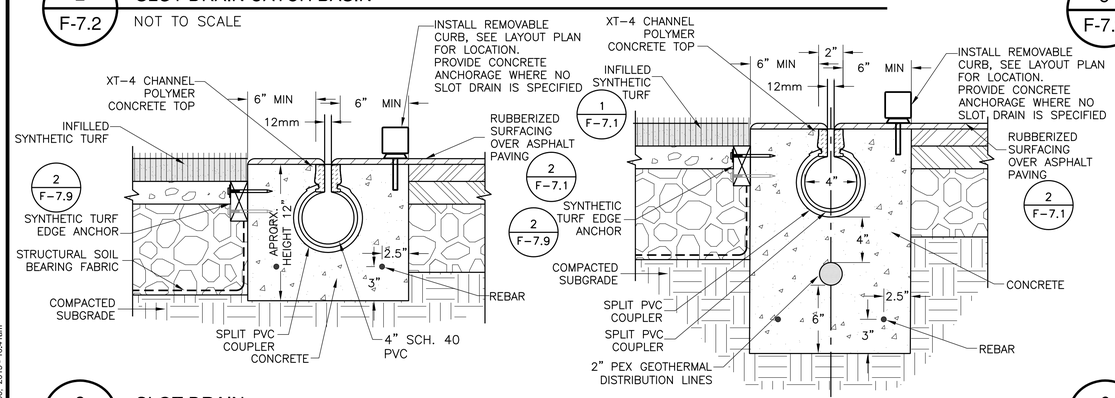


GEOTHERMAL TUBING NOTES:

1. 2" PEX TUB IN SLOT DRAIN ASSEMBLY BEYOND
2. 2" PEX TUBING, DIVERT AROUND SLOT DRAIN CB WITH MIN. 4" COVER AND CLEARENCE
3. CONCRETE ENCASEMENT TO ACCOMODATE PEX TUBING

2 / F-7.2 SLOT DRAIN CATCH BASIN

NOT TO SCALE

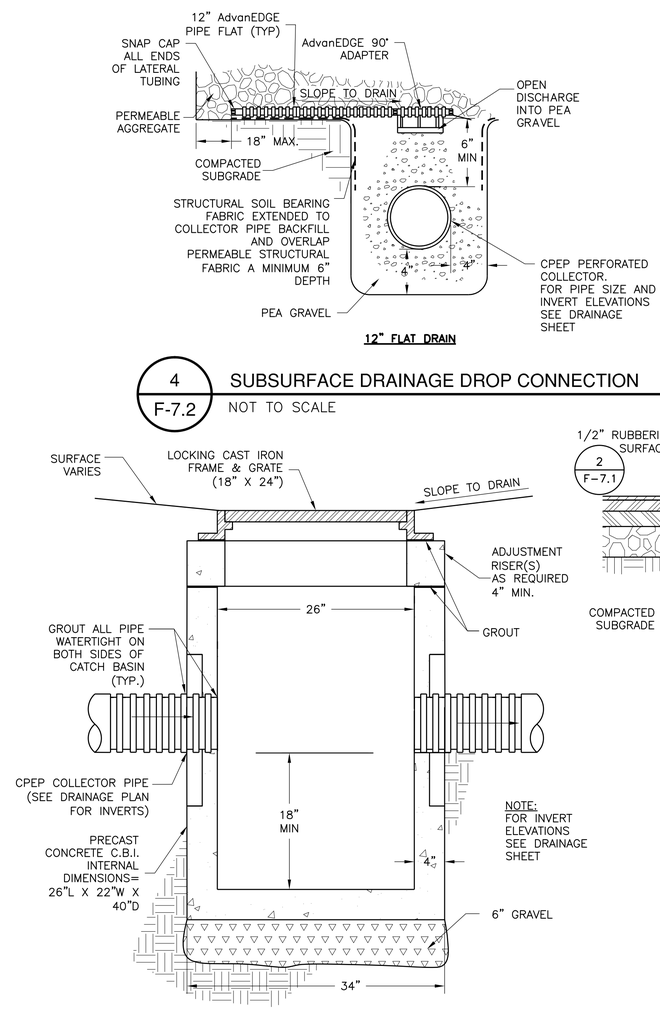


ALTERNATE BID

3 / F-7.2 SLOT DRAIN

BASE BID

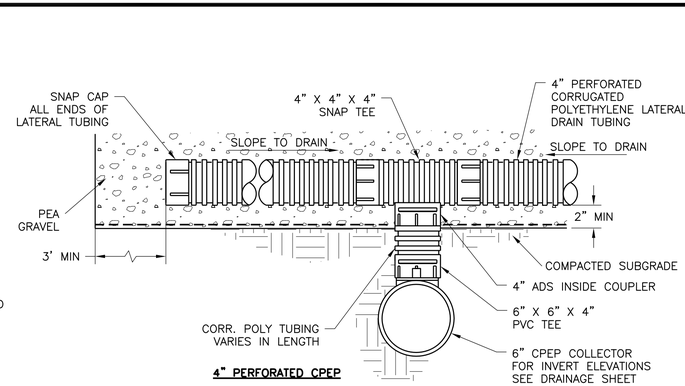
NOT TO SCALE



5 / F-7.2 TYPE 1 CATCH BASIN

NOT TO SCALE

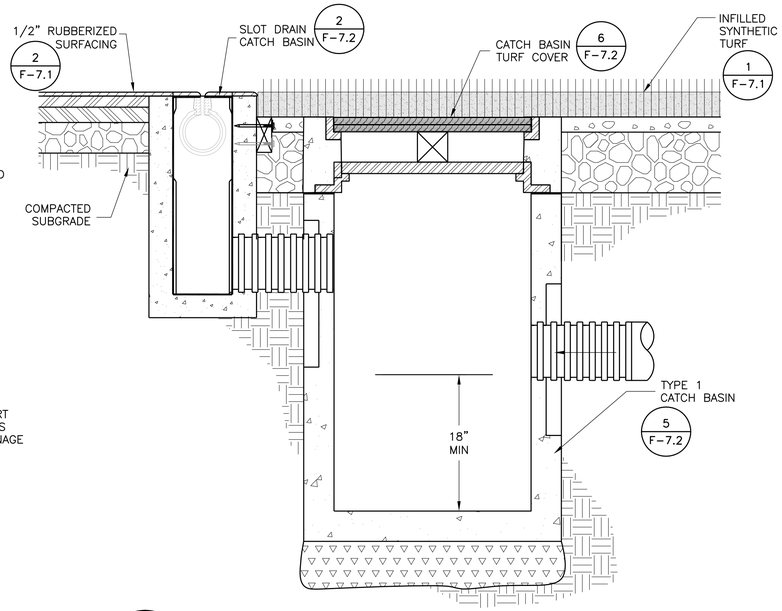
12" FLAT DRAIN



4" PERFORATED CPEP

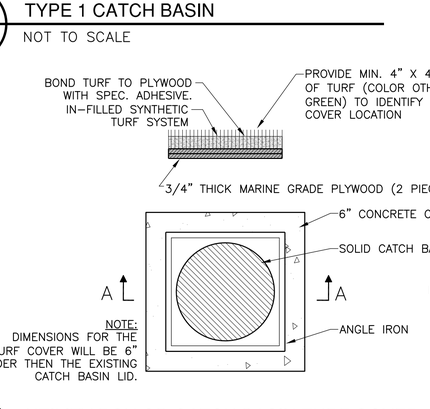
4 / F-7.2 SUBSURFACE DRAINAGE DROP CONNECTION

NOT TO SCALE



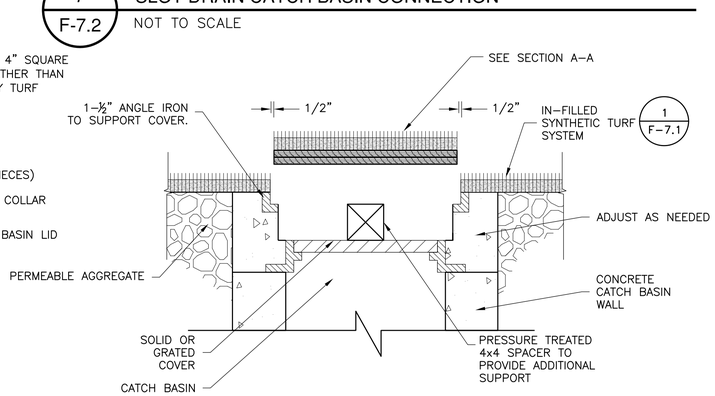
7 / F-7.2 SLOT DRAIN CATCH BASIN CONNECTION

NOT TO SCALE



6 / F-7.2 UTILITY BOX OR CATCH BASIN TURF COVER

NOT TO SCALE



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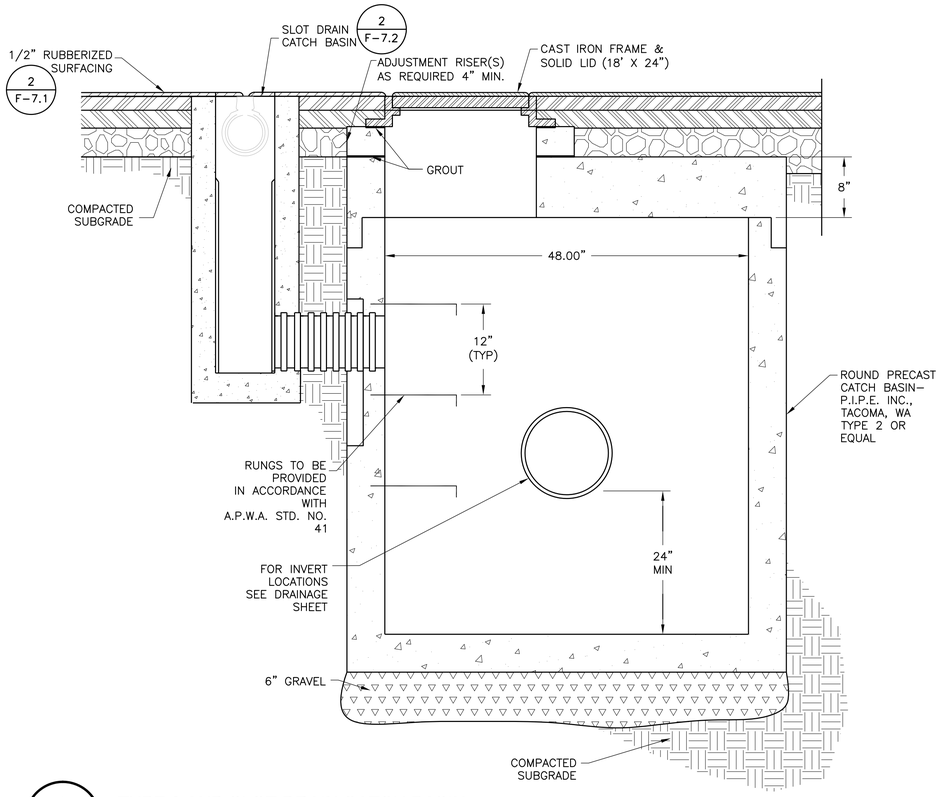
OREGON
05/31/15

SHEET
F-7.2
DRAINAGE DETAILS

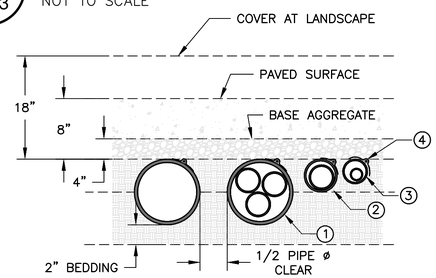
Drawing name: K:\Files\Current Project Files\Oregon Institute of Technology\Drawings\F-7.2 Drainage Details.dwg
Plot Date: Jan 06, 2015 - 10:41am

AUSLAND PROJECT NO: 14-0708



1 / F-7.3 TYPE 2 AND SLOT DRAIN CATCH BASIN

NOT TO SCALE



SLEEVING

NOTES:

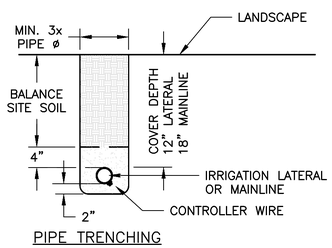
1. 12" SLEEVE CONTAINS UP TO (3) 4"ø PIPE
2. 6" SLEEVE CONTAINS (1) 4"ø PIPE
3. 4" SLEEVE CONTAINS (1) 2"ø PIPE
4. ALL SLEEVES TO INCORPORATE A 14G TRACER WIRE TAPED TO THE UPPER 1/3

TRENCHING NOTES:

A. ALL PIPE SHALL BE INSTALLED IN PREPARED TRENCHES FREE OF ROCKS, STICKS, ROOTS, AND DEBRIS.

B. ALL PIPE TO BE BEDDED IN A MINIMUM 2" CLEAN SAND, BACKFILLED WITH A MINIMUM 4" CLEAN SAND COVER.

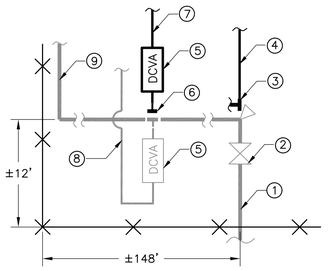
C. COMMONLY TRENCHED PIPE SHALL HAVE A MINIMUM 2" SEPARATION, NO CROSSING PIPE PERMITTED WITHOUT APPROVED SEPERATION (2" POLYSTYRENE OR EQUAL).



PIPE TRENCHING

2 / F-7.3 TRENCHING FOR MAINLINE & LATERAL PIPE

NOT TO SCALE

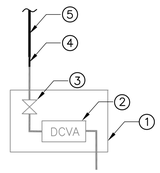


SCHEMATIC

NOTES:

1. EXISTING 4" DUCTILE IRON DOMESTIC WATER SERVICE
2. EXISTING 4" ISOLATION GATE VALVE
3. NEW DUCTILE IRON 4" TEE
4. REDUCE TO NEW 3" I.P.S. PVC FIELD COOLING SYSTEM MAINLINE
5. EXISTING DOUBLE CHECK VALVE ASSEMBLY – REMOVE, RE–CERTIFY, AND REINSTALL
6. NEW DUCTILE IRON TEE 4"x4"X2"
7. NEW 2" SCH. 40 PVC IRRIGATION MAINLINE (WEST SYSTEM)
8. REMOVE EXISTING ABANDONED IRRIGATION PIPE AS ENCOUNTERED
9. 4" DUCTILE IRON DOMESTIC CONTINUES, SEE CIVIL

IRRIGATION POINT OF CONNECTION (WEST LANDSCAPE & FIELD COOLING)

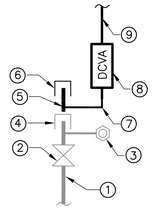


SCHEMATIC

NOTES:

1. EXISTING ABOVE GRADE PRECAST CONCRETE VAULT AND ALUMININUM LOCKING LID
2. EXISTING 2" DOUBLE CHECK VALVE (RE–CERTIFY)
3. EXISTING 2" GATE VALVE
4. CUT EXISTING PVC
5. CONNECT NEW 2" SCH. 40 PVC MAINLINE (EAST SYSTEM)

IRRIGATION POINT OF CONNECTION (EAST)



SCHEMATIC

NOTES:

1. 4" DOMESTIC WATER LINE, BASE BID, SEE CIVIL
2. 4" GATE VALVE, BASE BID, SEE CIVIL
3. 1.5" QUICK COUPLER VALVE / HYDRANT, BASE BID, SEE CIVIL
4. 4" BLIND FLANGE, BASE BID, SEE CIVIL

ALTERNATE BID ITEM:

5. 4"x4"X2" TEE
6. 4" BLIND FLANGE / CAP
7. 2" COPPER EXTENSION & 90
8. NEW 2" DOUBLE CHECK VALVE
9. SCH. 40 PVC MAINLINE, THROWS TURF IRRIGATION

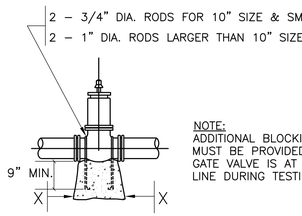
IRRIGATION POINT OF CONNECTION (NORTH/ THROWS)

3 / F-7.3 POINT OF CONNECTION-SCHEMATIC

NOT TO SCALE

THRUST BLOCK – TABLE

PIPE SIZE	PRESSURE PSI	MINIMUM BEARING AREA AGAINST UNDISTURBED SOIL SQUARE FEET A	B	C	D	E	X (100 PSI)
4"	200	2/(1)	1/(NONE)	1/(NONE)	NONE	NONE	NONE
	300	3/(2)	2/(2)	2/(1)	1/(1)	NONE	



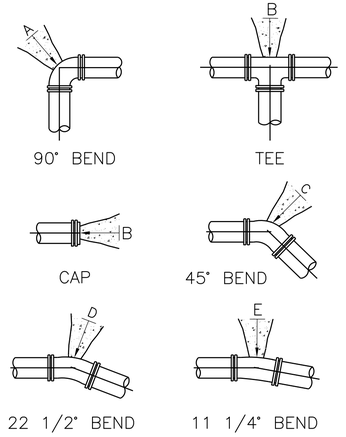
GATE VALVE

NOTE:
ADDITIONAL BLOCKING MUST BE PROVIDED IF GATE VALVE IS AT END OF LINE DURING TESTING.

SAFE BEARING LOADS IN LB./SQ. FT.
THE SAFE BEARING LOADS GIVEN IN THE FOLLOWING TABLE ARE FOR HORIZONTAL THRUSTS WHEN THE DEPTH OF COVER OVER THE PIPE EXCEEDS 2 FEET.

SOIL	SAFE BEARING LOAD LB PER SQ. FT.
* MUCK, PEAT, ETC.	0
SOFT CLAY	1,000
SAND	2,000
SAND & GRAVEL	3,000
SAND & GRAVEL CEMENTED WITH CLAY	4,000
HARD SHALE	10,000

* IN MUCK OR PEAT, ALL THRUSTS SHALL BE RESTRAINED BY PILES OR TIE RODS TO SOLID FOUNDATIONS OR BY REMOVAL OF MUCK OR PEAT AND REPLACEMENT WITH BALLAST OF SUFFICIENT STABILITY TO RESIST THRUST.



NOTES:

1. SQUARE FEET OF CONCRETE THRUSTS – BLOCK AREA BASED ON SAFE BEARING LOAD OF 2000/(3000) POUNDS PER SQUARE FOOT.
2. AREAS MUST BE ADJUSTED FOR OTHER SIZE PIPE, PRESSURES & SOIL CONDITIONS.
3. CONCRETE BLOCKING SHALL BE CAST IN PLACE & HAVE MINIMUM OF 1/4 SQUARE FOOT BEARING AGAINST THE FITTING.
4. BLOCK SHALL BEAR AGAINST FITTINGS ONLY & SHALL BE CLEAR OF JOINTS TO PERMIT TAKING UP OR DISMANTLING JOINT.
5. CONTRACTOR SHALL INSTALL BLOCKING ADEQUATE TO WITHSTAND FULL TEST PRESSURE AS WELL AS TO CONTINUOUSLY WITHSTAND OPERATING PRESSURE UNDER ALL CONDITIONS OF SERVICE.

4 / F-7.3 CONCRETE BLOCKING

NOT TO SCALE

AUSLAND GROUP
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Grants Pass 541.476.3788
Medford 541.773.3387

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Director Decision Date: N.A.
First Submittal Date: 01-07-2015
Second Submittal Date:
City Approval Date:
By: By: By:

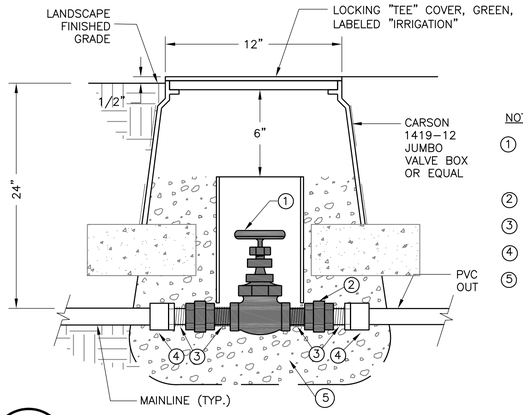
Drawn By: CPW, JS
Designed By: EJG
Checked By: EJG, RSH
Approved:
Rev 1 Rev 2 Rev 3 As-Built

OREGON TECH TRACK AND SOCCER PROJECT
CONSTRUCTION DOCUMENTS
MAP NO. 38-09-00, TAX LOT 4900
3201 CAMPUS DRIVE, KLAMATH FALLS, OREGON
CITY PROJECT NO. OIT-270-P-13-17

VERIFY SCALES
ORIGINAL DRAWING BARS ONE INCH ON
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

REGISTERED LANDSCAPE ARCHITECT
548
ROBERT HARDING
OREGON
05/31/15

SHEET
F-7.3
IRRIGATION & WASHWATER DETAILS



NOTES:

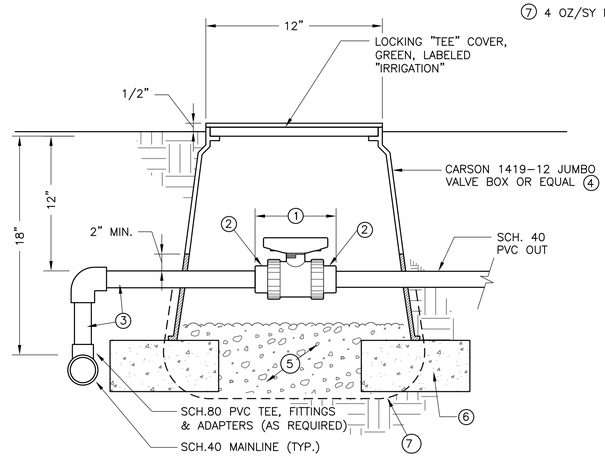
1. BRASS GATE VALVE, THREADED INLET/OUTLET, SIZED PER THE DRAWINGS OR ASSOCIATED INLET–SIDE PIPE
2. BRASS UNION
3. BRASS NIPPLE
4. SCHEDULE 40– PVC BUSHING, SxT
5. MIN. 6" DEPTH 5/8" WASHED PEA GRAVEL

1 / F-7.4 GATE VALVE & BOX (1.5 INCH & SMALLER)

NOT TO SCALE

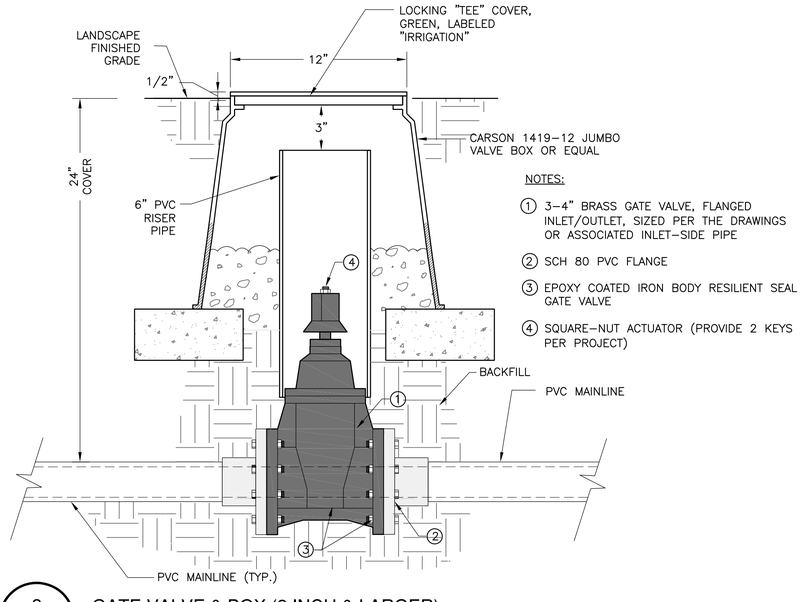
NOTES:

1. SPEARS TRUE–UNION PVC BALL VALVE
2. PVC UNION
3. MIN. 12" HORIZONTAL & VERTICAL OFFSET FROM MAINLINE
4. PLASTIC VALVE BOX, MIN. 12"ø
5. MIN. 6" DEPTH 5/8" WASHED PEA GRAVEL
6. BRICK UNDER EACH CORNER OF THE VALVE BOX
7. 4 OZ/SY NON–WOVEN GEOTEXTILE



4 / F-7.4 BALL VALVE IN LANDSCAPE

NOT TO SCALE

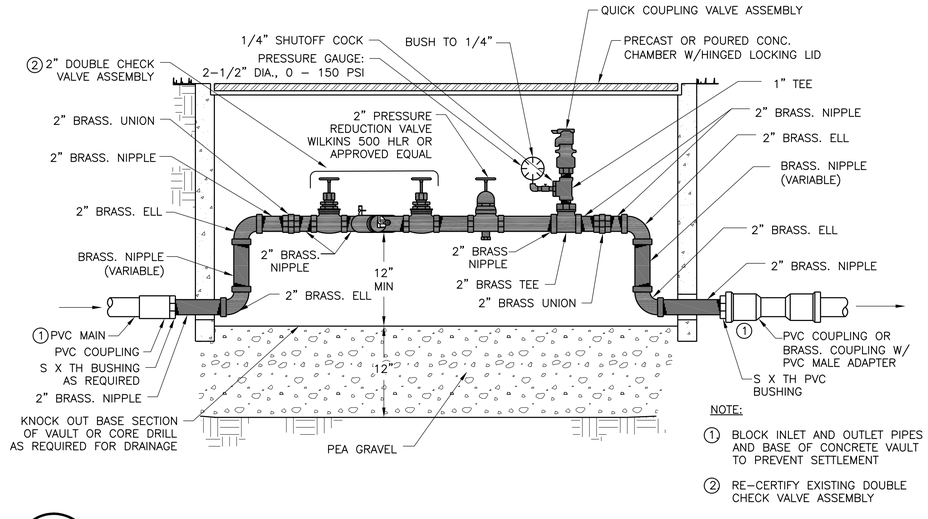


NOTES:

1. 3–4" BRASS GATE VALVE, FLANGED INLET/OUTLET, SIZED PER THE DRAWINGS OR ASSOCIATED INLET–SIDE PIPE
2. SCH 80 PVC FLANGE
3. EPOXY COATED IRON BODY RESILIENT SEAL GATE VALVE
4. SQUARE–NUT ACTUATOR (PROVIDE 2 KEYS PER PROJECT)

2 / F-7.4 GATE VALVE & BOX (2 INCH & LARGER)

NOT TO SCALE



NOTE:

1. BLOCK INLET AND OUTLET PIPES AND BASE OF CONCRETE VAULT TO PREVENT SETTLEMENT
2. RE–CERTIFY EXISTING DOUBLE CHECK VALVE ASSEMBLY

5 / F-7.4 DOUBLE CHECK VALVE ASSEMBLY

NOT TO SCALE

AUSLAND GROUP
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Drawn By: CPW, JS
Designed By: EJG
Checked By: EJG, RSH
Approved:
Director Decision Date: N.A.
First Submittal Date: 01-07-2015
Second Submittal Date:
City Approval Date:
Rev 1 By:
Rev 2 By:
Rev 3 By:
As-Built

OREGON TECH TRACK AND SOCCER PROJECT
CONSTRUCTION DOCUMENTS
MAP NO. 38-09-00, TAX LOT 4900
3201 CAMPUS DRIVE, KLAMATH FALLS, OREGON
CITY PROJECT NO. OII-2?0-P-13-17

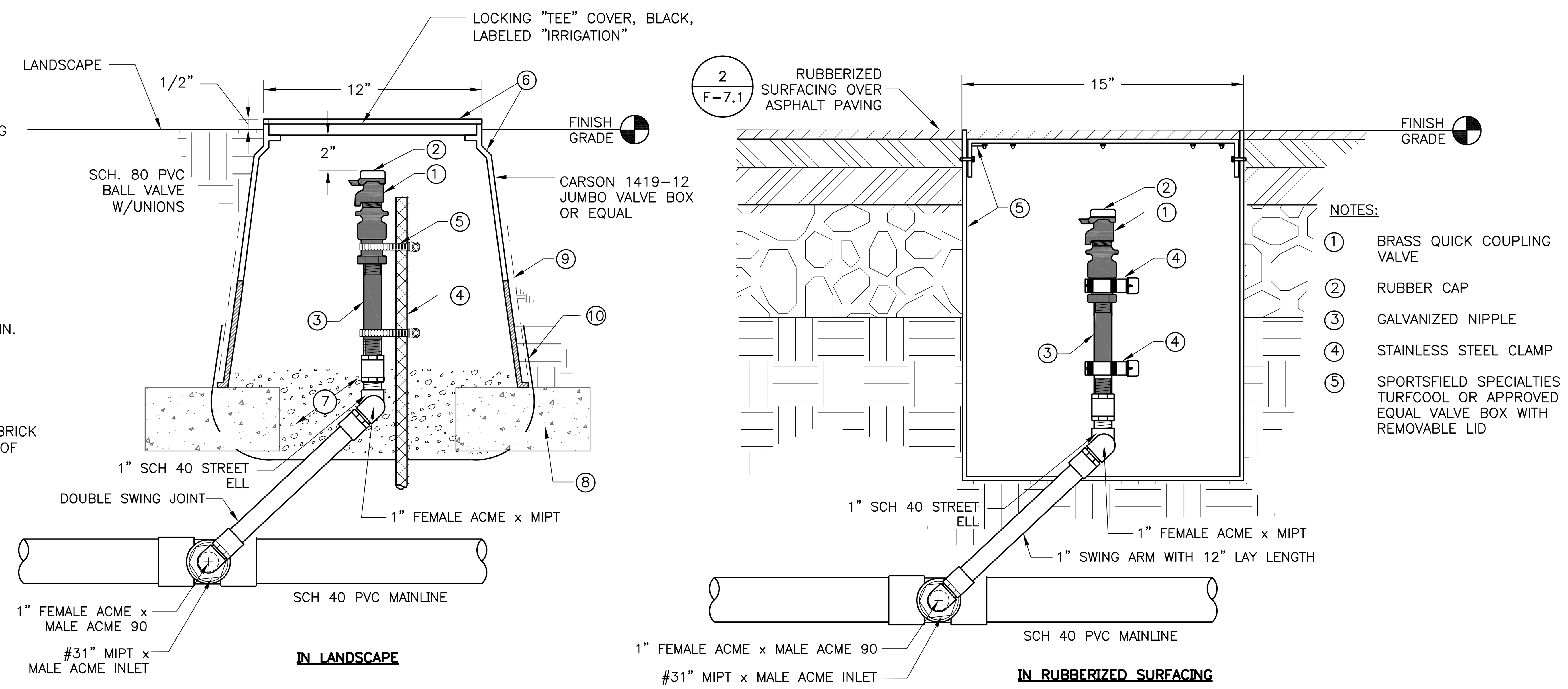
VERIFY SCALES
ORIGINAL DRAWING WAS ONE INCH ON
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

REGISTERED LANDSCAPE ARCHITECT
548
ROBERT HARDING
OREGON
05/31/15

SHEET
F-7.4
IRRIGATION & WASHWATER DETAILS

NOTES:

1. BRASS QUICK COUPLING VALVE
2. RUBBER CAP
3. GALVANIZED NIPPLE
4. #5 REBAR 36" DEPTH
5. STAINLESS STEEL BAND WORM DRIVE CLAMP
6. PLASTIC VALVE BOX, MIN. 12"ø
7. MIN. 6" DEPTH 5/8" WASHED PEA GRAVEL
8. PRE-CAST CONCRETE BRICK UNDER EACH CORNER OF THE VALVE BOX
9. 30 MIL PVC LINER OR EQUAL; TAPE TO VALVE BOX, CUT MINIMUM OPENING FOR PIPE.
10. 4 OZ/SY NON-WOVEN GEOTEXTILE

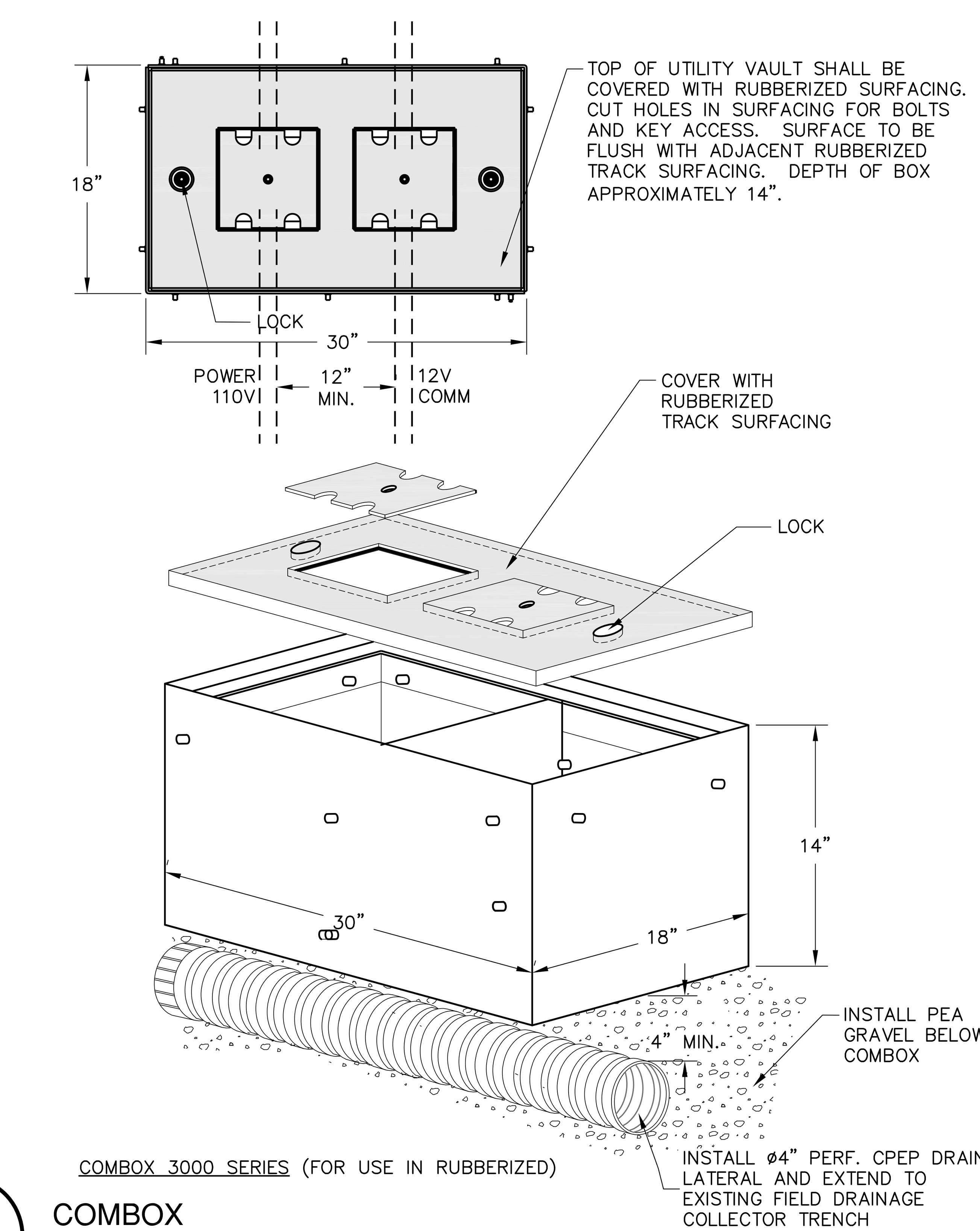


NOTES:

1. BRASS QUICK COUPLING VALVE
2. RUBBER CAP
3. GALVANIZED NIPPLE
4. STAINLESS STEEL CLAMP
5. SPORTSFIELD SPECIALTIES TURFCOOL OR APPROVED EQUAL VALVE BOX WITH REMOVABLE LID

1 F-7.5 QUICK COUPLING VALVE & BOXES (EXCLUDES QCV'S IN FIELD COOLING SYSTEM ASSEMBLIES)

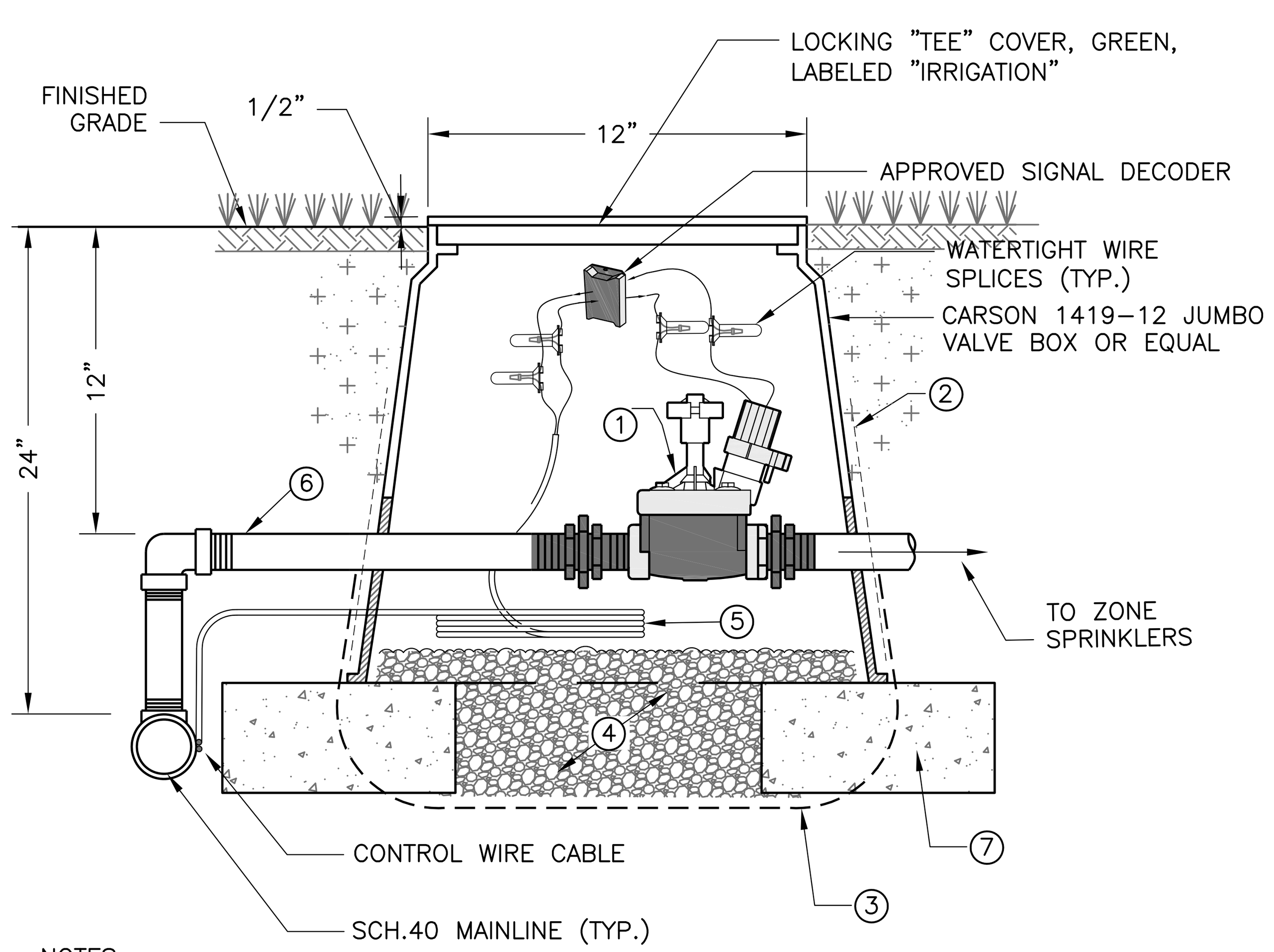
NOT TO SCALE



COMBOX 3000 SERIES (FOR USE IN RUBBERIZED)

3 F-7.5 COMBOX

NOT TO SCALE

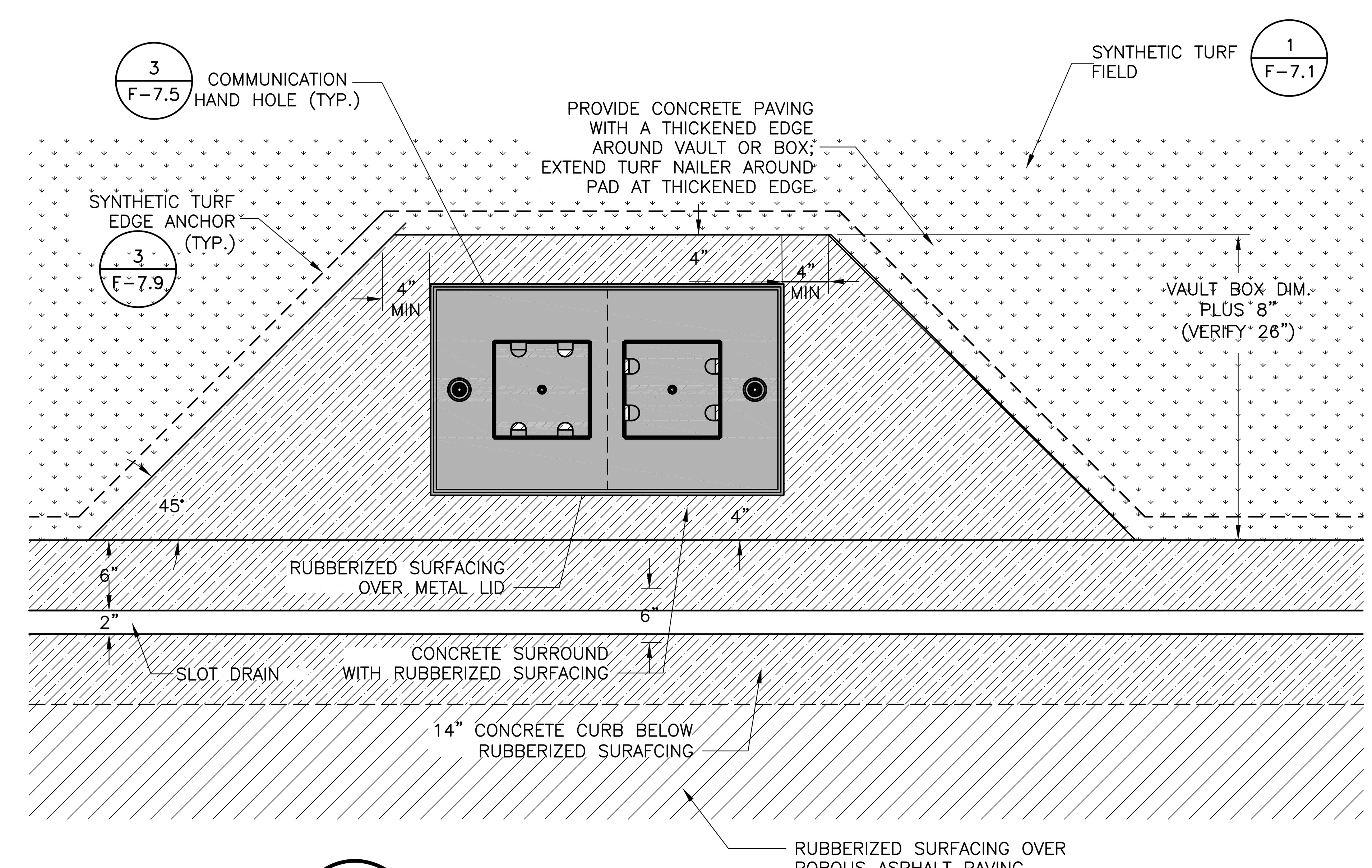


NOTES:

1. AUTOMATIC SOLENOID VALVE
2. 30 MIL PVC LINER OR EQUAL; TAPE TO VALVE BOX, CUT MINIMUM OPENING FOR PIPE.
3. 4 OZ/SY NON-WOVEN GEOTEXTILE
4. 6" DEPTH 5/8" WASHED PEA GRAVEL
5. 36" LOOP, EACH WIRE RUN
6. 12" SCH. 80 PVC NIPPLE
7. PRE-CAST CONCRETE BRICK UNDER EACH CORNER OF THE VALVE BOX

2 F-7.5 REMOTE CONTROL VALVES & BOX

NOT TO SCALE



4 F-7.5 UTILITY ACCESS - RUBBERIZED

NOT TO SCALE

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Drawn By: CPW, JS	Director Decision Date: N.A.	
Designed By: EJG	First Submittal Date: 01-07-2015	
Checked By: EJG, RSH	Second Submittal Date: 01-27-2015	
Approved:	City Approval Date:	
Rev 1	By:	
Rev 2	By:	
Rev 3	By:	
As-Built		

OREGON TECH TRACK AND SOCCER PROJECT
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3201 CAMPUS DRIVE, KLAMATH FALLS, OREGON
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VERIFY SCALES
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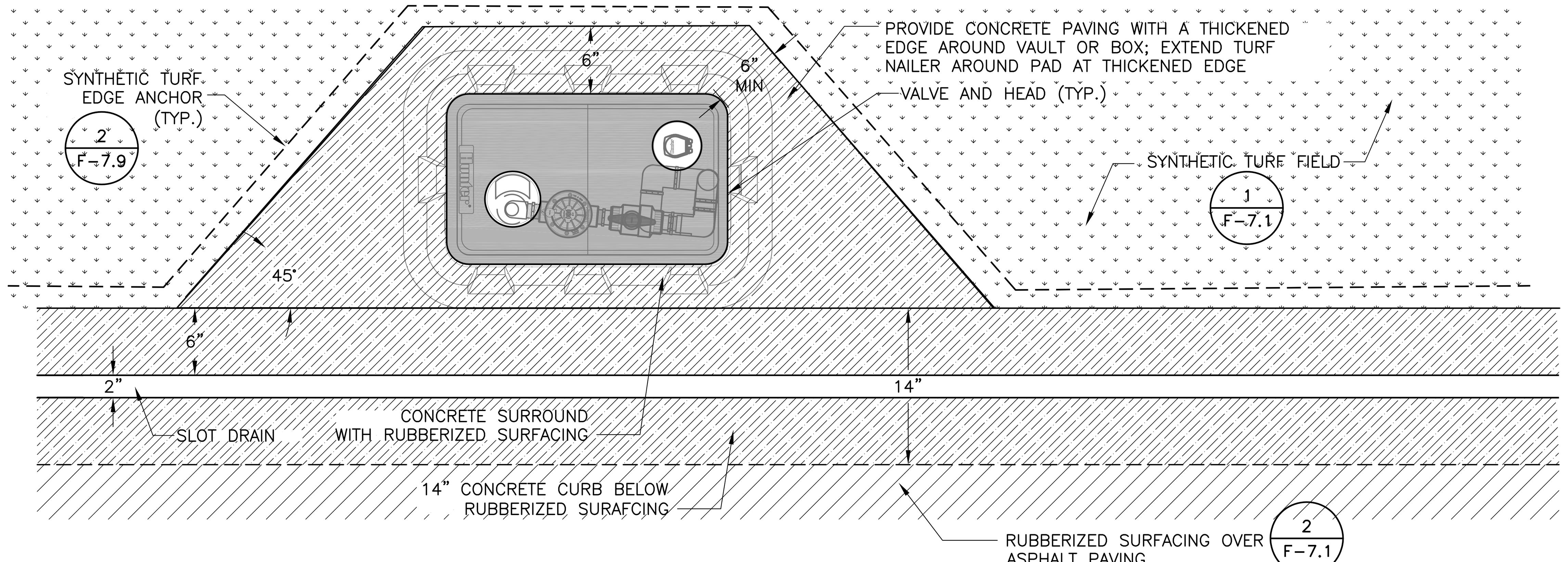
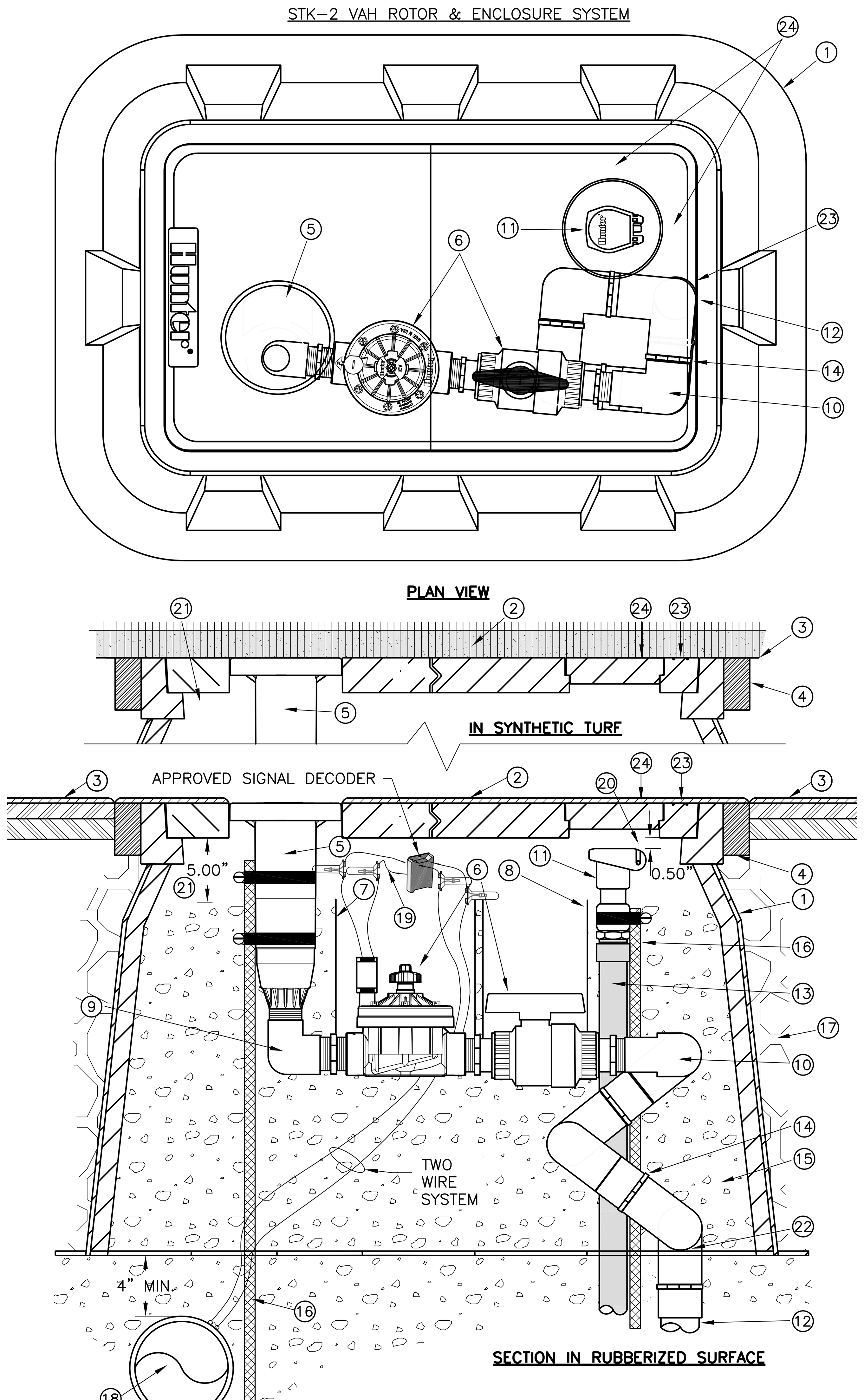
REGISTERED LANDSCAPE ARCHITECT 548 ROBERT HARDING OREGON 05/31/15

SHEET
F-7.5
IRRIGATION & WASHWATER DETAILS

Drawing name: K:\Files\Current Project Files\Oregon Institute of Technology\Drawings\F-7.5 Irrigation & Washwater Details.dwg
Plot Date: Jan 27, 2015 - 4:25pm

AUSLAND PROJECT NO: 14-0708

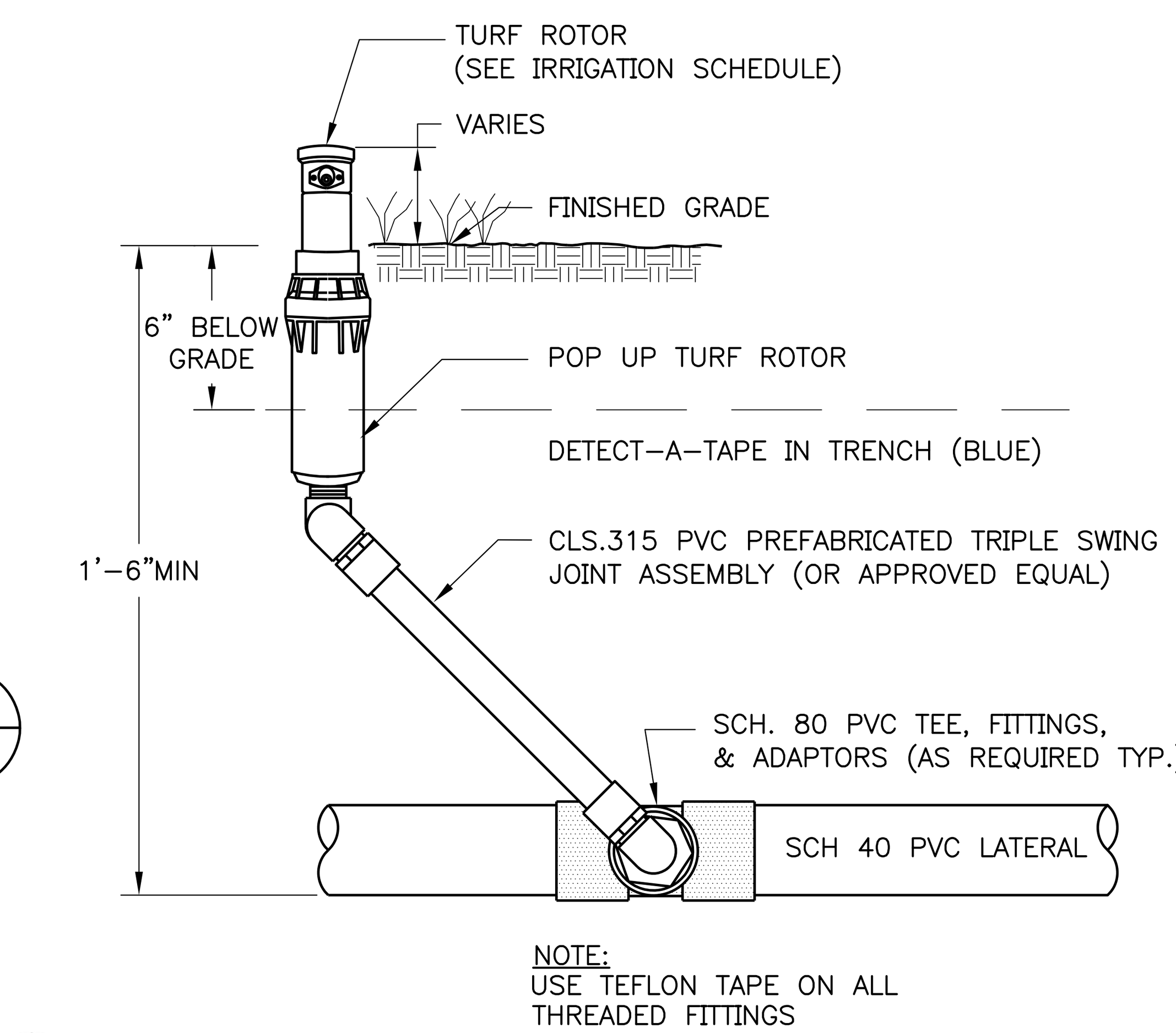




1. HUNTER ST173026B* COMPOSITE BOX & 2-PIECE POLYMER-CONCRETE LID ASSEMBLY WITH CAST-IN OPENING TO SUPPORT ROTOR LATERAL THRUST PLUS CAST IN OPENING WITH CIRCULAR COVER FOR QUICK COUPLER ACCESS
2. RUBBERIZED TRACK SURFACE OR INFILLED SYNTHETIC TURF (2 F-7.1) (1 F-7.1)
3. FINISHED GRADE SET TO TOP OF POROUS ASPHALT PAVING
4. CONCRETE COLLAR
5. HUNTER STG-900 WITH RUBBER COVER KIT 473900 INSTALLED
6. HUNTER STVBVFK KIT - INCLUDES HUNTER ICV-151G, 1 ½" BALL VALVE (235 PSI RATED) PLUS ACME PIVOT CONNECTION FITTINGS
7. CONTROL VALVE SLEEVE, 8" DIAMETER X 11" TALL WITH 2 NOTCHED SECTIONS FOR PIPING
8. BALL VALVE SLEEVE, 6" DIAMETER X 11" TALL WITH 2 NOTCHED SECTIONS FOR PIPING
9. HUNTER 239800 ROTOR ADAPTER FITTING WITH 2 ACME PIVOT POINTS
10. HUNTER ST2008VA PREFABRICATED 2" SCH 80 PVC SWING JOINT WITH 6 ACME PIVOT POINTS TO PROVIDE MULTI-AXIS ARTICULATION AND ALIGNMENT OF ROTOR TO THE OPENING IN ENCLOSURE COVER
11. HUNTER HQ5RC QUICK COUPLING VALVE
12. SUPPLY PIPING AND FITTINGS - 3" MINIMUM FROM MAINLINE THROUGH TO ST2008VA SWING JOINT
13. SCH 80 PVC RISER SUPPLY PIPING AND FITTINGS - 1" MINIMUM
14. ACME THREADED PIVOTING POINTS (9 TOTAL)
15. WASHED PEA GRAVEL
16. 5/8" X 30" REBAR STAKE AND STAINLESS STEEL STRAPPING
17. COMPACTED FIELD BASE MATERIAL
18. PROVIDE 4" PERFORATED CPEP LATERAL PIPE TO EXISTING FILED DRAINAGE COLLECTOR
19. WATERPROOF CONNECTIONS PER SPECIFICATION
20. TOP OF QUICK COUPLER SET 1/2" BELOW UNDERSIDE OF ENCLOSURE COVER
21. GRAVEL LEVEL 5" BELOW UNDERSIDE OF ENCLOSURE COVER (TO BOTTOM OF ROTOR'S COMPARTMENT)
22. ELEVATION OF SWING JOINT'S INLET - SET SECOND PIVOT POINT ON SWING JOINT WITH BOTTOM OF ENCLOSURE PER SIDE VIEW DETAIL DRAWING (26" BELOW ENCLOSURE TOP)
23. LOCATION OF SWING JOINT'S INLET - SET INLET AT CENTERLINE EDGE OF ENCLOSURE COVER PER TOP VIEW DETAIL DRAWING. INLET CAN BE SET DIRECTLY BELOW ENCLOSURE RIM AT CENTERLINE. INLET MUST NOT BE SET CLOSER TO ROTOR THAN SHOWN.
24. LOCATION OF QUICK COUPLER INLET PIPING - MEASURE INLET PIPING LOCATION AT TOP RIGHT HAND CORNER OF ENCLOSURE - 5" FROM TOP EDGE AND 5" FROM SIDE EDGE.
25. DEFER TO MANUFACTURERS STANDARD INSTALLATION FOR IN-TURF INSTALLATION

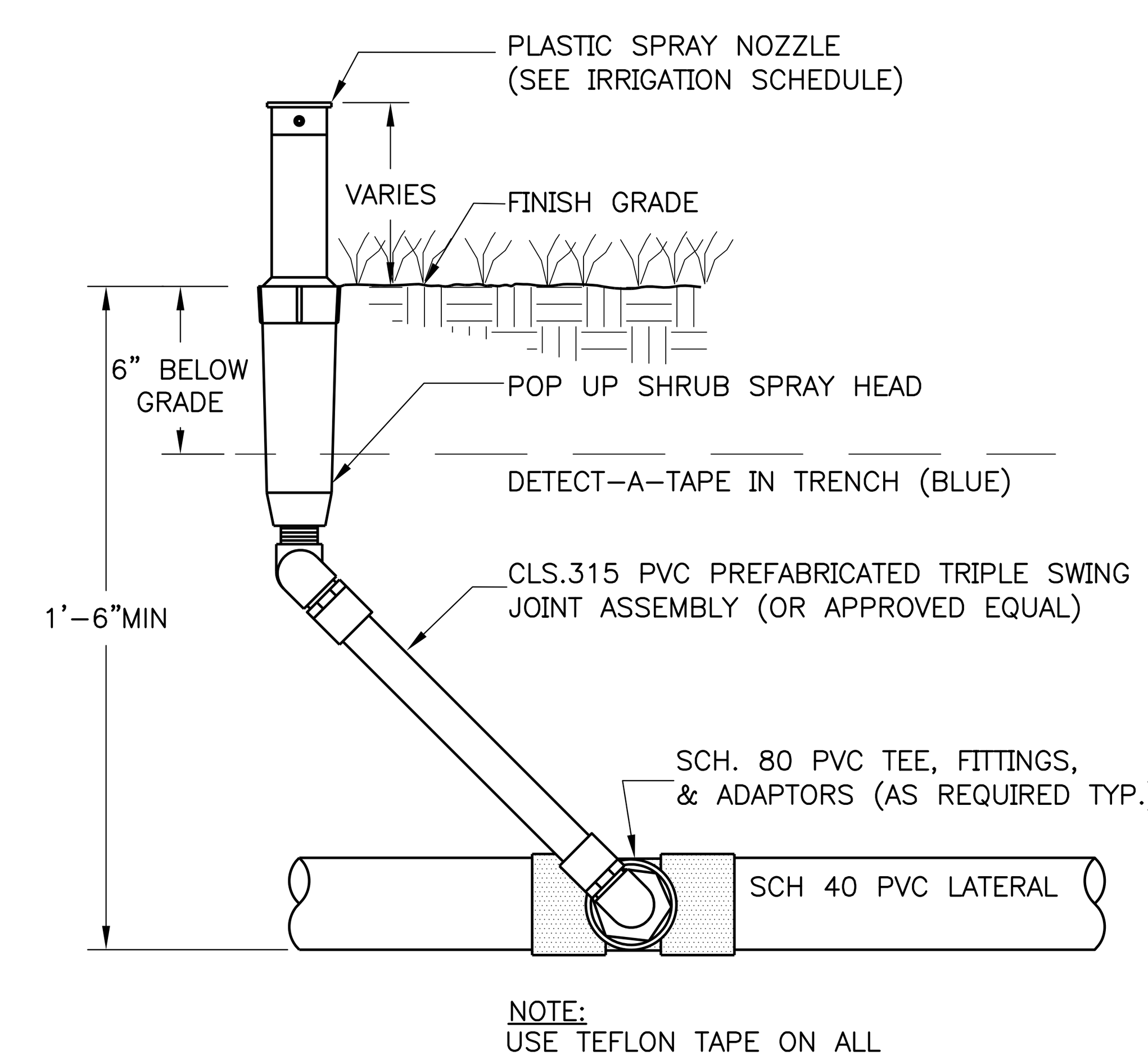
*ENCLOSURE DIMENSIONS:
2 - PIECE COVER - 17" X 30",
EXPOSED RIM - 20" X 33", OVERALL HEIGHT - 26",
BASE PAD - 27" X 41"

1 / F-7.6 — VALVE & HEAD
NOT TO SCALE



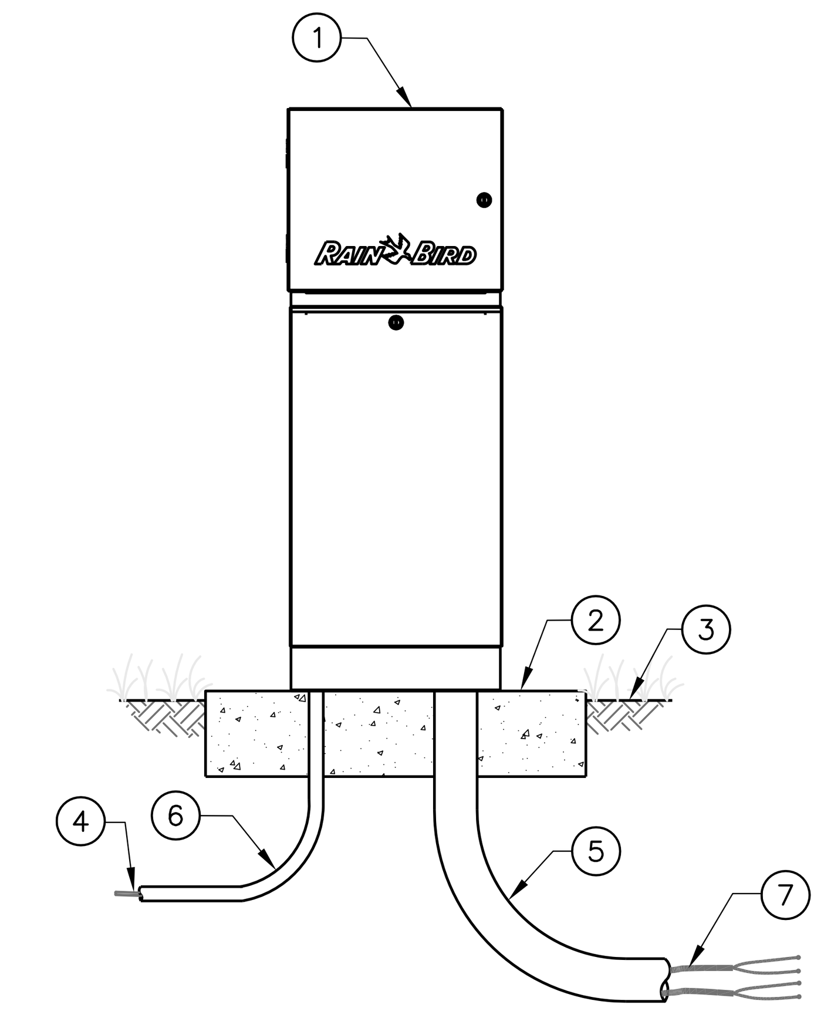
NOTE:
USE TEFLON TAPE ON ALL THREADED FITTINGS

2 / F-7.6 — IRRIGATION POP-UP ROTOR HEAD
NOT TO SCALE



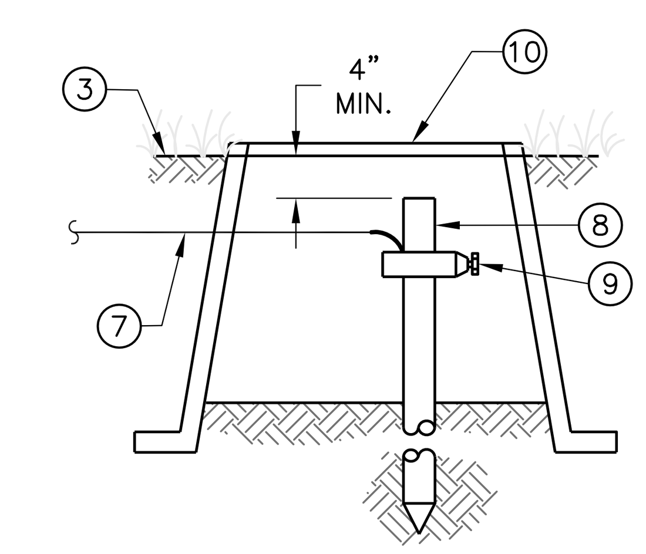
NOTE:
USE TEFLON TAPE ON ALL THREADED FITTINGS

3 / F-7.6 — IRRIGATION SPRAY HEAD-GRASS
NOT TO SCALE



CONTROLLER & PEDESTAL INSTALLATION

1. FIELD SATELLITE CONTROLLER:
*A-FIELD: RAIN BIRD ESP-12SAT-2S-LS
*B-LANDSCAPE: RAIN BIRD ESP-24SAT-2S-LS
PED-DD16 PEDESTAL ENCLOSURE
2. CONCRETE PAD: 8-INCH MINIMUM THICKNESS
3. FINISH GRADE
4. WIRES TO REMOTE CONTROL VALVES
5. 2-INCH PVC SCH 40 CONDUIT, FITTINGS AND SWEEP ELL
6. 1-INCH PVC SCH 40 CONDUIT, FITTINGS AND SWEEP ELL TO POWER SUPPLY
7. BARE COPPER WIRE (#10 AWG MIN.): CONNECT TO GROUNDING BUSS IN CONTROLLER CABINET AND ROUTE TO GROUND ROD. PATH TO GROUND ROD SHOULD BE AS STRAIGHT AS POSSIBLE.
8. 5/8-INCH X 8 FT COPPER CLAD GROUNDING ROD OR GROUNDING PLATE.
9. GROUND ROD CLAMP OR WELDS
10. COVER GROUNDING ROD WITH 10-INCH ROUND VALVE BOX AS SHOWN



GROUND ROD INSTALLATION

4 / F-7.6 — IRRIGATION CONTROLLER-CABINET
NOT TO SCALE

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Grants Pass 541.476.3788
Medford 541.773.3387

DA HOGAN

Drawn By:	CPW, JS	Director Decision Date:	N.A.
Designed By:	EJG	First Submittal Date:	01-07-2015
Checked By:	EJG, RSH	Second Submittal Date:	
Approved:		City Approval Date:	
Rev 1		By:	
Rev 2		By:	
Rev 3		By:	
As-Built			

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548
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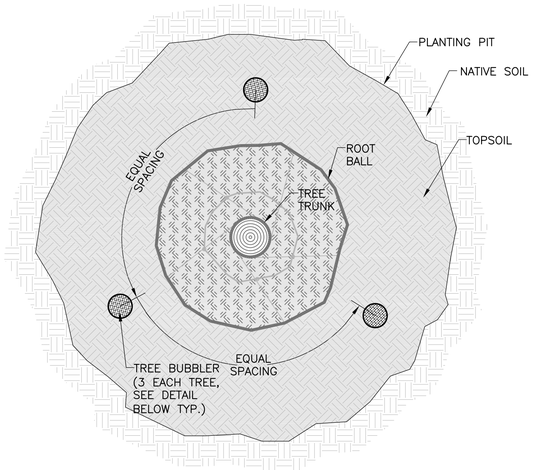
OREGON
05/31/15

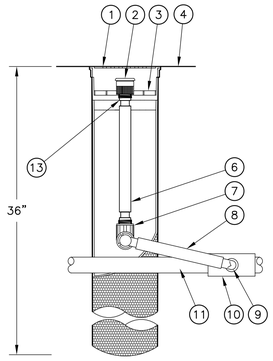
SHEET
F-7.6
IRRIGATION & WASHWATER DETAILS

Drawing name: K:\Files\Current Project Files\Oregon Institute of Technology\Drawings\F-7.6 Irrigation & Washwater Details.dwg
Plot Date: Jan 02, 2015 - 10:55am

AUSLAND PROJECT NO: 14-0708



TREE PLAN VIEW



1. 4–INCH LOCKING GRATE (INCLUDED)
2. BUBBLER: RAIN BIRD 1401 0.25 GPM (INCLUDED)
3. ROOT WATERING SYSTEM: RAIN BIRD RWS–B–1401 (INCLUDES 1401 0.25 GPM BUBBLER WITH RISER, GRATE, SWING ASSEMBLY, 1/2" MALE NPT INLET, AND BASKET CANISTER)
4. FINISH GRADE/TOP OF MULCH
5. (NOT USED)
6. 1/2–INCH POLY SWING PIPE (INCLUDED)
7. 1/2–INCH SPIRAL BARB ELBOW (INCLUDED)
8. 12–INCH SWING ASSEMBLY (INCLUDED)
9. 1/2–INCH MALE NPT INLET (INCLUDED)
10. PVC SCH 40 TEE OR EL
11. SCHEDULE 40 PVC LATERAL PIPE
12. 4" WIDE X 36" LONG RIGID BASKET WEAVE CANISTER (INCLUDED)
13. 1/2–INCH STRAIGHT SPIRAL BARB FITTING (1 OF 2, INCLUDED)

NOTES:

A. 4" GRATE IS ALSO AVAILABLE IN PURPLE (RWS–GRATE–P).

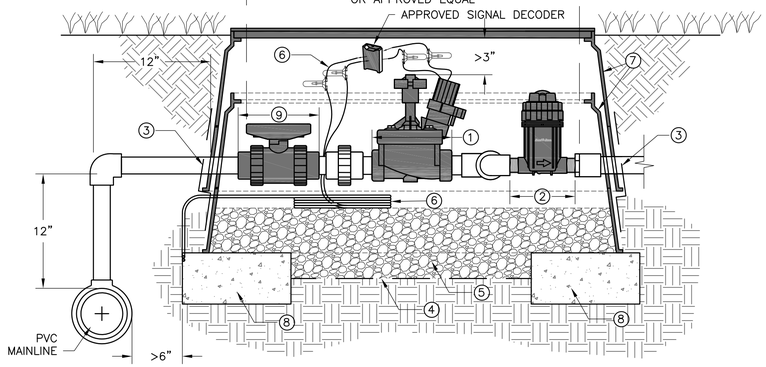
B. INSTALL PRODUCT SO THAT THE GRATE IS EVEN WITH FINISH GRADE OR TOP OF MULCH.

C. WHEN INSTALLING IN EXTREMELY HARD OR CLAY SOILS, ADD ¾" GRAVEL UNDER AND AROUND THE UNIT TO ALLOW FASTER WATER INFILTRATION AND ROOT PENETRATION.

D. ONCE RWS HAS BEEN INSTALLED FILL THE BASKET WITH PEA GRAVEL BEFORE LOCKING LID.

1 F-7.7 ROOT WATERING SYSTEM

NOT TO SCALE

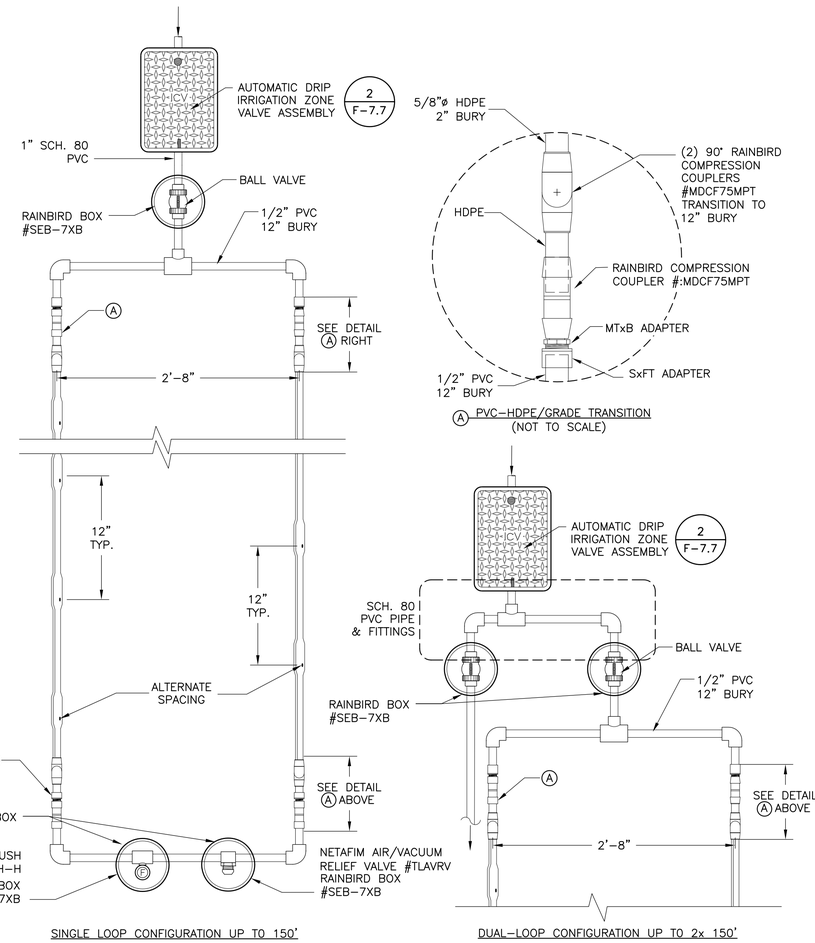


NOTES:

1. AUTOMATIC SOLENOID VALVE
2. PRESSURE REDUCING VALVE WITH #200 FILTER SCREEN
3. 30 MIL PVC LINER OR EQUAL; TAPE TO VALVE BOX, CUT MINIMUM OPENING FOR PIPE.
4. 4 OZ/SY NON–WOVEN GEOTEXTILE
5. 6" DEPTH 5/8" WASHED PEA GRAVEL
6. 36" LOOP EACH WIRERUN
7. CARSON OR EQUAL PLASTIC VALVE BOXES, STACKED & SIZED TO MEET CLEARANCES REQUIRED, "TEE" TYPE LID
8. PRE–CAST CONCRETE BRICK UNDER EACH CORNER OF THE VALVE BOX
9. SPEARS TRUE–UNION PVC BALL VALVE

2 F-7.7 AUTOMATIC CONTROL VALVE - DRIP ZONE

NOT TO SCALE



3 F-7.7 DRIPLINE

NOT TO SCALE

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Director Decision Date: N.A.
First Submittal Date: 01-07-2015
Second Submittal Date: 01-28-2015
City Approval Date:

		By:	By:	By:
Drawn By:	CPW, JS			
Designed By:	EJG			
Checked By:	EJG, RSH			
Approved:				
Rev 1				
Rev 2				
Rev 3				
As-Built				

OREGON TECH TRACK AND SOCCER PROJECT
CONSTRUCTION DOCUMENTS
MAP NO. 38-09-00, TAX LOT 4900
3201 CAMPUS DRIVE, KLAMATH FALLS, OREGON
CITY PROJECT NO. OIT-270-P-13-17

VERIFY SCALES
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REGISTERED 548 ROBERT HARDING OREGON 05/31/15 LANDSCAPE ARCHITECT

SHEET
F-7.7
IRRIGATION & WASHWATER DETAILS

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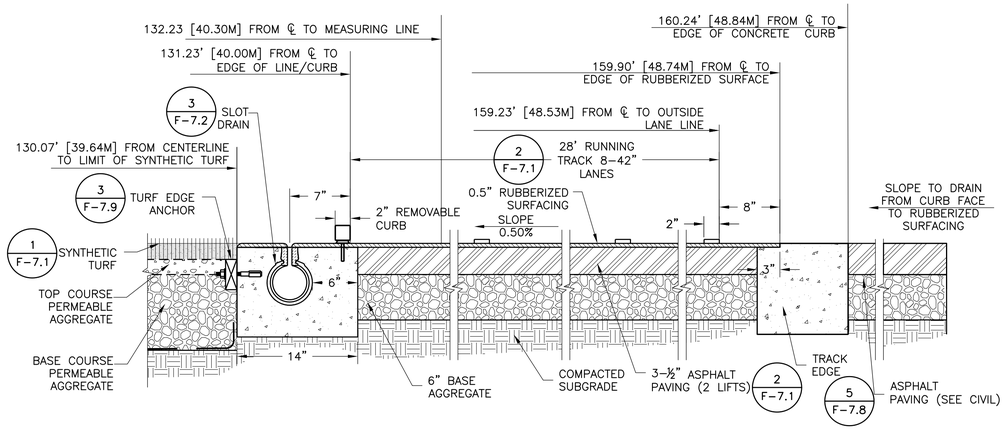
Plot Date: Jan 28, 2015 - 10:14am



1 F-7.8 TRACK SECTION NORTH

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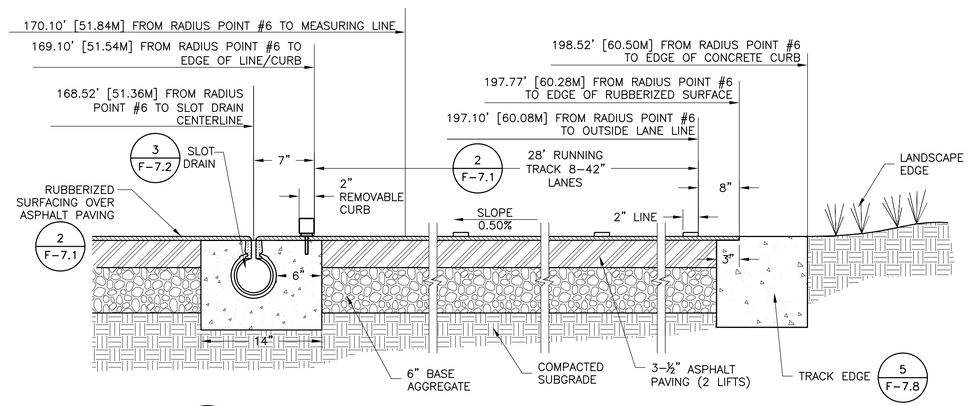

4 F-7.8 TRACK SECTION WEST

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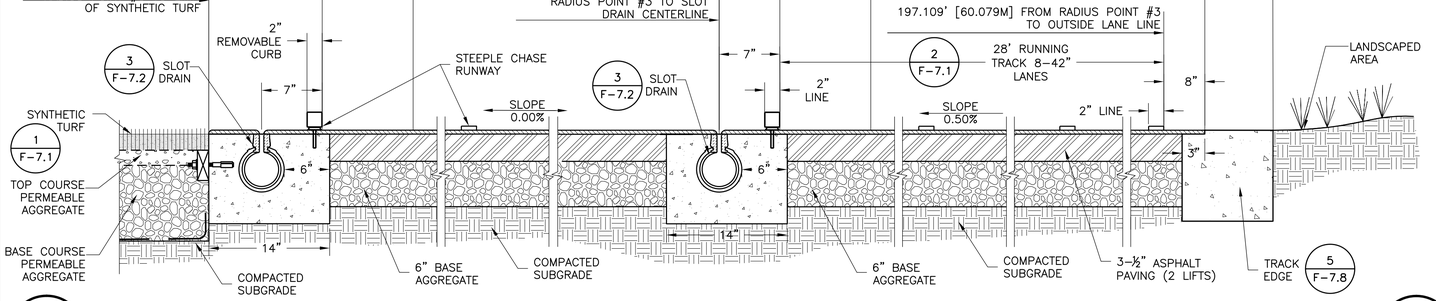

2 F-7.8 TRACK SECTION EAST

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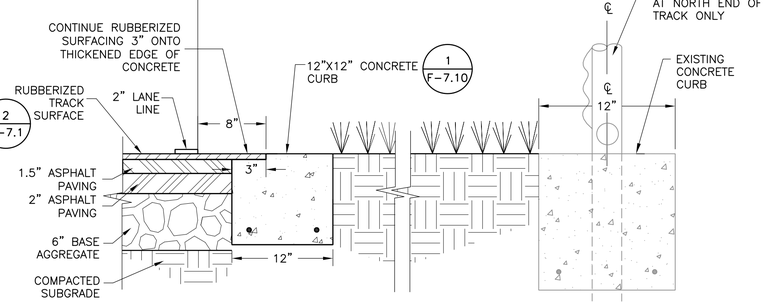

5 F-7.8 RUBBERIZED SURFACE EDGE

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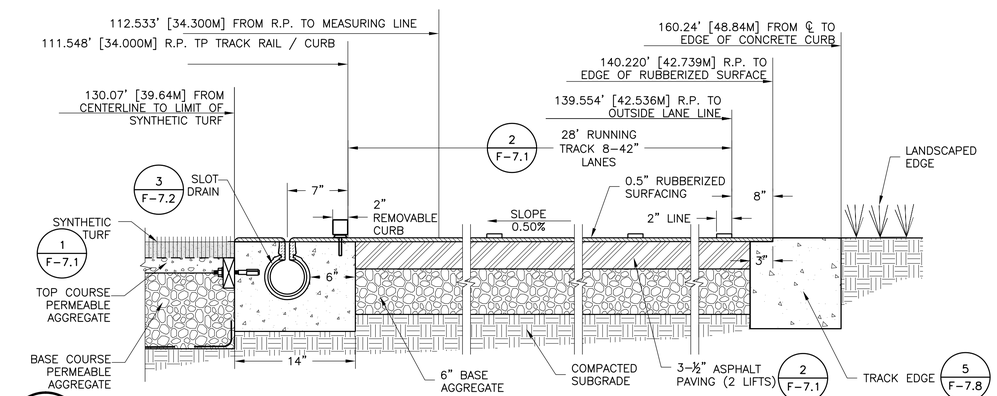

3 F-7.8 TRACK SECTION SOUTH

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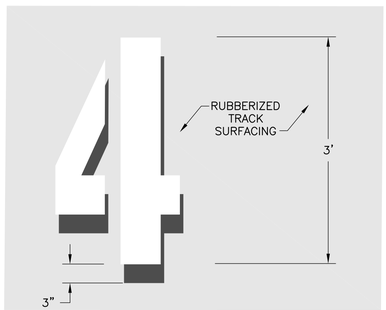

NOTE:

1. CENTER NUMBER IN LANE
2. SUBMIT STENCIL EXAMPLE TO ENGINEER FOR APPROVAL BEFORE APPLICATION

6 F-7.8 TYPICAL TRACK NUMBER

NOT TO SCALE

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Approved:				
Rev 1				
Rev 2				
Rev 3				
As-Built				

OREGON TECH TRACK AND SOCCER PROJECT

CONSTRUCTION DOCUMENTS

MAP NO. 38-09-00, TAX LOT 4900
3201 CAMPUS DRIVE, KLAMATH FALLS, OREGON
CITY PROJECT NO. OIT-270-P-13-17

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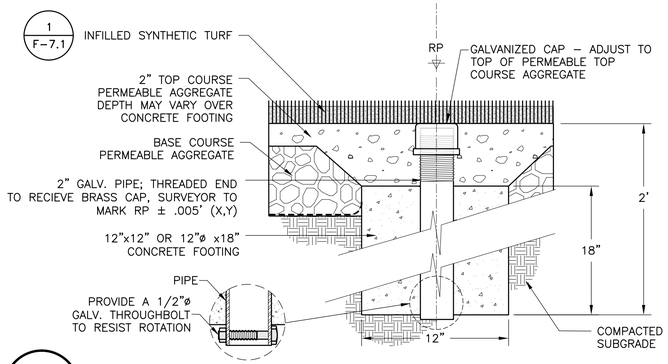
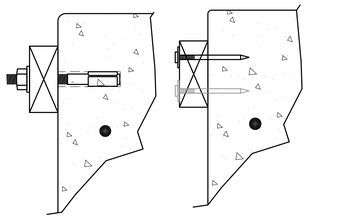
SHEET
F-7.8
TRACK DETAILS

Drawing name: K:\Files\Current Project Files\Oregon Institute of Technology\Drawings\F-7.8 Track Details.dwg
Plot Date: Jan 27, 2015 - 4:01pm



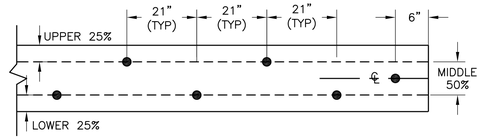
1 / F-7.9 RADIUS POINT MONUMENT

NOT TO SCALE



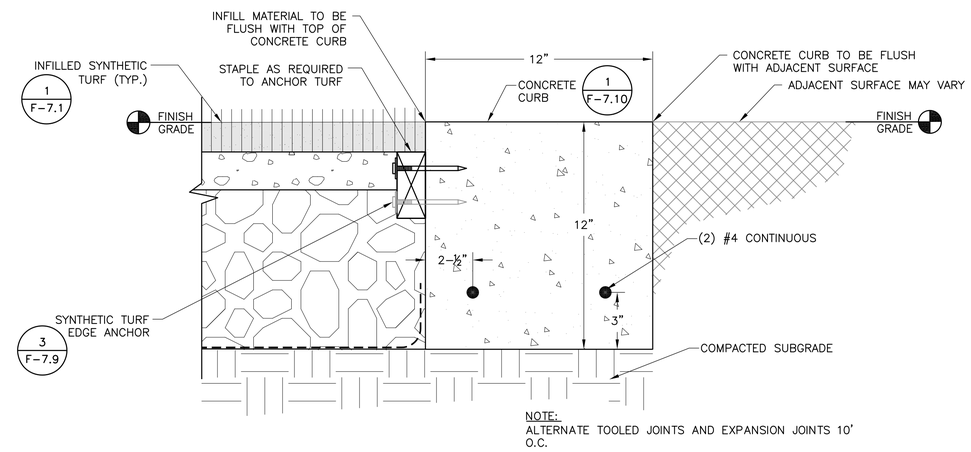
NOTES:

1. THE PLASTIC 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.
2. THE CONTRACTOR MAY CHOOSE TO UTILIZE STEEL POWER-LOAD DRIVEN OR RAM-SET CONCRETE ANCHOR NAILS, 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.
3. ONCE 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.
4. WEDGE ANCHOR TO BE SET AT MIDDLE 50% OF EACH BOARD. 30" O.C. MAX., 4-6" FROM ENDS.
5. MINIMUM REQUIREMENTS FOR CONCRETE ANCHOR NAIL INSTALLATION DEPTH OF EMBEDMENT: 2" OR AS RECOMMENDED BY THE ANCHOR SUPPLIER, WHICHEVER IS GREATER. HORIZONTAL SPACING: NO GREATER THAN 21" ON CENTER AND 6" FROM END OF ANY LENGTH OF LUMBER. STAGGER THE SPACING OF EACH ANCHOR UP AND DOWN WITHIN THE MIDDLE ONE-HALF THE FACE OF THE RECYCLED EDGE ANCHOR.



3 / F-7.9 SYNTHETIC TURF EDGE ANCHOR

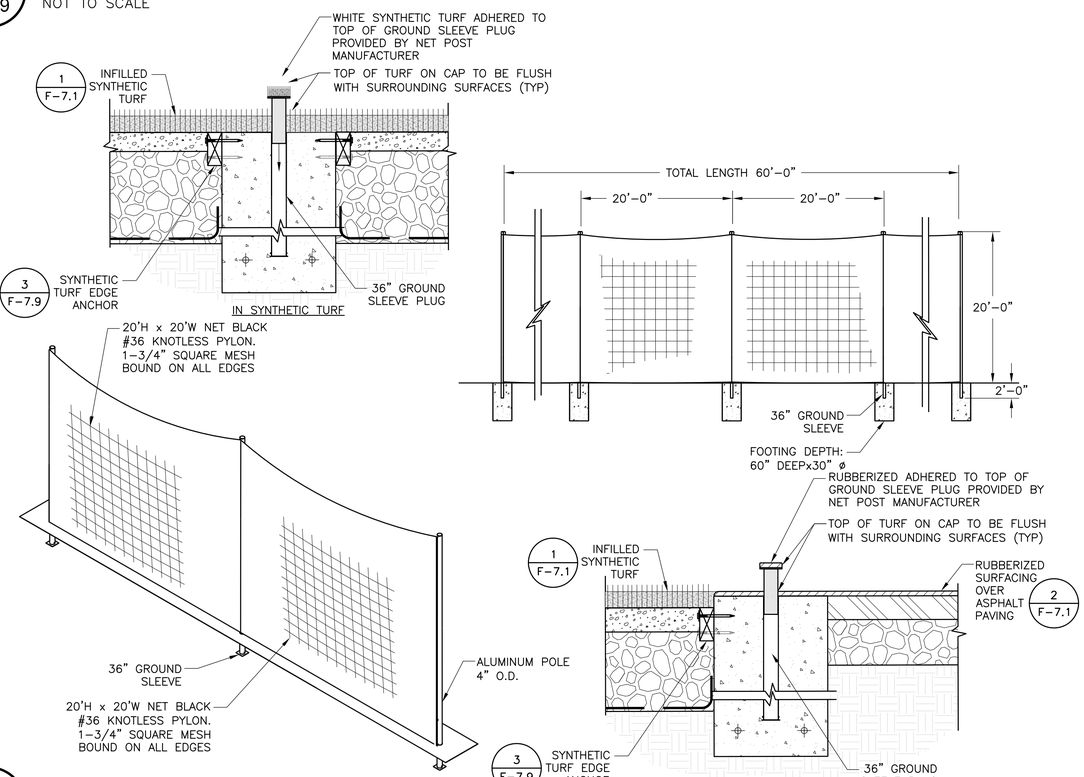
NOT TO SCALE



NOTE:
ALTERNATE TOOLED JOINTS AND EXPANSION JOINTS 10' O.C.

2 / F-7.9 SYNTHETIC TURF EDGE ANCHOR AT CONCRETE CURB

NOT TO SCALE



4 / F-7.9 20' BALL CONTROL NETTING

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OREGON TECH TRACK AND SOCCER PROJECT

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LANDSCAPE ARCHITECT

SHEET
F-7.9
SITE DETAILS

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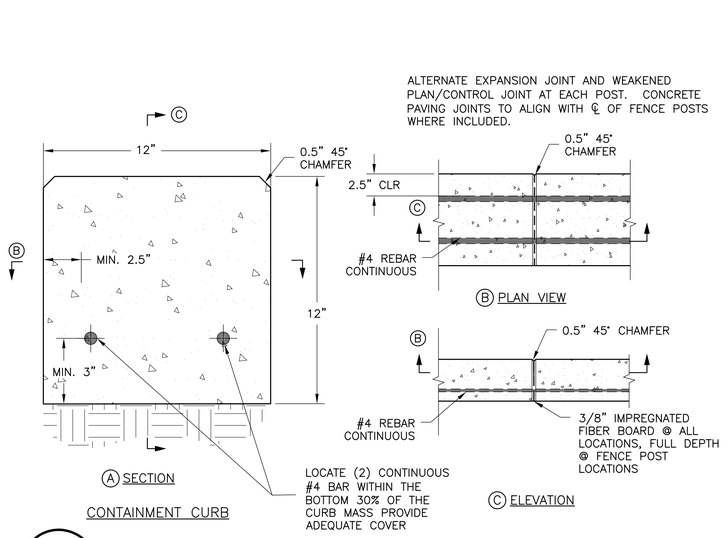
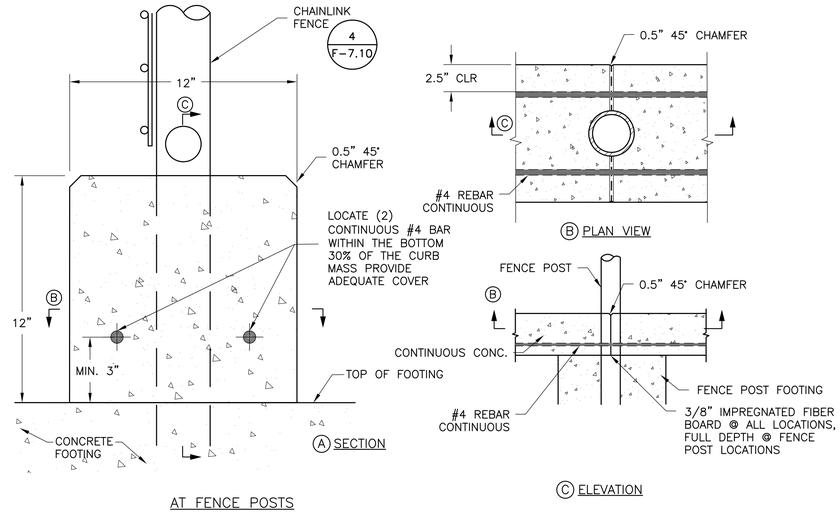
Plot Date: Jan 02, 2015 - 12:14pm



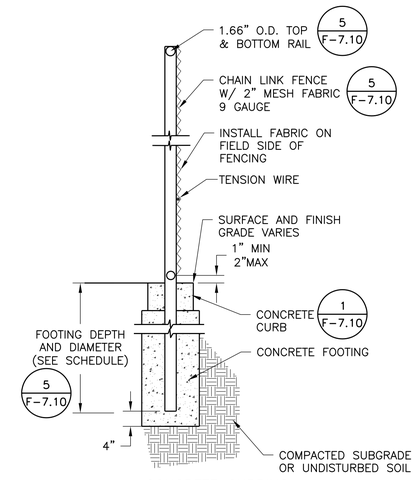
CONTAINMENT CURB



AT FENCE POSTS

1 / F-7.10 CONCRETE CURB & EXPANSION JOINT

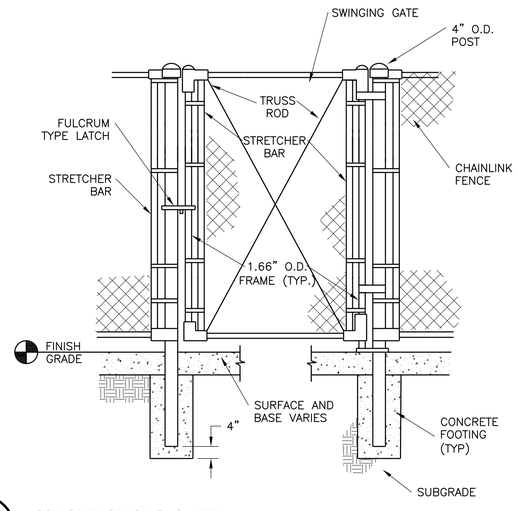
NOT TO SCALE



CONCRETE CURBING

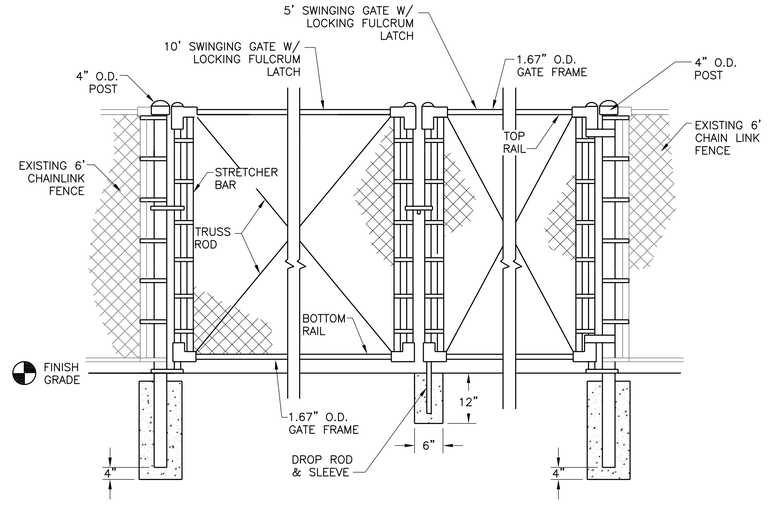
4 / F-7.10 CHAINLINK FENCE

NOT TO SCALE



2 / F-7.10 SINGLE SWING GATE

NOT TO SCALE



3 / F-7.10 DOUBLE SWING GATE

NOT TO SCALE

FENCING TYPE	8' HIGH FENCING	6' HIGH FENCING
CORNER POST	4.000" OD	2.875" OD
TERMINAL POST	4.000" OD	2.875" OD
LINE POST	2.875" OD	2.375" OD
FOOTING DEPTH	42"	36"
FOOTING DIAMETER	12"	12"
TOP RAIL HT.	8'	6'
INTERMEDIATE RAIL HTS.	---	---
BOTTOM RAIL HT	1"	1"
TENSION WIRE HTS.	4'	3'

FENCING NOTES:

1. ALL FENCING FABRIC SHALL BE NO. 9 GAUGE FINISHED STEEL WIRES WITH BLACK VINYL COATING EXCEPT FOR DESIGNATED SECTIONS OF THE BACKSTOP FENCING WHICH SHALL INCLUDE NO. 6 GAUGE FINISHED STEEL WIRES WITH BLACK VINYL COATING.
2. ALL POSTS, RAILS, BRACES, POST TOPS, STRETCHER BARS, BANDS, ETC. SHALL BE PAINTED BLACK.
3. TENSION WIRES AND WIRE TIES SHALL INCLUDE A BLACK VINYL COATING.
4. MAXIMUM POST SPACING: 10' ON CENTER.

5 / F-7.10 CHAINLINK FENCING AND SCHEDULE

NOT TO SCALE

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Drawn By:	CPW, JS	Director Decision Date:	N.A.						
Designed By:	EJG	First Submittal Date:	07-07-2015						
Checked By:	EJG, RSH	Second Submittal Date:							
Approved:		City Approval Date:	By:	By:	By:				
Rev 1									
Rev 2									
Rev 3									
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OREGON TECH TRACK AND SOCCER PROJECT
CONSTRUCTION DOCUMENTS
MAP NO. 38-09-00, TAX LOT 4900
3201 CAMPUS DRIVE, KLAMATH FALLS, OREGON
CITY PROJECT NO. CII-2707-13-17

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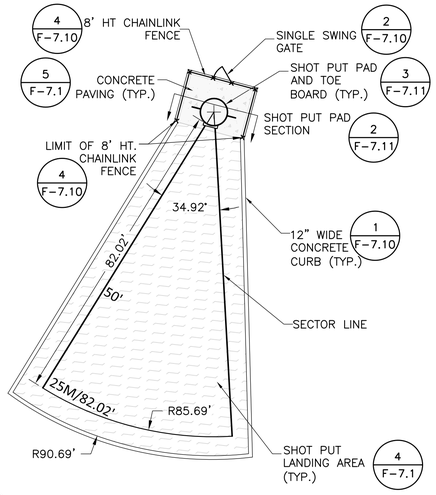
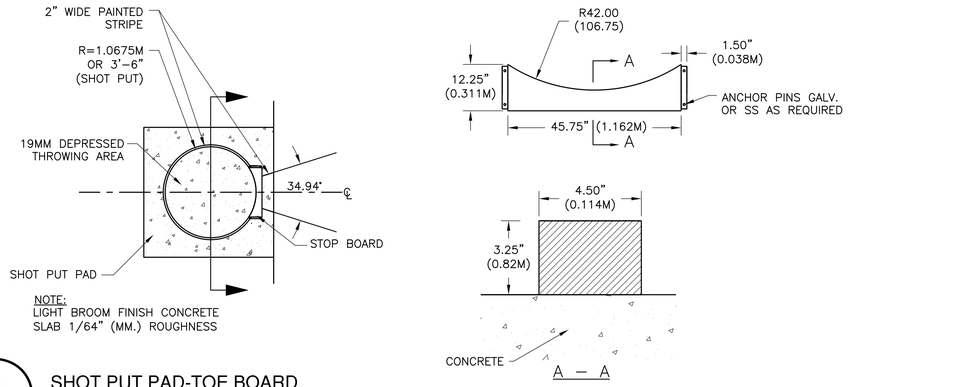
OREGON
05/31/15

SHEET
F-7.10
SITE DETAILS



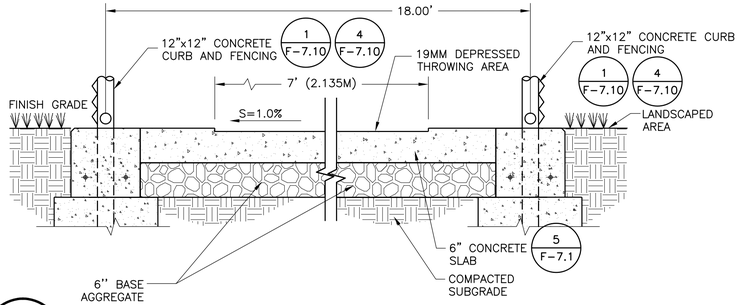
1 F-7.11 SHOT PUT - PLAN VIEW

NOT TO SCALE



3 F-7.11 SHOT PUT PAD-TOE BOARD

NOT TO SCALE



2 F-7.11 SHOT PUT PAD SECTION

NOT TO SCALE

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Rev. 3 By:
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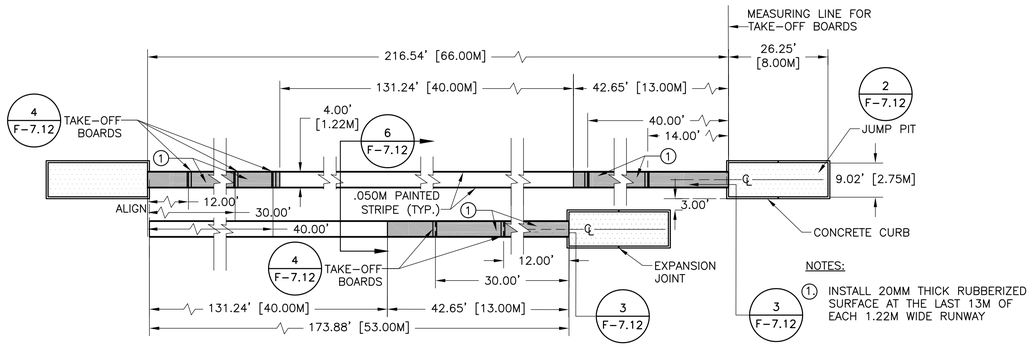
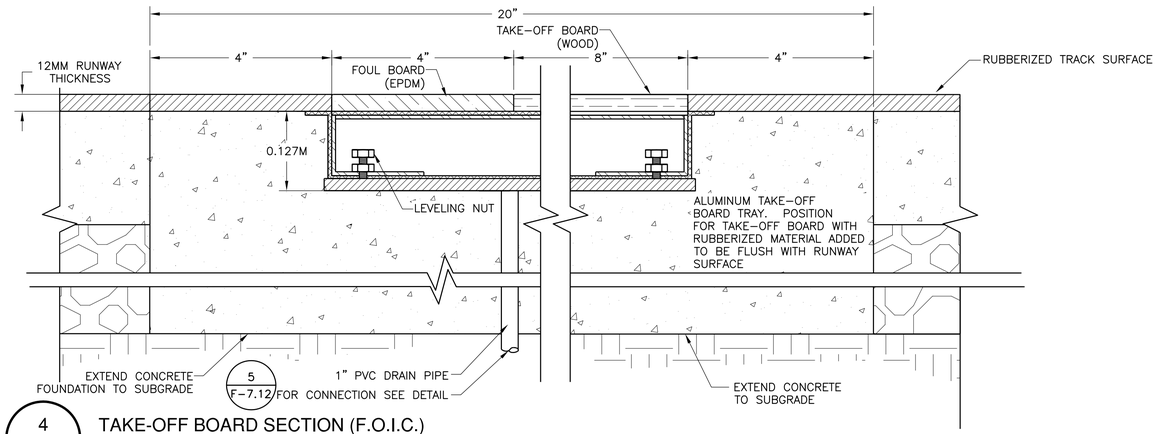
OREGON
05/31/15

SHEET
F-7.11
FIELD EVENT DETAILS



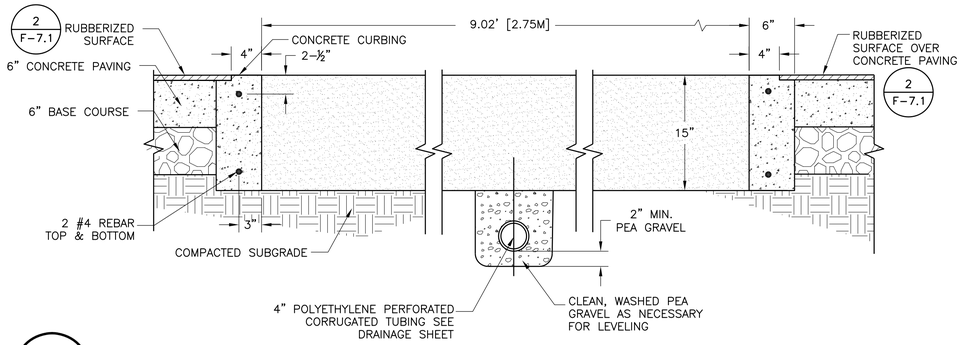
1 / F-7.12 LONG JUMP TRIPLE JUMP- PLAN VIEW

NOT TO SCALE



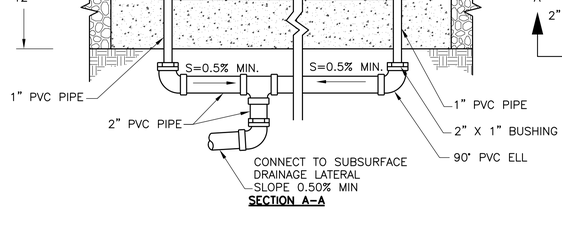
4 / F-7.12 TAKE-OFF BOARD SECTION (F.O.I.C.)

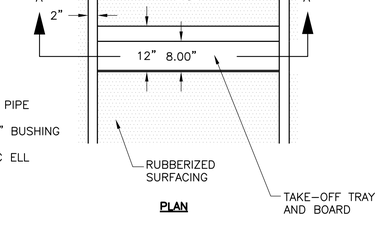
NOT TO SCALE



2 / F-7.12 JUMP PIT SECTION AT CONCRETE CURB

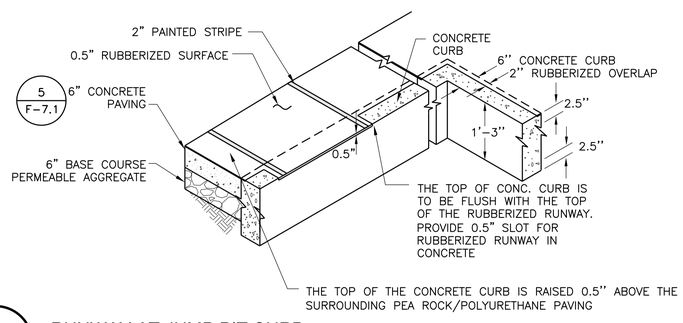
NOT TO SCALE





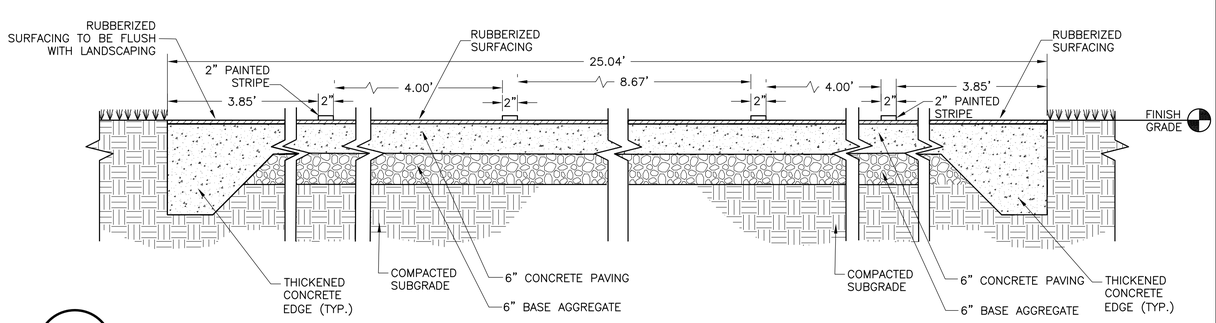
5 / F-7.12 TAKE-OFF BOARD TRAY (F.O.I.C.)

NOT TO SCALE



3 / F-7.12 RUNWAY AT JUMP PIT CURB

NOT TO SCALE



6 / F-7.12 LONG JUMP TRIPLE JUMP RUNWAY SECTION

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City Approval Date:

Drawn By: CPW, JS
Designed By: EJG
Checked By: EJG, RSH
Approved:
Rev 1 By:
Rev 2 By:
Rev 3 By:
As-Built

OREGON TECH TRACK AND SOCCER PROJECT

CONSTRUCTION DOCUMENTS

MAP NO. 38-09-00, TAX LOT 4900
3201 CAMPUS DRIVE, KLAMATH FALLS, OREGON
CITY PROJECT NO. OIT-270-P-13-17

VERIFY SCALES
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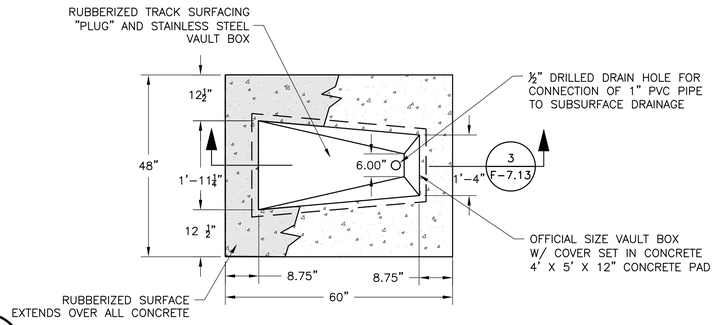
REGISTERED 548 ROBERT HARDING OREGON 05/31/15 LANDSCAPE ARCHITECT

SHEET
F-7.12
FIELD EVENT DETAILS

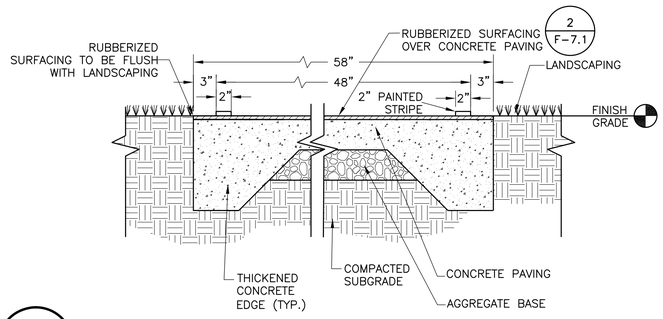
Drawing name: K:\Files\Current Project Files\Oregon Institute of Technology\Drawings\F-7.12 Field Event Details.dwg
Plot Date: Jan 27, 2015 - 4:23pm

AUSLAND PROJECT NO: 14-0708



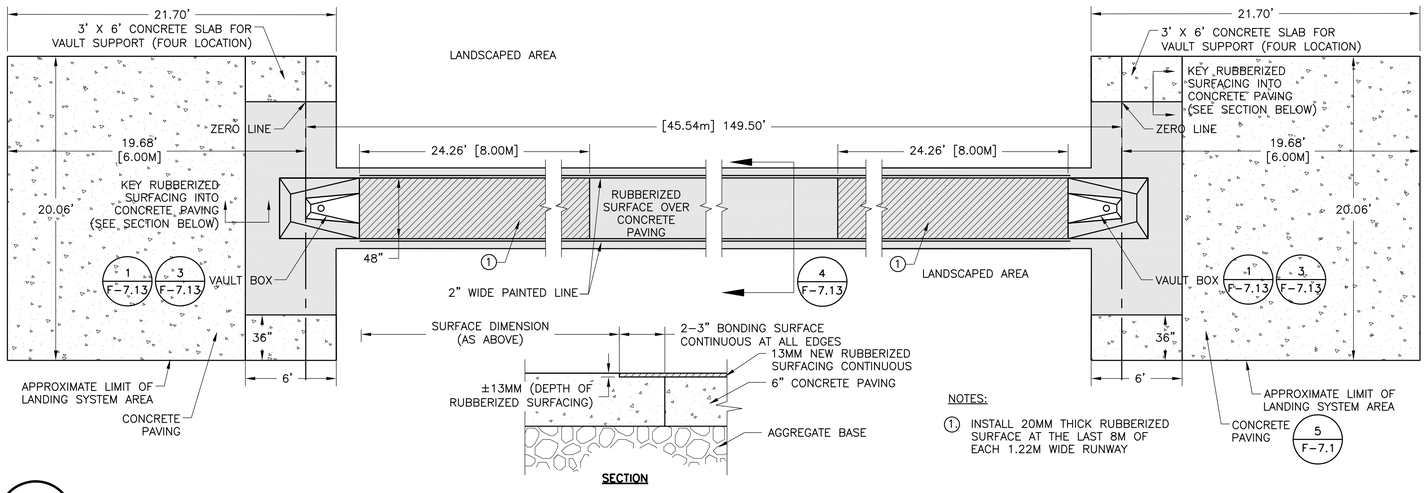
1 F-7.13 POLE VAULT BOX-PLAN VIEW

NOT TO SCALE



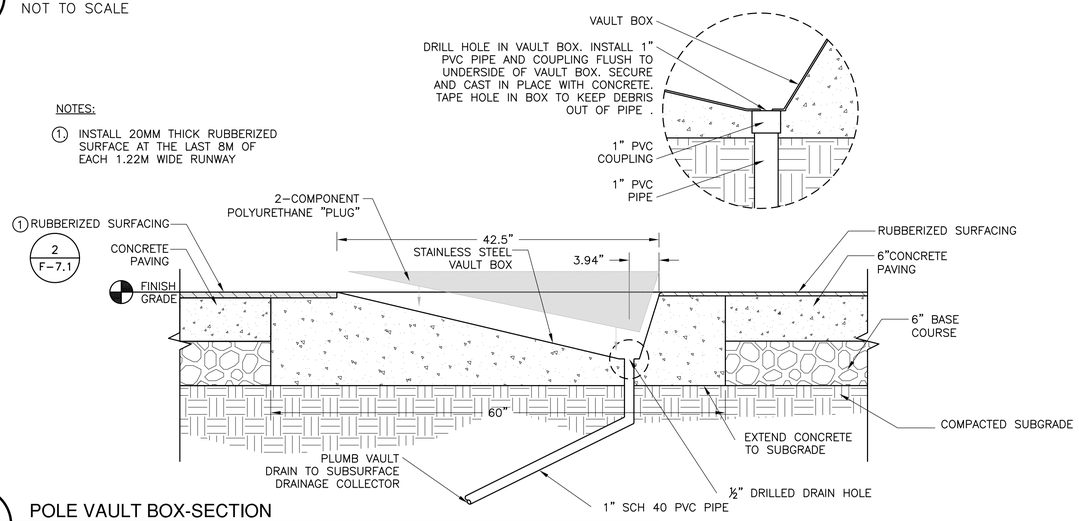
4 F-7.13 POLE VAULT RUNWAY

NOT TO SCALE



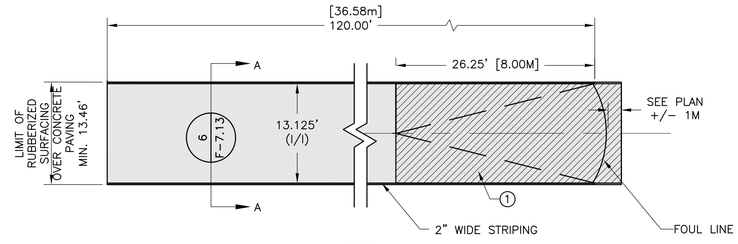
2 F-7.13 POLE VAULT-PLAN VIEW

NOT TO SCALE



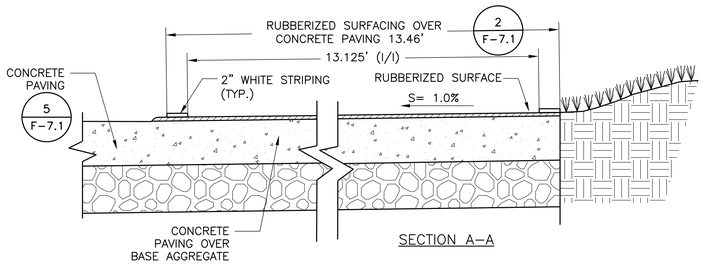
3 F-7.13 POLE VAULT BOX-SECTION

NOT TO SCALE



5 F-7.13 JAVELIN RUNWAY-PLANVIEW

NOT TO SCALE



6 F-7.13 JAVELIN RUNWAY SECTION

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Director Decision Date: N.A.
First Submittal Date: 01-07-2015
Second Submittal Date: 01-28-2015
City Approval Date:
By: By: By:
Drawn By: CPW, JS
Designed By: EJG
Checked By: EJG, RSH
Approved:
Rev 1 Rev 2 Rev 3 As-Built

OREGON TECH TRACK AND SOCCER PROJECT
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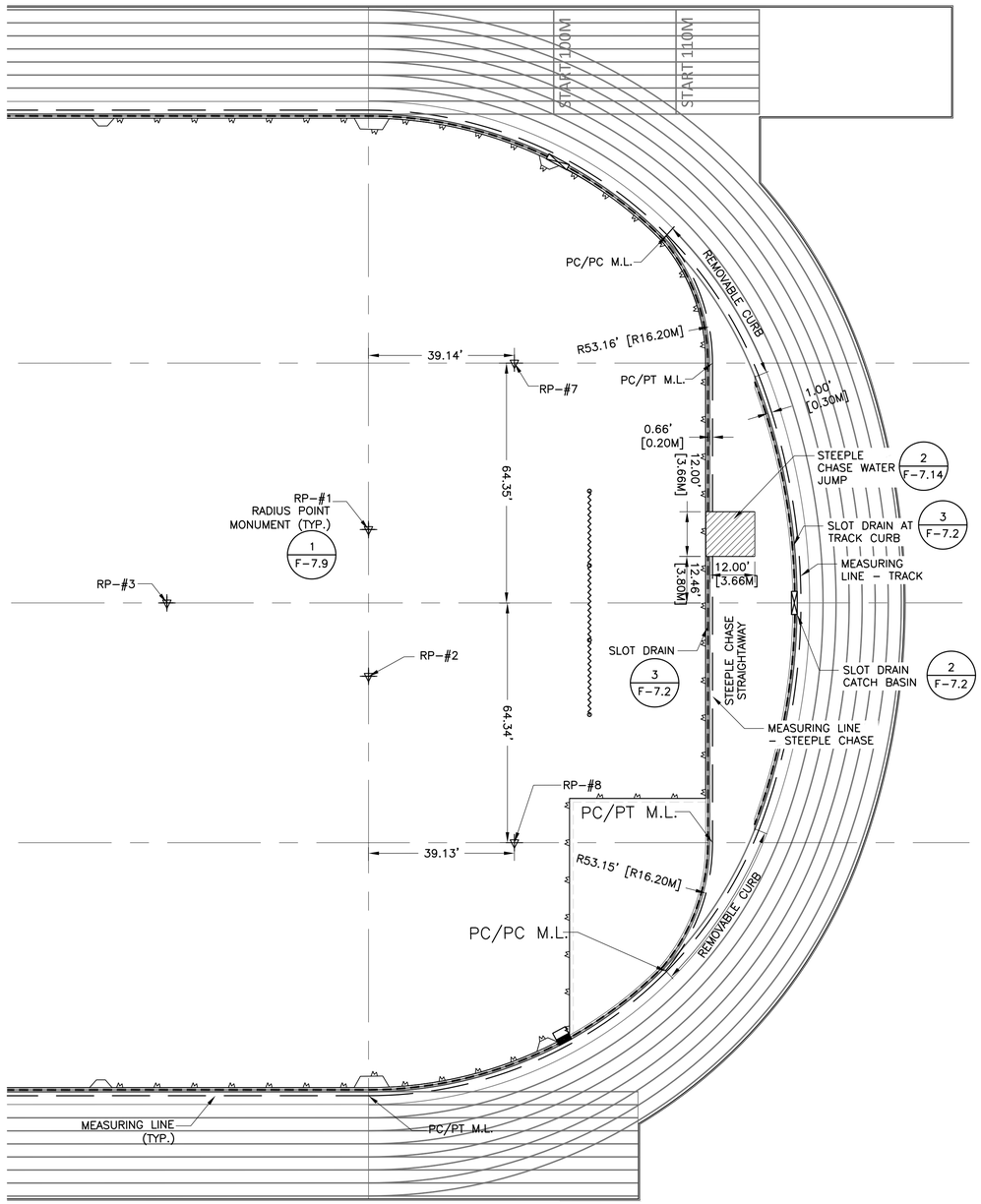
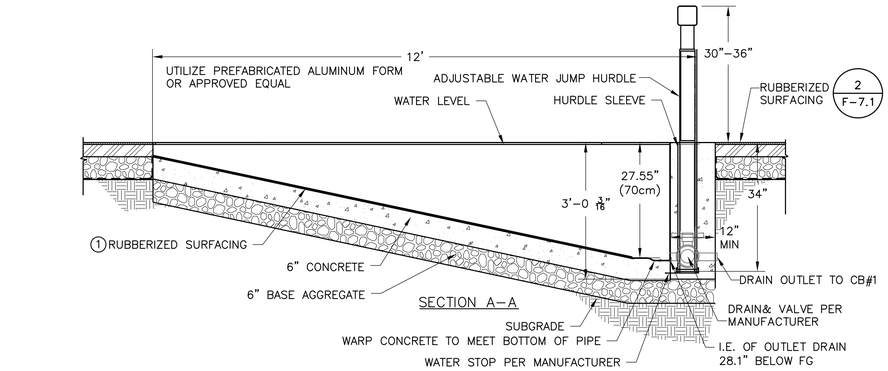
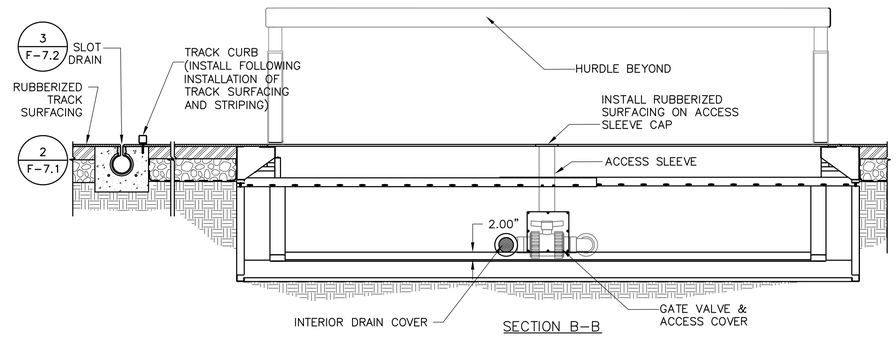
SHEET
F-7.13
FIELD EVENT
DETAILS

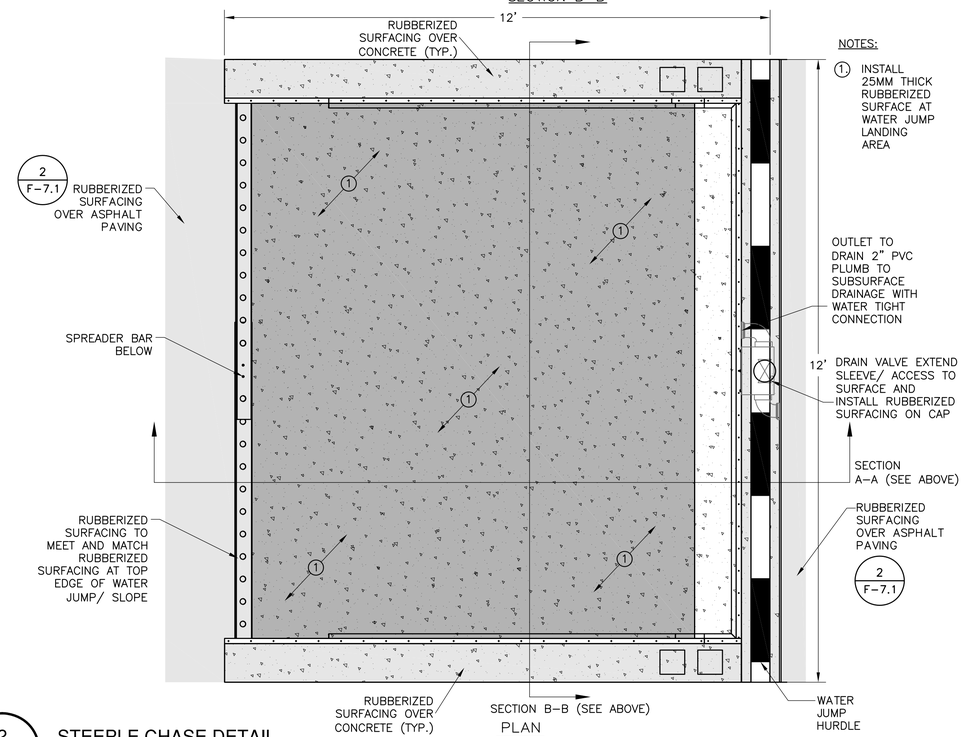
Drawing name: K:\Files\Current Project Files\Oregon Institute of Technology\Drawings\F-7.13 Field Event Details.dwg
Plot Date: Jan 28, 2015 - 11:59am



1 / F-7.14 STEEPLE CHASE LAYOUT PLAN
NOT TO SCALE







2 / F-7.14 STEEPLE CHASE DETAIL
NOT TO SCALE

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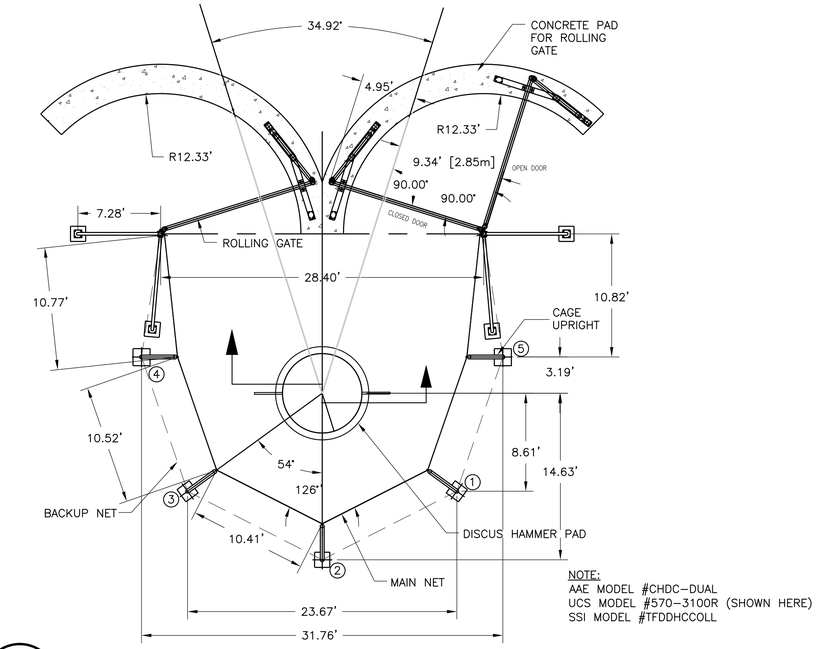
REGISTERED 548 ROBERT HARDING OREGON 05/31/15 LANDSCAPE ARCHITECT

SHEET
F-7.14
FIELD EVENT DETAILS

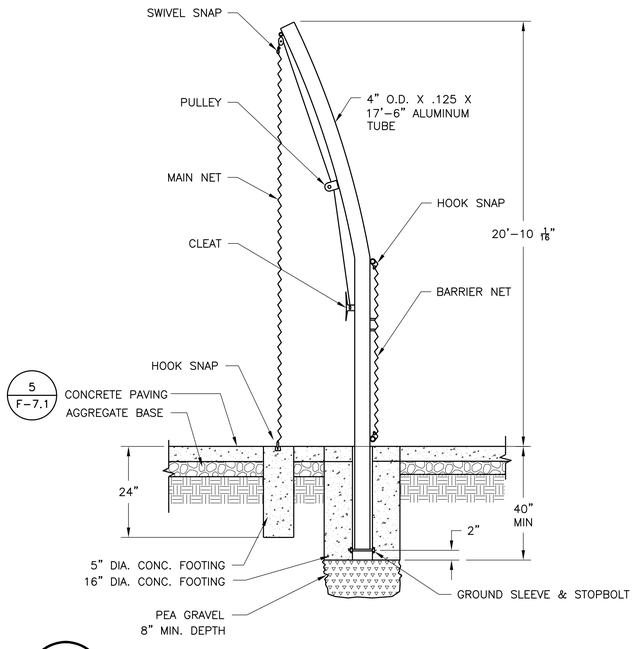
Drawing name: K:\Files\Current Project Files\Oregon Institute of Technology\Drawings\F-7.14 Field Event Details.dwg
Plot Date: Jan 02, 2015 - 3:50pm

AUSLAND PROJECT NO: 14-0708



1 / F-7.15 DISCUS & HAMMER CAGE PAD & CAGE

NOT TO SCALE



2 / F-7.15 DISCUS CAGE UPRIGHT

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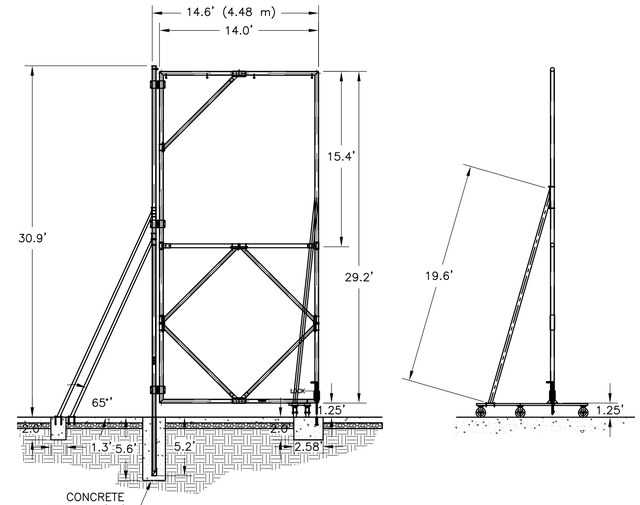
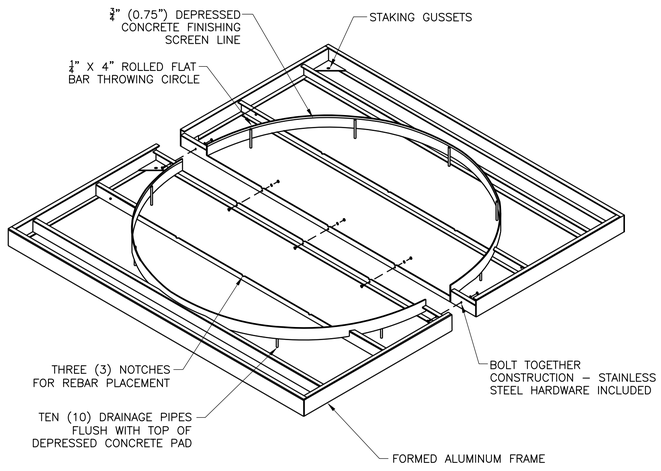


3 / F-7.15 DISCUS-HAMMER ROLLING GATE

NOT TO SCALE



4 / F-7.15 THROW FORM SYSTEM (F.O.I.C.)

NOT TO SCALE

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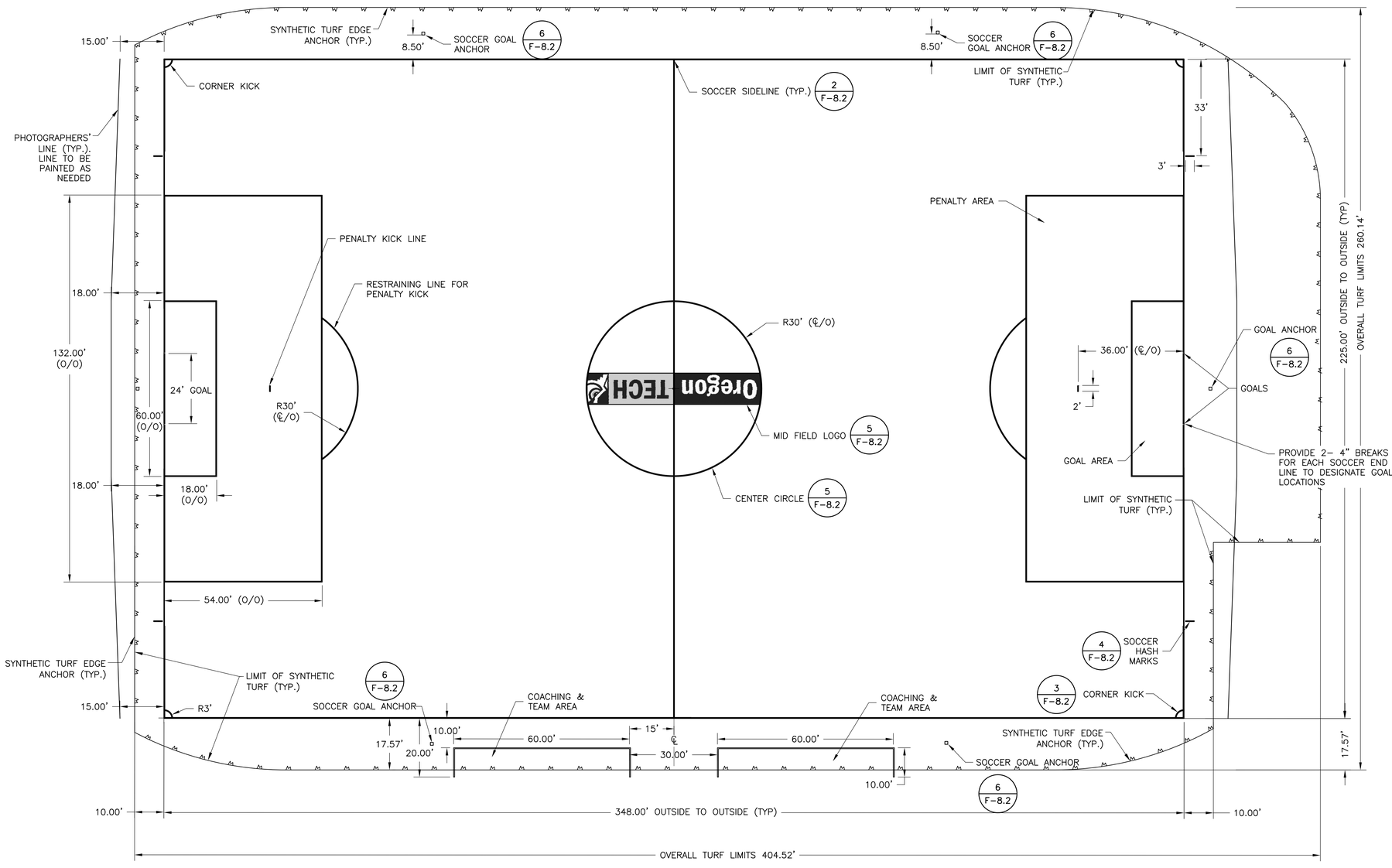
05/31/15

SHEET
F-7.15
FIELD EVENT DETAILS

Drawing name: K:\Files\Current Project Files\Oregon Institute of Technology\Drawings\F-7.15 Field Event Details.dwg
Plot Date: Jan 05, 2015 - 1:52pm



1 / F-8.1 SOCCER LAYOUT & MARKING PLAN

SCALE 1"=20'

SOCCER LAYOUT NOTES

1. CONTRACTOR SHALL VERIFY ALL DIMENSIONS. ALL LINE WORK IS TO BE LAID OUT WITH A TOLERANCE OF 1/4 INCH.
2. ALL SOCCER LINES ARE 4 INCH WHITE INLAID TURF AS DIMENSIONED ON SOCCER LAYOUT PLAN.
3. THE SOCCER GOAL AREA IS 18 FEET BY 60 FEET. REFER TO PLAN FOR LOCATION.
4. THE SOCCER PENALTY AREA IS 54 FEET BY 132 FEET.
5. THE PENALTY MARK IS A 2 FOOT LINE, 4 INCHES WIDE, 36 FEET FROM THE END LINE AND CENTERED ON THE GOAL. THE RESTRAINING LINE FOR PENALTY KICK AN ARC 30 FEET FROM THIS MARK OUTSIDE OF THE PENALTY AREA. REFER TO PLAN FOR LOCATION.
6. THE HALFWAY LINE FOR THE SOCCER FIELD IS A 4 INCH WHITE INLAID LINE WITH A CIRCLE, 30 FEET IN RADIUS IN THE CENTER OF THE FIELD. THE RADIUS POINT OF THE MIDFIELD CIRCLE WILL BE INLAID WHITE DOT WITH A 9 INCH DIAMETER.
7. THE CORNERS OF THE SOCCER FIELD SHALL HAVE A 3 FOOT RADIUS IN WHITE TURF DESIGNATING THE CORNER KICK AREA. THE HASH MARK IS A 3 FOOT LINE, 4 INCHES WIDE, 33 FEET FROM THE SIDE LINE AND EXTENDS AWAY FROM THE FIELD OF PLAY.
8. ALL MARKINGS BEYOND LIMIT OF SYNTHETIC TURF SHALL BE PAINTED ON RUBBERIZED SURFACE.

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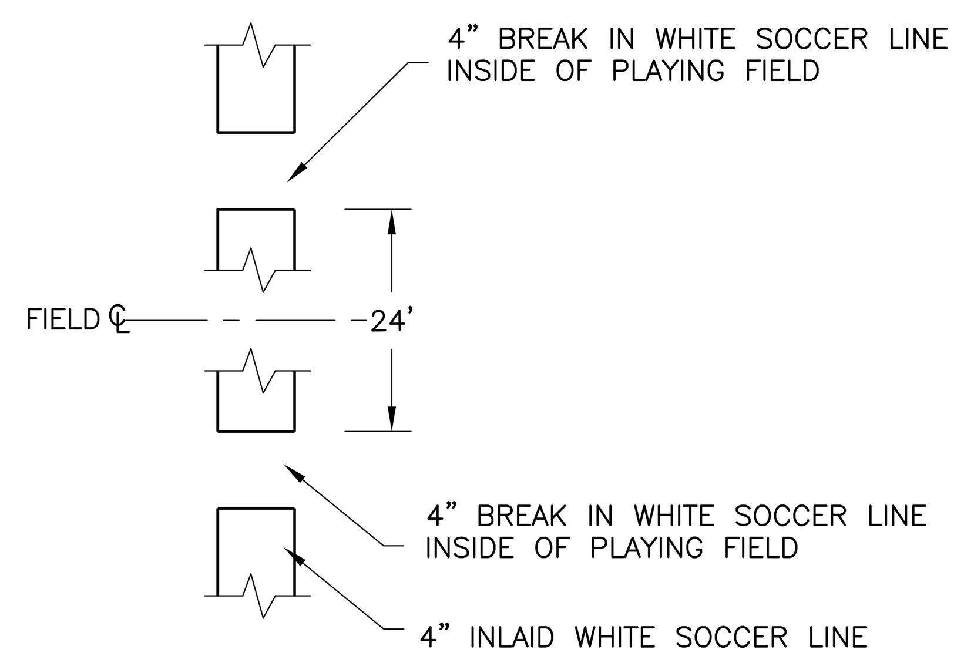
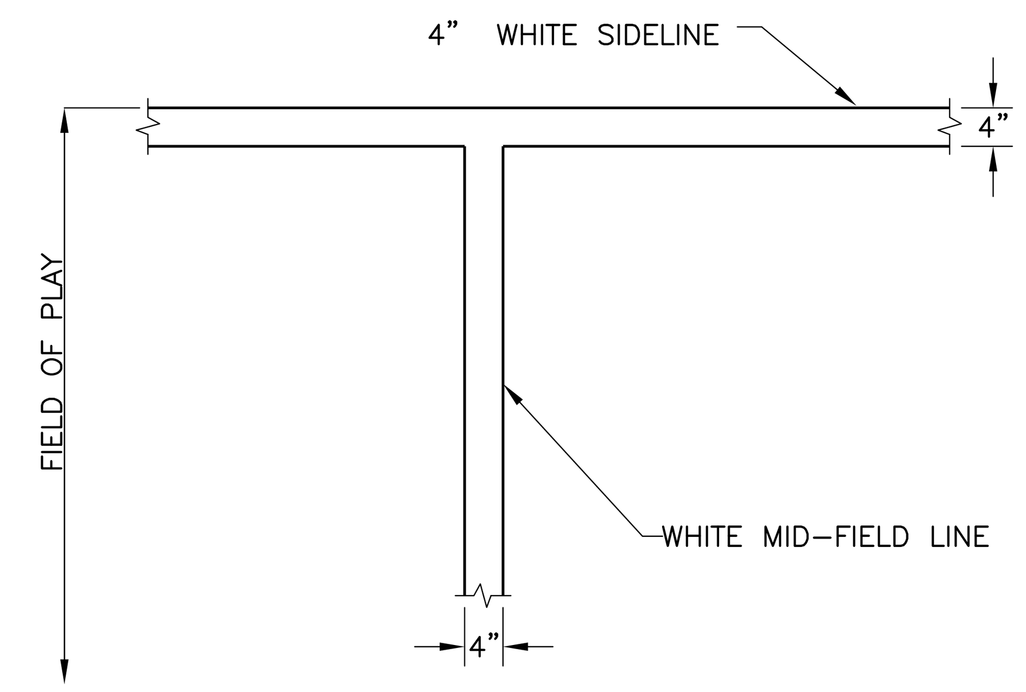
SHEET
F-8.1
SOCCER LAYOUT & MARKING PLAN

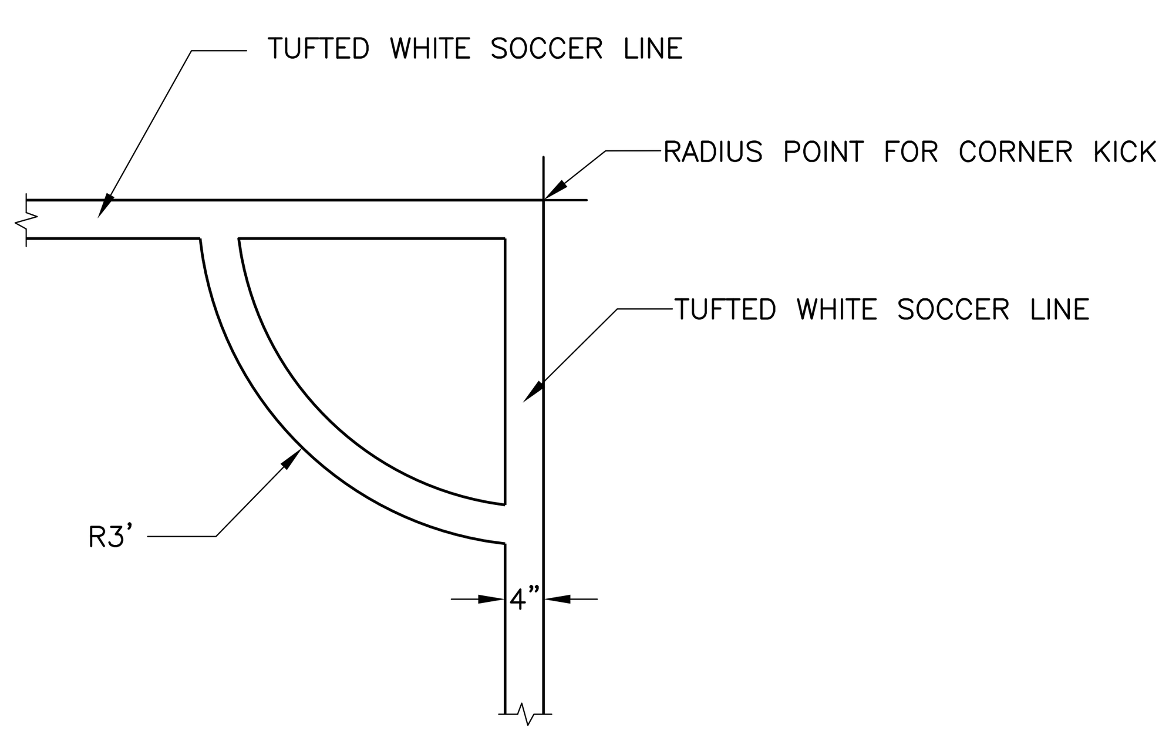
Drawing name: K:\Files\Current Project Files\Oregon Institute of Technology\Drawings\F-8.1 SOCCER LAYOUT & MARKING Plan.dwg
Plot Date: Jan 05, 2015 - 1:07pm



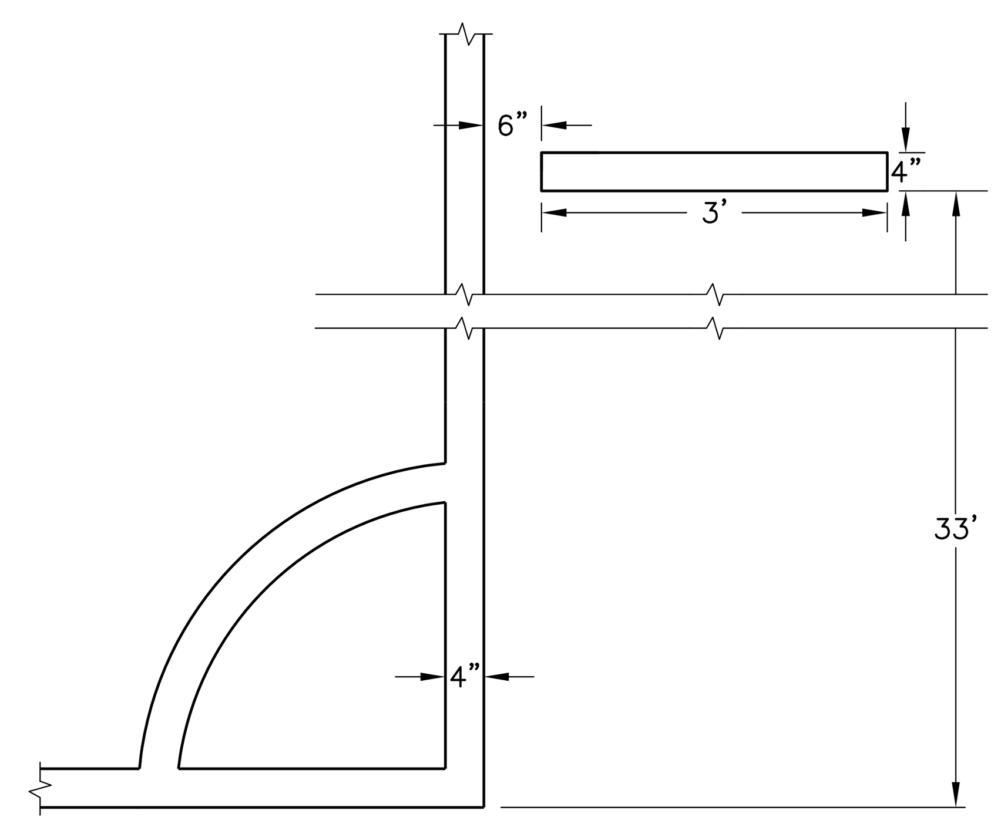
1 F-8.2 SOCCER GOAL ALIGNMENT SQUARES
NOT TO SCALE



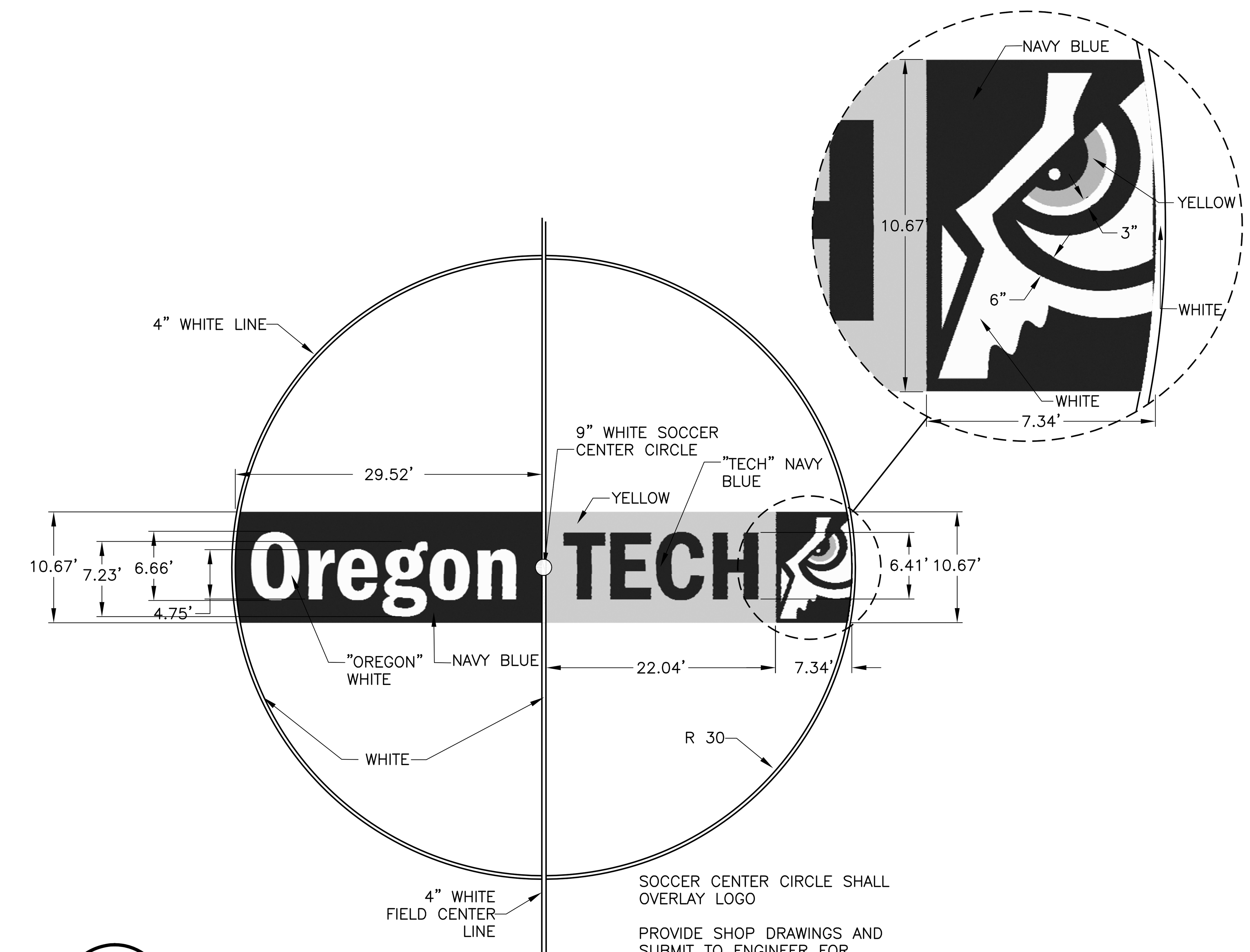
2 F-8.2 SOCCER SIDELINE
NOT TO SCALE



3 F-8.2 CORNER KICK DETAIL
NOT TO SCALE



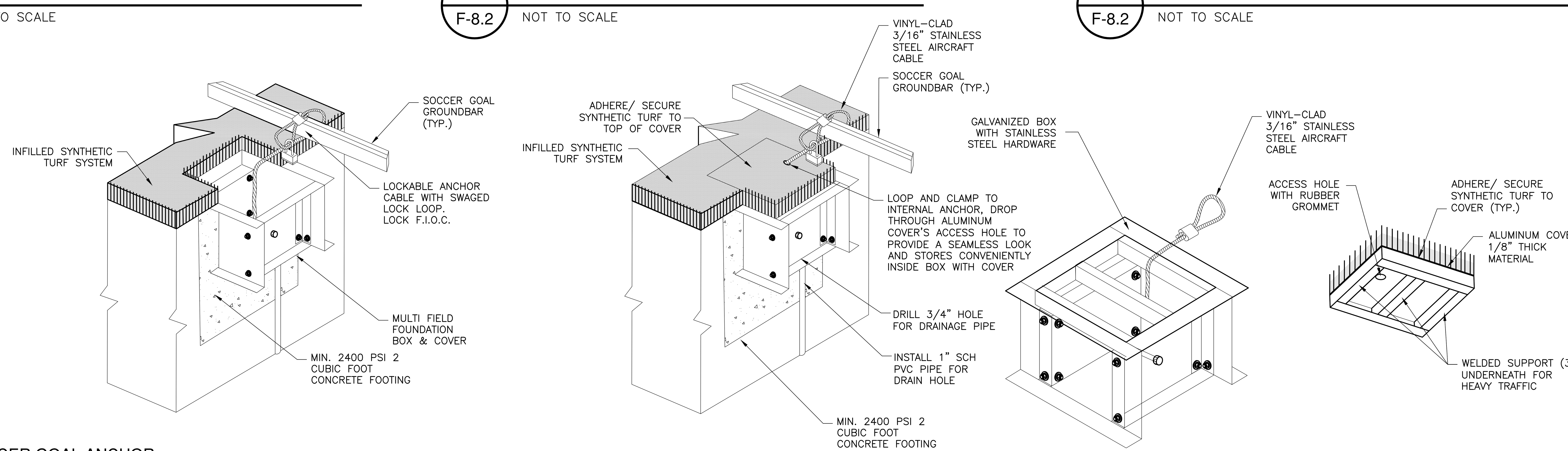
4 F-8.2 SOCCER HASH MARKS
NOT TO SCALE



SOCCER CENTER CIRCLE SHALL OVERLAY LOGO

PROVIDE SHOP DRAWINGS AND SUBMIT TO ENGINEER FOR APPROVAL.

5 F-8.2 MID-FIELD LOGO
NOT TO SCALE



6 F-8.2 SOCCER GOAL ANCHOR
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Approved:	City Approval Date:		As-Built

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SHEET
F-8.2
SOCCER DETAILS

Drawing name: K:\Files\Current Project Files\Oregon Institute of Technology\Drawings\F-8.2 Soccer Details.dwg
Plot Date: Jan 05, 2015 - 1:05pm

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