
**PITTSBURG UNIFIED SCHOOL DISTRICT
PUSD MARTIN LUTHER KING JR JUNIOR HIGH SCHOOL
RUNNING TRACK AND FIELD ALTERATIONS**

**BID ADDENDUM NO. 1
November 6, 2025**

PROJECT: **Martin Luther King Jr Junior High School Running Track & Field Alterations**
2012 Carion Court, Pittsburg, CA 94565

OWNER: Pittsburg Unified School District
3200 Loveridge Road, Pittsburg, CA 94565

Notice is hereby given to all prospective bidders that plans and specifications on the subject project are modified as hereinafter set forth. This Addendum shall be attached to and form a part of the plans and specifications. All bidders must acknowledge receipt of this addendum on the Bid Form. In case of difference with previous addenda or communications, this addendum takes precedence.

It is the responsibility of all bidders to notify all subcontractors from whom they request bids and from whom they accept bids of all changes contained in this addendum.

PROJECT MANUAL

1. Item No. PM-1

Reference: N/A
Attachment: Mandatory Pre-Bid Conference & Walkthrough Sign-In Sheet
Description: Pre-bid conference sign-in sheet

2. Item No. PM-2

Reference: Section 00 01 10
Attachment: Table of Contents
Description: Add "Section 32 93 00, Planting" to Division 32 of Table of Contents

3. Item No. PM-3

Reference: Section 00 01 20
Attachment: List of Schedules
Description: Replace Section 00 01 20 for revised project timeline

4. Item No. PM-4

Reference: Section 00 11 16
Attachment: Notice to Bidders
Description: Replace Section 00 11 16 for revised instructions to bidders

5. Item No. PM-6

Reference: Section 32 84 00
Attachment: Planting Irrigation Specifications
Description: Add "Section 32 84 00, Irrigation" to Project Manual

6. Item No. PM-5

Reference: Section 32 93 00

Attachment: Planting Specifications

Description: Add "Section 32 93 00, Planting" to Project Manual

DRAWINGS

1. ITEM NO. 01

Reference: IR1.0

Attachment: IR1.0 – Irrigation Layout

Description: Replace IR1.0 with full irrigation drawings.

2. ITEM NO. 02

Reference: IR1.1

Attachment: IR1.1 – Irrigation Details

Description: Replace IR1.1 with full irrigation drawings.

3. ITEM NO. 03

Reference: IR1.2

Attachment: IR1.2 – Irrigation Notes

Description: Replace IR1.2 with full irrigation drawings.

4. ITEM NO. 04

Reference: IR1.3

Attachment: IR1.3 – MAWA - Water Use Calculations

Description: Replace IR1.3 with full irrigation drawings.

RFI REPONSES:

1. **Question/Issue:** Sheet A1.02/Keynote 1, "Please provide the type of sod required for installation."

Response: Sod & hydroseed mixes shall meet, or be equal to, the 90/10 Fescue/Blue Mix below:

Grass Seed Mixture

Purity	Variety/Kind	Germination	Origin
32.72	Unitus Tall Fescue	85%	OR
32.68	Cayenne Tall Fescue	85%	OR
24.07	Guardian 41 Tall Fescue	85%	OR
09.92	SR2100 Kentucky Bluegrass	85%	OR
00.17%	Other Crop Seed		
00.44%	Inert Matter		
00.00%	Other Weeds		

Noxious Weed Seeds: None Found

Sample Product Source:	Ewing Irrigation Products Inc 30928 Antonio Street Hayward, CA 94544	Lot No. L68-19-2734
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2. **Question/Issue:** Sheet A1.02, "Please provide Hydroseed seed composition and spec for the finish product Hydroseed application at the grass field areas."

Response: Please see response to Question #1 & Addendum #1 Specification Section 32 93 00 Planting for hydroseed composition & application.

END OF BID ADDENDUM ITEMS

ATTACHMENTS:**Project Manual:**

- **Mandatory Pre-Bid Conference & Walkthrough Sign-In Sheet**
- **Section 00 01 10 Table of Contents**
- **Section 00 01 20 List of Schedules**
- **Section 00 11 16 Notice to Bidders**
- **Section 32 84 00 Planting Irrigation**
- **Section 32 93 00 Planting**

Project Drawings:

- **IR1.0 – Irrigation Layout**
- **IR1.1 – Irrigation Details**
- **IR1.2 – Irrigation Notes**
- **IR1.3 – MAWA - Water Use Calculations**



Pre-Bid Conference & Walkthrough Sign-In Sheet

Date: Wednesday, 10/29/2025 @ 2:30 PM (PST) at

MLK, Jr. Junior High School, 2012 Carion Court, Pittsburg, CA

MLK, Jr. JHS – Running Track & Field Alterations Project

Print Name	Signature	Company Name	Email Address	Phone #
Teena Singley		Giant Construction	bids@giantsc.com	510/912-8750
J. Alexander C. TOHEED ASGHAR		MBC enterprises Inc SABOO INC.	MBCenter@kes-inc TOHEED@SABOOINC.COM	310/213/9717 925-775-9658
Joe Garcia		Joe's LANDSCAPE & CONCRETE INC	Joe@Joesc.com	209-597-2135
John Belo		JLC	john@jpsc.com	209 406 9006
Carlos Jimenez		Frontline General Engineering	Estimating@frontrangeconstruction.com	(209) 673-7690
Evan Erzmann		KYA	northestimating@thekeygroup.com	916-661-1329
HUAN TRUONG		DL FOLK CONSULT	HTruong@dlfolk.com	510 887-6500
KEITH ANDERSON		McGUIRE & HESTER	estimating@mcguireandhester.com	510 632-7676
Alex Espurza		VG Builders Company	Bids@vgbuilders.ILC	(707) 852-5046
MELISSA MCKENZIE		PLUM ARCHITECTS	MELISSA@PLUMARCHITECTS.COM	415-314-7812
RANDY C. HOON		ROBERT A. BOTHAWAY INC.	estimating@bothaway.com	408-279-2227
E. Keith HOLTZANDER		RUSD	KHOLTZANDER@PITTSBURGVUSD.NET	925-473-2428
KATI MEJIA		RUSD	KMEJIA@PITTSBURGVUSD.NET	925-473-2368
SEAN VANDERMEY		RUSD	VANDERMEY@PITTSBURGVUSD.NET	925-473-2438



Pre-Bid Conference & Walkthrough

Wednesday, 10/29/2025 @ 2:30 PM (PDT)

MLK, Jr. Junior High School, 2012 Carion Court, Pittsburg, CA

MLK, Jr. JHS – Running Track & Field Alterations Project

CONFERENCE AGENDA –

I. Introduction of Project Team Members:

Sean Vandermeij – PUSD Director of Facilities Management
Keith Holtslander – PUSD Project Manager
Donna Fentanes – PUSD Facilities Specialist
Kati Mejia – PUSD Special Projects Accountant
Matthew Belasco – PUSD Director of MO&T Dept.
Mike Barros – PUSD Supervisor of M&O Dept.
Benjamin Trotter – PUSD Supervisor of M&O Dept.
Roberta Wahl – PLUM Architects
Melissa Mackenzie – PLUM Architects
TBD – PUSD Project Inspector
TBD – Geotechnical Observations & Materials Testing Contact

II. Schedule:

- A. Friday, November 14, 2025: Pre-Bid RFI's due by 5:00 PM (PST). Pre-Bid RFI's are to be submitted in writing to Melissa Mackenzie at melissa@plumarchitects.com, with a copy to Keith Holtslander at kholtlander@pittsburgusd.net.
- B. **Thursday, November 20, 2025 @ 2:00 PM (PST): Bids Due**
- C. December 13, 2025: Notice of Award
- D. December 22, 2025: Notice to Proceed
- E. February 23, 2026: On-Site Construction Work Start
- F. July 31, 2026: On-Site Construction Work Completion
- G. August 28, 2026: Contract Completion

III. Requirements of the Bid:

- A. Preparation of Bid Forms – Complete all bid forms; the bids must be signed in the name of the bidder, and submitted in a sealed envelope bearing the name of the bidder and the name of the Project.
- B. Bid Security – Each bid shall be accompanied by a Bid Bond, or a Certified Check or Cashier's Check made payable to the District as described in the Contract Documents.
- C. Designated Subcontractors List, Site Visit Certification and Non-Collusion Declaration are required to accompany Bid.
- D. Delivery of Bids – **2:00 PM (PST) on Thursday, November 20, 2025.** Bids will be received at the **District Site Support Services Center, 3200 Loveridge Road, Pittsburg, CA 94565.**
- E. Insurance Requirements – See General Conditions 00 72 13 Article 13 for Insurance and Bonds, and Special Conditions, 00 73 13, Article 6 for Insurance Policy Limits.

- F. Fingerprinting Requirements – See Special Conditions, Article 9 for the specifics.
- G. Note that the District's PSA with the Local Trades Council will be applicable to this Project if the bid dollar amount total is \$1M or higher.

IV. Site Walk:

- A. Area of Work and Site Access

V. Questions and Answers:

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<u>Division 0</u>	<u>Section</u>	<u>Title</u>
	00 01 01	Project Title Page
	00 01 10	Table of Contents
	00 01 15	List of Drawings and Tables
	00 01 20	List of Schedules

Solicitation

<u>Division 0</u>	<u>Section</u>	<u>Title</u>
	00 11 16	Notice to Bidders

Instructions for Procurement

<u>Division 0</u>	<u>Section</u>	<u>Title</u>
	00 21 13	Instructions to Bidders
	00 21 13.1	Bidder Information and Forms

Available Information

<u>Division 0</u>	<u>Section</u>	<u>Title</u>
	00 31 19	Existing Conditions

Procurement Forms and Supplements

<u>Division 0</u>	<u>Section</u>	<u>Title</u>
	00 41 13	Bid Form and Proposal
	00 43 13	Bid Bond
	00 43 36	Designated Subcontractors List
	00 45 01	Site Visit Certification
	00 45 19	Non-Collusion Declaration
	00 45 19.01	Iran Contracting Act Certification
	00 45 26	Workers' Compensation Certification
	00 45 46.01	Prevailing Wage and Related Labor Requirements Certification
	00 45 46.02	Disabled Veteran Business Enterprise Participation Certification
	00 45 46.03	Drug-Free Workplace Certification
	00 45 46.04	Tobacco-Free Environment Certification
	00 45 46.05	Hazardous Materials Certification
	00 45 46.06	Lead-Based Materials Certification
	00 45 46.08	Criminal Background Investigation/Fingerprinting Certification
	00 45 46.09	Buy American Certification
	00 45 49	Registered Subcontractors List
	00 45 90	Post Bid Interview

Contracting Forms and Supplements

<u>Division 0</u>	<u>Section</u>	<u>Title</u>
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	00 52 13	Agreement Form – Stipulated Sum (Single-Prime Contract)
	00 55 00	Notice to Proceed
	00 56 00	Escrow Bid Documentation
	00 57 00	Escrow Agreement in Lieu of Retention

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	00 61 13.16	Payment Bond
	00 63 40	Allowance Expenditure Directive Form
	00 63 57	Proposed Change Order Form
	00 63 63	Change Order Form
	00 65 19.26	Agreement and Release of Any and All Claims
	00 65 36	Guarantee Form

Conditions of the Contract

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	00 72 13	General Conditions – Stipulated Sum (Single-Prime Contract)
	00 73 13	Special Conditions
	00 73 56	Hazardous Materials Procedures and Requirements

General Requirements

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Price and Payment Procedures

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	01 22 00	Alternatives and Unit Prices
	01 25 13	Product Options and Substitutions
	01 26 00	Changes in the Work
	01 29 00	Application for Payment and Conditional and Unconditional Waiver and Release Forms

Administrative Requirements

<u>Division 1</u>	<u>Section</u>	<u>Title</u>
	01 31 19	Project Meetings
	01 32 13	Scheduling of Work
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	01 35 13.23	Site Standards

Quality Requirements

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	01 42 13	Abbreviations and Acronyms
	01 42 16	Definitions
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	01 43 00	Materials and Equipment
	01 45 00	Quality Control

Temporary Facilities and Controls

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	01 50 13	Construction Waste Management and Disposal
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Execution and Closeout Requirements

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	01 73 29	Cutting and Patching
	01 76 00	Alteration Project Procedures
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	01 78 23	Operation and Maintenance Data
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	01 78 39	Record Documents

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<u>Division 3</u>	<u>Section</u>	<u>Title</u>
	03 20 00	Concrete Reinforcing
	03 30 01	Site Concrete

Wood, Plastics & Composites

<u>Division 6</u>	<u>Section</u>	<u>Title</u>
	06 10 00	Rough Carpentry

Specialties

<u>Division 10</u>	<u>Section</u>	<u>Title</u>
	10 14 00	Identifying Devices

Earthwork

<u>Division 31</u>	<u>Section</u>	<u>Title</u>
	31 10 00	Site Preparation and Plant Protection
	31 20 00	Earthwork
	31 23 33	Trenching & Backfill
	31 24 00	Erosion & Sedimentation Controls

Exterior Improvements

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	32 12 16	Asphalt Paving & Surfacing
	32 15 41	Stabilized Aggregate Surfacing
	32 84 00	Irrigation
	32 93 00	Planting

Utilities

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	33 40 00	Storm Drainage
	33 40 10	Surface Drainage Systems

END OF SECTION

LIST OF SCHEDULES

- 02/14/25: A/E Team Proposals Due
- 02/26/25: A/E Team Proposal Results finalized information due @ 10:00 AM for 03/12/25 School Board Meeting
- 03/12/25: School Board presented Item on Design Contract with A/E Team (Information & Action to Award)
- 03/17/25: Formal PO Issued to A/E Team
- 03/24/25: Start of Design Work & Contract Docs. Preparation
- 07/11/25: Submit Plans & Specs. to DSA for Review & Approval
- 09/10/25: Plans & Specs. Receive Approval by DSA
- 10/22/25: School Board presented Item on Approval to Advertise for Bid
- 10/24/25 & 10/31/25: Advertise for Bid
- 10/27/25: Contract Bidding Documents Available to Bidders
- 10/29/25: Pre-Bid Conference & Walkthrough @ 2:30 (PST) at MLK, Jr. Junior High School
- 11/14/25: Final Due Date for Pre-Bid RFI's @ 5:00 PM (PST)
- **11/20/25: Bids Due @ 2:00 PM (PST) at District Site Support Services Center**
- 11/25/25: Bid Protest Period Ends @ 2:30 PM (PST)
- 11/26/25: Bid Results & Contract Award finalized information due @ 10:00 AM (PDT) for 12/10/25 School Board Meeting
- 12/10/25: School Board Approval & Contract Award
- 12/11/25: Notice of Award & Contract Issued
- 12/22/25: Notice to Proceed Issued (tentative pending Contract turnaround time)
- 02/23/26: On-Site Construction Work Start Date
- 07/31/26: On-Site Construction Completion Date
- 08/28/26: Contract Completion Date
- 09/23/26 or 10/07/26: School Board Approval to file Notice of Completion

END OF DOCUMENT

NOTICE TO BIDDERS

1. Notice is hereby given that the governing board ("Board") of the Pittsburg Unified School District ("District") will receive sealed bids for the following project, Bid No. **26-001**, Bid Package **MLK, Jr. JHS – Running Track & Field Alterations Project** ("Project" or "Contract"):

MLK, Jr. JHS – Running Track & Field Alterations Project

2. The Project consists of:

Construction of a decomposed granite running track w/ concrete curbs and a natural grass field, a paved ADA Compliant walking path, irrigation system, drainage system, ADA Compliance items and minor demolition of existing improvements.

3. To bid on this Project, the Bidder is required to possess one or more of the following State of California contractors' license(s):

A or B

The Bidder's license(s) must remain active and in good standing throughout the term of the Contract.

4. To bid on this Project, the Bidder is required to be registered as a public works contractor with the Department of Industrial Relations pursuant to the Labor Code. The Bidder's registration must remain active throughout the term of the Contract.
5. Contract Documents will be available on or after **Monday, October 27, 2025** for review, and/or purchase, at ABC Imaging, 1381 Franquette Avenue, Concord, CA 94520. Phone 925-674-0900, Fax 925-674-0993. In addition, Contract Documents are available for bidders' review at the following builders' exchanges:

- A. Bay Area Builder's Exchange (510) 483-8880
- B. Construction Bid Board (800) 424-3996
- C. Dodge Data & Analytics (877) 958-5062
- D. Peninsula Builders Exchange (650) 591-4486
- E. Sacramento Builders Exchange (916) 442-8991
- F. Solano-Napa Builders Exchange (707) 255-2515
- G. Builders of Santa Clara (408) 727-4000
- H. San Francisco Builders Exchange (415) 282-8220
- I. Marin Builders Exchange (415) 462-1220
- J. Builders Exchange of Stockton (209) 478-1005

6. Contract Documents, in hard copy format, are available for purchase for Two Hundred Dollars (\$200.00), or in electronic format for Fifty Dollars (\$50.00), each set at ABC Imaging. The fee is non-refundable. Payment is to be made directly to ABC Imaging. Contract Documents will also be available on or after **Monday, October 27, 2025** for review electronically on the PUSD Website under the Facilities Planning & Management Department tab.
7. Sealed bids will be received until **2:00 PM (PST), Thursday, November 20, 2025,** at **District Site Support Services Center, 3200 Loveridge Road, Pittsburg, CA 94565,** at or after which time the bids will be opened and publicly read aloud. Any bid that is submitted after this time shall be nonresponsive and returned to the bidder. Any claim by a bidder of error in its bid must be made in compliance with section 5100 et seq. of the Public Contract Code.
8. Pursuant to Public Contract Code section 20111.6, only prequalified bidders will be eligible to submit a bid for contracts \$1 million or more using or planning to use state bond funds. Any bid submitted by a bidder who is not prequalified shall be non-responsive and returned unopened to the bidder. Moreover, any bid listing subcontractors holding C-4, C-7, C-10, C-16, C-20, C-34, C-36, C-38, C-42, C-43 or C-46 licenses, if used, who have not been prequalified, shall be deemed nonresponsive and will not be considered. A prequalification application can be obtained from Ms. Donna Fentanes at dfentanes@pittsburgusd.net.
9. All bids shall be on the form provided by the District. Each bid must conform and be responsive to all pertinent Contract Documents, including, but not limited to, the Instructions to Bidders.
10. A bid bond by an admitted surety insurer on the form provided by the District, cash, or a cashier's check or a certified check, drawn to the order of the Pittsburg Unified School District, in the amount of ten percent (10%) of the total bid price, shall accompany the Bid Form and Proposal, as a guarantee that the Bidder will, within seven (7) calendar days after the date of the Notice of Award, enter into a contract with the District for the performance of the services as stipulated in the bid.
11. A mandatory pre-bid conference and site visit will be held on **Wednesday, October 29, 2025, at 2:30 PM (PST)** at **MLK, Jr. Junior High School, 2012 Carion Court, Pittsburg, CA 944565.** Failure to attend or tardiness will render bid ineligible.
12. The successful Bidder shall be required to furnish a 100% Performance Bond and a 100% Payment Bond if it is awarded the Contract for the Work.
13. The successful Bidder may substitute securities for any monies withheld by the District to ensure performance under the Contract, in accordance with the provisions of section 22300 of the Public Contract Code.

14. The Contractor and all Subcontractors under the Contractor shall pay all workers on all Work performed pursuant to this Contract not less than the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work as determined by the Director of the Department of Industrial Relations, State of California, for the type of work performed and the locality in which the work is to be performed within the boundaries of the District, pursuant to section 1770 et seq. of the California Labor Code. Prevailing wage rates are also available from the District or on the Internet at: <<http://www.dir.ca.gov>>.
15. This Project is subject to labor compliance monitoring and enforcement by the Department of Industrial Relations pursuant to Labor Code section 1771.4 and subject to the requirements of Title 8 of the California Code of Regulations. The Contractor and all Subcontractors under the Contractor shall furnish electronic certified payroll records directly to the Labor Commissioner weekly and within ten (10) days of any request by the District or the Labor Commissioner. The successful Bidder shall comply with all requirements of Division 2, Part 7, Chapter 1, Articles 1-5 of the Labor Code.
16. The District has entered into a Project Stabilization Agreement that is applicable to this Project. For questions or assistance concerning the Project Stabilization Agreement, contact Mr. Sean Vandermey @ 925-473-2438, or at 3200 Loveridge Road in Pittsburg, California 94565.
17. The District shall award the Contract, if it awards it at all, to the lowest responsive responsible bidder based on:
 - A. The base bid amount.
18. The Board reserves the right to reject any and all bids and/or waive any irregularity in any bid received. If the District awards the Contract, the security of unsuccessful bidder(s) shall be returned within sixty (60) days from the time the award is made. Unless otherwise required by law, no bidder may withdraw its bid for ninety (90) days after the date of the bid opening.

END OF DOCUMENT

SECTION 32 84 00

PLANTING IRRIGATION

PART 1 – GENERAL

1.1 DESCRIPTION

- A. Work included: Order and furnish all labor, materials, supplies, tools and transportation and perform all operations in connection with and reasonably incidental to complete installation of the automatic sprinkler irrigation systems as shown on the drawings. Items hereinafter are included as an aid to take off and are not necessarily a complete list of work items.

1. Trenching, stockpiling, excavation, backfill materials and refilling trenches.
2. Furnishing materials and installation for complete system including piping, backflow prevention assembly, valves, fittings, sprinkler heads, automatic controls and final adjustment of heads to insure complete and uniform coverage.
3. Line voltage connections to the irrigation controllers and low voltage control wiring from controllers to remote control valves.
4. Replacement of unsatisfactory materials.
5. Clean-up, inspection and approval.
6. All work of every description mentioned in the specification and/or addenda thereto, and all other labor, and materials reasonably incidental to the satisfactory completion of the work, including clean-up of the site, as directed by the Architect.
7. Tests.
8. Record drawings.

- B. Work not included:

1. Irrigation water stub-out
2. 120-volt A.C. electrical stub-out to controller location.
3. Irrigation piping in structure.
4. Electrical conduit in structure for 24-volt wire.

1.2 GENERAL REQUIREMENTS

- A. OSHA Compliance: All articles and services covered by this specification shall meet or exceed the safety standards established under the Federal Occupational Safety and Health Act of 1970, together with all amendments in effect as of the date of this specification.
- B. Codes and Standards: Comply with all applicable codes and standards.

1. All work and materials shall be in full accordance with the latest rules and regulations of the National Electric Code; the Uniform Plumbing Code, published by the Western Plumbing Officials Association; and other State or local laws or regulations. Nothing in these Drawings or Specifications is to be construed to permit work not conforming to these codes.
2. When the Specifications call for materials or construction of a better quality or larger size than required by above-mentioned rules and regulations, the provision of the Specifications shall take precedence over the requirements of the said rules and regulations.
3. The Contractor shall furnish without any extra charge any additional material and labor when required by the compliance with these rules and regulations, though the work may not be mentioned in these particular Specifications or shown on the Drawings.
4. The Contractor shall erect and maintain barricades, guards, warning signs, and lights as necessary or required by OSHA regulations for the protection of the public or workers.
5. Any existing buildings, equipment, piping, pipe covering sewers, sidewalks, landscaping, etc., damaged by the Contractor during the course of this work shall be replaced or repaired by the Contractor in a manner satisfactory to Architect and at Contractor's expense, and before final payment is made. The Contractor shall be responsible for damage caused by leaks in the piping systems being installed or having been installed by him. He shall repair, at his own expense, all damage so caused, in a manner satisfactory to the Architect.
6. The Contractor shall pay for all permits, licenses, and fees required.

1.3 SUPERVISION AND WORKMANSHIP

- A. The Contractor, personally or through an authorized and competent representative, shall supervise the work constantly, and shall as far as possible keep the same foreman and workers on the job from commencement to completion. The workmanship of the entire job must in every way be first class, and only experienced and competent workers will be allowed on the job.

1.4 LAYOUT OF WORK

- A. The Contractor shall stake out the irrigation system as shown on the Drawings. These areas shall be checked by the Contractor and Architect before construction is started. Any changes, deletions or additions shall be determined in this check.

1.5 INSTRUCTION

- A. After the system has been installed and approved, Contractor shall instruct the Owner's Representative in complete operation and maintenance of the irrigation system.

1.6 SUBMITTAL

- A. Submit catalog information on all materials which are to be used in the installation. Product and specified options must be highlighted on the catalog information. No substitution will be permitted without prior written approval by the Irrigation Consultant. Complete submittal approval must be obtained prior to construction.
- B. Record Drawings:
 - 1. The Contractor shall maintain in good order in the field office one complete set of black line prints of all sprinkler drawings which form a part of the contract, showing all water lines, sprinklers, valves, controllers and stub-outs. In the event any work is not installed as indicated on the Drawings, such work shall be corrected and dimensioned accurately from the building walls.
 - 2. All underground stub-outs for future connections and valves shall be located and dimensioned accurately from building walls on all record drawings.
 - 3. Upon completion of the work, obtain reproducible prints from Architect and neatly correct the prints to show the as-built conditions.

PART 2 - MATERIALS

2.1 PIPE AND FITTINGS

- A. Main lines (constant pressure) 3" and larger shall be polyvinylchloride (PVC) 1120-CL 200 with ring-tite connections; 2 1/2" and smaller shall be PVC 1120-Schedule 40 plastic pipe.
 - 1. Join lengths of pipe by means of integrally formed bell end on pipe using rubber ring seal. Use Schedule 40 PVC solvent weld couplings on Schedule 40 pipe.
 - 2. Ring-Tite Main Line: At changes in direction or branch mains, use appropriate ductile iron fittings with one-piece molded rubber ring seal for use with Class 200 PVC O-ring pipe as approved by the Uniform Plumbing Code. Solvent Weld Main Lines: At changes in direction or branch mains, use appropriate Schedule 40 PVC solvent weld fittings as approved by the Uniform Plumbing Code.
- B. Leemco Joint Restraint system on pipe fittings and connections in accordance with Leemco specification.
- C. Lateral lines (non-pressure): 1/2" shall be 1120-315 PSI PVC plastic pipe, 3/4" and larger shall be 1120- Schedule 40 PVC plastic pipe. All lateral lines shall be connected with Schedule 40, Type 1, Grade 1, PVC solvent weld fittings.
- D. Connections between main lines and RCVs shall be of Schedule 80 PVC (threaded both ends) nipples and fittings.
- E. Risers shall be as follows: Schedule 80 PVC threaded nipples and Schedule 40 PVC ells as shown in the construction details. Offset risers shall be King Bros. model FR-500 flex-risers.

2.2 QUICK COUPLING VALVES

- A. Quick coupling valve shall be as listed on the Drawings.

2.3 CONTROLLERS

- A. Controllers shall be as listed on the Drawings.

2.4 REMOTE CONTROL VALVES

- A. Remote control valves shall be globe pattern with brass / plastic body and bonnet, flow stem and manual bleed petcock. Sizes of remote-control valves shall be as listed on the Drawings.

2.5 GATE VALVES

- A. 2 1/2" and smaller shall be bronze construction with operating wheel and screwed connections. 3" and larger shall be ductile iron with operating nut (2" square) and "O" ring connections for PVC plastic pipe. Install in 9" diameter plastic valve box as detailed.

2.6 CONTROL WIRE, DECODERS AND GROUNDING

- A. The control wire shall be copper with U.L. approval for direct burial in ground, size #14-1. Common ground wire shall have white insulating jacket; control wire shall have insulated jacket of color other than white. Splices shall be made with 3M DBR/Y-6 Scotchlok seal packs. Provide a separate ground wire for each controller.
- B. 120-volt A.C. electrical shall be U.L. approved for use below grade in conduit. Size as noted on Drawings. Install in 1" PVC electrical conduit with splice boxes set approximately 300 feet on center and at wire splices. Splice boxes shall be set on 4 bricks with drain rock 6" deep at bottom of box. Splices shall be made waterproof with epoxy seal packs.
- C. Irrigation control wires shall be Hunter jacketed decoder cables with U.L. approval for direct burial in ground, size #14. Splice shall be made with 3M DBR/Y-6 seal packs.
- D. Hunter decoders and grounding plates per Drawings and Hunter Specifications.

2.7 BOXES FOR REMOTE CONTROL VALVES

- A. Rain Bird VB black plastic valve box with black plastic lid. Lid shall be marked: "Irrigation Control Valve".

2.8 SPRINKLER HEADS

- A. All sprinkler heads shall be as listed on the Drawings.

2.9 DRIP TUBING

- A. Drip tubing and associated components and fittings shall be as listed on the Drawings.

2.10 BACKFLOW PREVENTION DEVICE

- A. Backflow prevention device shall be the reduced pressure type with gate valves, check valves, test cocks, reduced pressure chamber and air vent. Install 12" above finish grade.

2.11 EMITTERS

- A. Emitters shall be as listed on the Drawings.

2.12 SUB-SURFACE DRIP

- A. Sub-surface drip irrigation shall be Rain Bird XFS-CV, flush valves, air-vacuum relief valves, fittings and all other components specified and detailed on the drawings.

2.13 PRESSURE GAUGES

- A. Pressure gauges shall be hermetically sealed, watertight, dust proof, with shatterproof face (2" diameter) and 1/4" standard pipe thread brass connection. Irro-meter model 7-100 or approved equal.

2.14 FILTER

- A. The emitter filter shall have a plastic housing, FIPT/MIPT connections with removable screen and integral flush valve with hose threads.
- B. Emitter filter shall be part of drip valve assembly as listed on the Drawings.

2.15 FLOW SENSOR

- A. Flow sensor shall be Creative Sensor Technology or as listed on the Drawings.

2.16 WEATHER SENSOR

- A. Weather sensor as listed on the Drawings compatible with irrigation controller.

2.17 MISCELLANEOUS INSTALLATION MATERIALS

- A. Solvent cement and primer for solvent weld joints shall be of make and type approved by manufacturer(s) of pipe and fittings. Cement shall be maintained at proper consistency throughout use.
- B. Lubricant for assembling rubber ring seal joints shall be of make and type approved by manufacturer of pipe.
- C. Pipe joint compound shall be non-hardening, non-toxic materials designed specifically for use on threaded connections in water carrying pipe. Performance shall be same as Permatex No. 51.

2.18 MISCELLANEOUS EQUIPMENT

- A. Provide all equipment called for by the Drawings.
- B. Provide to the Owner, at completion of Maintenance Period, three (3) each of all operating and servicing keys and wrenches required for complete maintenance and operation of all heads and valves. Include all wrenches necessary for complete disassembly of all heads and valves.

PART 3 - INSTALLATION

3.1 PREPARATION

- A. Schedule and coordinate placement of materials and equipment in manner to affect the earliest completion of work in conformance with construction and progress schedule.

3.2 HANDLING AND STORAGE

- A. Protect work and materials from damage during construction and storage as directed by Architect.
- B. Handle plastic pipe carefully; especially protect it from prolonged exposure to sunlight.

3.3 LAYOUT

- A. Lay out work as accurately as possible in accordance with diagrammatic drawings.
- B. Where site conditions do not permit location of piping, valves and heads where shown, notify Architect immediately and determine relocation in joint conference.
- C. Run pipelines and automatic control wiring in common trenches wherever practical.

3.4 EXCAVATION AND TRENCHING

- A. Excavation shall be in all cases ample in size to permit the pipes to be laid at the elevations intended and to permit ample space for joining.
- B. Make trenches for pipelines deep enough to provide minimum cover from finish grade as follows:
 - 1. 18" minimum cover over main lines to control valves and quick coupling valves.
 - 2. 18" minimum cover over control wires from controller to valves.
 - 3. 12" minimum cover over RCV controlled lateral lines to sprinkler heads.
 - 4. 4" cover over dripline.
- C. Restore surfaces, existing underground installations, etc., damaged or cut as a result of excavations, to original conditions in manner approved by Architect.
- D. Where other utilities interfere with irrigation trenching and pipe work, adjust the trench depth as instructed by Architect.

3.5 ASSEMBLING PIPELINES

- A. All pipe shall be assembled free from dirt and pipe scale. Field cut ends shall be reamed only to full pipe diameter with rough edges and burrs removed.

B. Rubber Ring Seal Joint:

1. Use factory-made male end or prepare field-cut male end to exact specifications of factory-made end.
2. Carefully clean bell or coupling and insert rubber ring without lubricant. Position ring carefully according to manufacturer's instructions.
3. Lubricate male end according to manufacturer's instructions and insert male end to specified depth. Use your hands only when inserting PVC pipe.
4. Ring pipe and fitting connections shall be restrained with the Leemco joint restraint system. Contractor shall install joint restraints on the ductile iron fittings and O-ring pipe in strict accordance with Leemco requirements.

C. Solvent Weld Joint:

1. Prepare joint by first making sure the pipe end is square, then deburring the pipe end and cleaning pipe and fitting of dirt, dust and moisture.
2. Dry-insert pipe into fitting to check for missizing. Pipe should enter fitting 1/3 to 2/3 depth of socket.
3. Coat the inside socket surface of the fitting and the fitting and the male end of the pipe with P-70 primer (manufactured by Weld-On). Then without delay, apply Weld-On 711 cement liberally to the male end of the pipe and also apply Weld-On 711 cement lightly to the inside of the socket. At this time, apply a second coat of cement to the pipe end.
4. Insert pipe immediately into fitting and turn 1/4 turn to distribute cement and remove air bubbles. The pipe must sit at the bottom of the socket and fitting. Check alignment of the fitting. Pipe and fitting shall be aligned properly without strain to either.
5. Hold joint still for approximately thirty (30) seconds and then wipe the excess cement from the pipe and fitting.
6. Cure joint a minimum of thirty (30) minutes before handling and at least six (6) hours before allowing water in the pipe.

D. Threaded Joint:

1. Field threading of plastic pipe or fittings is not permitted. Factory-formed threads only will be permitted.
2. Factory-made nipples shall be used wherever possible. Field-cut threads in metallic pipe will be permitted only where necessary. When field threading, cut threads accurately on axis with sharp dies.
3. All threaded joints shall be made up with pipe joint compound. Apply compound to male threads only.

4. Where assembling metallic pipe to metallic fitting or valve, no more than three (3) full threads shall show when joint is made up.
5. Where assembling to threaded plastic fitting, take up joint no more than one full turn beyond hand tight.
6. Where assembling soft metal (brass or copper) or plastic pipe, use strap type friction wrench only; do not use metal-jawed wrench.

E. Connection at Drip Tubing:

1. Connections shall be made with fittings specifically designed for use with Rain Bird XFS-CV drip tubing. Follow manufacturer's requirements for installation.
2. Cap or plug openings as pipeline is assembled to prevent entrance of dirt or obstructions. Remove caps or plugs only when necessary to continue assembly.
3. Where pipes or control wires pass through sleeves, provide removable non-decaying plug at ends of sleeve to prevent entrance of earth.

3.6 REMOTE CONTROL VALVES

- A. Install where shown on Drawings and group together where practical. Limit one remote control valve per box--No Exceptions.
- B. Locate valve boxes 12" from and perpendicular to walk edges, buildings, and walls. Provide 12" between valve boxes where valves are grouped together.
- C. Thoroughly flush the main line before installing valve.
- D. Install in shrub or ground cover areas where possible.
- E. Label control line wire at each valve with a 2 1/4" x 3/4" polyurethane I.D. tag, indicating identification number of valve (controller and station number). Attach label to control wire.
- F. Install decoders per manufacturer's instructions.

3.7 AUTOMATIC CONTROL WIRE

- A. Run lines along mains wherever practical. Tie wires in bundles with pipe wrapping tape at 10' intervals and allow slack for contraction between strappings.
- B. Loop a minimum of three (3) feet of extra wire in each valve box; both control wire and ground wire.
- C. Connections shall be made by crimping bare wires with brass connectors and sealing with 3M DBR/Y-6 sealer packs.
- D. Splicing will be permitted only on runs exceeding 2500'. Locate all splices at valve locations within valve boxes.

- E. Where control lines pass under paving, they shall pass through Schedule 40 electrical PVC conduit.
- F. Install wire, decoders, grounding, etc. in strict accordance with Hunter two-wire installation instructions.

3.8 AUTOMATIC CONTROLLER

- A. Provide and install automatic irrigation controller in approximate locations shown on Drawings. The exact location will be determined on the site by Architect. Provide conduit and wire and connect to 120 volt switch accessible to controller for ease of maintenance.
- B. Connect control lines to controller in sequential arrangement according to assigned identification number of valve. Each control line wire shall be labeled at the controller with a permanent non-fading label indicating station number of valve controlled. Attach label to control wire.
- C. Provide, program and install all decoders for 2-wire control system.

3.9 SPRINKLER HEADS AND QUICK COUPLING VALVES

- A. Thoroughly flush lines before installing heads or QCVs.
- B. Locate heads and QCVs as shown in the Drawings and Details.
- C. Adjust sprinkler heads for proper distribution and trim.

3.10 DRIP EMITTERS AND DRIP FITTINGS

- A. Install as indicated on the Drawings.
- B. Install emitters on uphill side of plants unless otherwise noted.
- C. Use only special tools manufactured or recommended by the drip equipment manufacturer for installation of emitters and fittings.
- D. Thoroughly flush lines.

3.11 DRIPLINE AND FITTINGS

- A. Install as indicated on the Drawings.
- B. Install tubing at a uniform depth of 4 inches.
- C. Use only special tools manufactured or recommended by the drip equipment manufacturer for installation of tubing and fittings.
- D. Thoroughly flush lines.

3.12 SYSTEM TESTING

- A. Perform test as specified below. Remake any faulty joints with all new materials. Use of cement or caulking to seal leaks is absolutely prohibited.

The Contractor shall:

1. Notify Architect at least three (3) days in advance of testing.
2. Perform testing at his own expense.
3. Center load piping with small amount of backfill to prevent arching or slipping under pressure. No fitting shall be covered.
4. Apply the following tests after weld plastic pipe joints have cured at least 24 hours.
 - a. Test live (constant pressure) and QCV lines hydrostatically at 125 PSI minimum. Lines will be approved if test pressure is maintained for six (6) hours. The lines shall be restored to the original test pressure and the amount of water required to do so shall be measured. Approved tables of allowable loss will be consulted, and the line will be approved or not approved as such results may indicate. The Contractor shall make tests and repairs as necessary until test conditions are met.
 - b. Test RCV controlled lateral lines with water at line pressure and visually inspect for leaks. Retest after correcting defects.
 - c. Perform an Irrigation Audit by a Third Party CLIA only Certified Auditor as per WELO guideline.

3.13 THIRD PARTY IRRIGATION AUDIT AND PERFORMANCE TESTING

- A. Perform an Irrigation Audit by a Third Party CLIA only Certified Auditor as per WELO guidelines and submit to the Landscape Architect. All corrections identified by Third Party Irrigation Auditor must be repaired at contracts expense.

3.14 BACKFILLING

- A. Backfill only after piping has been tested, inspected and approved.
- B. Backfill material shall be the earth excavated from the trenches, free from rocks, concrete chunks, and other foreign or coarse materials. Carefully select backfill that is to be placed next to plastic pipe to avoid any sharp objects which may damage the pipe.
- C. All pipes under asphalt paving shall be backfilled with 4" of clean sand on all sides of pipe.
- D. Place backfill materials in 6" layers and compact by jetting or tamping to a minimum compaction of 90 percent of original soil density.
- E. Dress off areas to finish grades and remove excess soil, rocks or debris remaining after backfilling is completed.

- F. If settlement occurs along trenches, and adjustments in pipes, valves and sprinkler heads, soil, sod, or paving are necessary to bring the system, soil, sod or paving to the proper level or the permanent grade, the Contractor, as part of the Work under this contract, shall make all adjustments without extra cost to the Owner.

3.15 GUARANTEE

- A. It shall be the responsibility of the Contractor to fill and repair all depressions and replace all necessary lawn and planting due to the settlement of irrigation trenches for one year following completion and acceptance of the job.
- B. The Contractor shall also guarantee all materials, equipment and workmanship furnished by him to be free of all defects of workmanship and materials, and shall agree to replace at his expense, at any time within one year after installation is accepted, all defective parts that may be found.

3.16 CLEAN-UP

- A. When work of this section has been completed and at such other times as may be directed, remove all trash, debris, surplus materials, and equipment from site.

END OF SECTION

SECTION 32 93 00

PLANTING

PART 1 – GENERAL

1.01 DESCRIPTION

- A. Provide planting work and planting maintenance complete as shown on the drawings and as specified.
- B. Related work specified elsewhere includes:
 - 1. Section 32 84 00, PLANTING IRRIGATION

1.02 QUALITY ASSURANCE

- A. Reference Standards:
 - 1. Manufacturer's recommendations.
 - 2. Weed Control Methods Handbook, The Nature Conservancy, Tu, M., Hurd, C. & J.M. Randall. 2001. <http://tncweeds.ucdavis.edu>.
 - 3. Wallace Labs: Soils Report: 365 Coral Circle, El Segundo, CA 90245, El Dorado Elementary School, San Francisco, Print Date: April 3, 2024
- B. Plant Material Standards
 - 1. Comply with federal and state laws requiring inspection for plant diseases and infestations. Submit inspection certificates required by law with each shipment of plants, and deliver certificates to the Owner. Obtain clearance from the County Agricultural Commissioner as required by law, before planting plants delivered from outside the County in which planted.
- C. Qualifications of Workmen: Contractor shall provide an experienced full time supervisor who shall be present at all times during execution of this portion of the work, who shall be thoroughly familiar with the type of materials being installed and the proper methods for their installation, and who shall direct all work performed under this Specification.
- D. Equipment: All equipment shall be suitable for the project and in good operational condition.
- E. Inspection: Seed, fertilizer and other packaged materials shall be delivered to project in original and unopened containers, labeled to indicate product identification, manufacturer's name, address, weight, certified analysis and indication of conformance with state and federal laws, as applicable. Materials must be inspected and approved by Owner's Representative prior to use. Containers shall be stored protected from ground contact and from the elements.
- F. Standards: All plants and planting material shall meet or exceed the specifications of Federal, State, and County laws requiring inspection for plant disease and insect control.

- G. Materials Lists: Within 10 days after award of the Contract, Contractor shall submit a complete list of all materials proposed to be furnished and installed under this Specification, demonstrating complete conformance with the requirements specified.
- H. Certificates: Deliver all certificates to the Owner.
- I. Testing Agency: Soil and Plant Laboratory, Inc. 1101 S. Winchester Blvd., Suite G-173, San Jose, CA 95128. (408) 727-0330.
- J. Planting Soil (Topsoil):
 - 1. Provide and install import planting soil (topsoil) where shown on drawings and as specified.
 - 2. On-site and import topsoil used on this project shall be tested, and approved before placement.
 - 3. Secure acceptance before stripping topsoil (planting soil) from a borrow area or delivering topsoil (planting soil) to the project site.

1.03 SPECIAL PROVISIONS

- A. Maintenance (General): Until final acceptance and a stand of grass is achieved, Contractor must maintain lawn by mowing, edging, watering, cultivating, weeding, spraying, cleaning, and replacing as necessary to keep grass in a vigorous, healthy condition.
- B. Watering: As necessary to keep top two inches of soil moist. It shall be the responsibility of the Contractor to ensure proper operation of the existing irrigation system, and program a temporary watering schedule for grass establishment. If there is no irrigation system present, Contractor shall provide a means to irrigate, which may include a temporary irrigation system for the turf establishment as designated on plans.
- C. Weeding: Remove weeds and foreign grass from newly established areas at least once a week. Herbicides may be used only when approved by Owner.

1.04 SUBMITTALS, per Section 013300.

- A. Product Data: Manufacturer's current catalog cuts and specifications of the following:
 - 1. Seed Certification: Prior to planting, provide the owner certificate stating analysis of purity and germination of seed.
 - 2. Seed: Seed shall be provided in unopened bags, bearing the analysis of the contents, and in sufficient quantities to meet the requirements of the project.
 - 3. Sod: Provide supplier's cutsheets, product data and certification that the specified grass types are available.
 - 4. Fertilizer: Provide manufacturer's cut-sheet and product data.
 - 5. Temporary Erosion Control Blanket: Provide manufacturer's cutsheet and product data. A biodegradable erosion control blanket shall be used when seed is applied to any areas with a slope steeper than 6:1.

6. Straw Mulch: Provide manufacturer's cut-sheet and product data.
 7. Mulch: Provide manufacturer's cut-sheet and product data.
 8. Tackifier: Provide manufacturer's cut-sheet and product data.
 9. Mulching Equipment: Provide manufacturer information, capacity and product data.
 10. Import planting soils: Prior to planting, provide the owner certificate stating analysis of chemical and physical properties of topsoils.
- B. Samples:
1. Plants: Submit typical sample photograph of each variety or entire quantity to site for approval by Architect.
- C. Certificates of Compliance for the following:
1. Seed/Hydroseed purity and germination analysis per state requirements
 2. Import soils chemical and physical properties.
- D. Topsoil Analysis: After approval of rough grading and topsoil placement, obtain three representative samples of topsoil taken from approved site locations and submit to an accredited Soils Laboratory for "agricultural suitability" analysis report, including evaluation of physical and chemical properties of soil and recommendations for adding amendment and fertilizers to the soil.
- Upon approval of the Laboratory's report by the Landscape Architect, the recommendations in the report shall become a part of the Specifications and the quantities of soil amendment, fertilizer and other additives shall be adjusted to conform with the report. Request Testing Laboratory to send one copy of test results directly to Landscape Architect and one copy to the Owner.
- E. Receipts for all fertilizer and grass seed.
- F. Herbicide receipts/type
- G. Temporary Watering Plan.
- H. Submit a proposed work schedule to the owner for approval at least fifteen (15) days prior to start of work under this Section. After approval, no modification shall be made to this schedule without written authorization by the owner.
- I. Substitutions:
1. If the Contractor desires to substitute a product, he shall list each item and note it as a "substitution" and provide the following information:
 - a. Descriptive information describing its similarities to the specified product.
 - b. Reason Contractor wants the substitution.
 - c. The price difference in the two different products.
 2. If the product is approved and, in the opinion of the Owner's Representative,

the substituted product does not perform as well as it should, the Contractor shall replace it with the specified product at no additional cost to the Owner.

1.05 PROJECT/SITE CONDITIONS

- A. Site Visit: At beginning of work, visit and walk the site with the Owner's Representative to clarify scope of work and under-stand existing project/site conditions.
- B. Locations of irrigation components shall be determined by the Contractor to prevent damage. Any damage to existing and newly installed irrigation shall be repaired by the Contractor at his/her expense. All repairs must be inspected and approved by Owner.

1.06 WARRANTIES, per Section 017836.

- A. Dead or discolored sod shall be replaced by the Contractor. Seeded areas that have not established must be re-seeded by the Contractor until a complete cover of grass in a healthy and thriving condition is achieved. It is the responsibility of the Contractor to repair any damage made during re- grassing.
- B. Provide a uniform stand of grass by watering, mowing and maintaining lawn areas until final acceptance. Re-seed areas which fail to provide a uniform stand of grass with specified materials until all affected areas are accepted by the owner. Seeded lawn areas shall have a one-year warranty from date of final acceptance. Contractor shall replace seed immediately as needed during the warranty period at Contractor's expense.
- C. Provide a written warrant all plants and planting to be in a healthy, thriving condition until the end of the maintenance period.
- D. Contractor shall guarantee full turf establishment, 95% cover with no bare areas in excess of six (6") inches diameter.
- E. Guarantee shall provide for timely filling, leveling and repairing eroded areas, reseeding areas exhibiting lack of healthy growth. Contractor shall guarantee to repair seeded lawn areas within 10 working days of written notice by the owner.
- F. Warrant plant installation and maintenance by Contractor against defects for a period of one year.

1.07 PRODUCT DELIVERY, HANDLING AND STORAGE

- A. Furnish products in manufacturer's original, unopened, undamaged, unsoiled and dated within one-year standard containers bearing original labels showing quantity, analysis and name of manufacturer.
 - 1. The owner reserves the right to reject any and all material not meeting this criterion at no additional cost to the owner.
- B. Deliver packaged material to site in original unopened containers with intact labels bearing manufacturer's guaranteed chemical analysis, name, trademark, and conformance to state law.
- C. Store fertilizer and seed in weather proof locations.

- D. Protect all materials before, during, and after installation. Sod shall be stored and maintained in a moist condition from the time of harvest until planted.
- E. Remove from site, all materials which do not comply with the specified requirements.
- F. In the event of damage, immediately make repairs and replacements as necessary, at no additional cost to the Owner.

PART 2 - PRODUCTS

2.01 HERBICIDE

- A. Use of petrochemical and salt-based Insecticides, synthetic fertilizers, Insecticides, Fungicides and Herbicides are strictly prohibited without the written consent of the project manager.

2.02 GRASS SOD

- A. Grass sod shall be cut with a full $\frac{3}{4}$ " heavy clay soil covering no more than 24 hours prior to planting and be maintained in a moist condition from the time of harvest until planted. Rolled sod with is preferred for large areas Grass sod shall have a healthy and dense root system and be free from noxious weeds. Sod which has become discolored will be rejected and removed from site.

2.03 GRASSES

- A. For turf seeding & hydroseeding:
 - 1. 90/10 Fescue/Blue Blend.
 - 10 lbs/1000 sq. ft.
 - 32.72% Unitus Tall Fescue
 - 32.68% Cayenne Tall Fescue
 - 24.07% Guardian 41 Tall Fescue
 - 9.92% SR2100 Kentucky Bluegrass
 - 2. Supplier shall be Ewing Irrigation Products Inc, Hayward, CA, (510) 441-9530 or approved equal.
 - 3. Provide extra seed for top seeding as required during the plant establishment period

2.10 ON-SITE PLANTING SOIL (TOPSOIL):

- A. Only use on-site planting soil for topsoil if acceptable to the Architect and if it meets the following requirements:
 - 1. On-site planting soil shall be fertile, friable, natural, productive soil containing a normal amount of humus, and shall be capable of sustaining healthy plant life. Planting soil shall be free of subsoil, heavy or stiff clay, rocks, gravel, brush, roots, weeds, noxious seeds, sticks, trash, and other deleterious substances. Soil shall not be infested with nematodes or with other noxious animal life or toxic substances. Soil shall be obtained from well- drained, arable land, and shall be of an even texture. Soil shall not be taken from areas on which are growing any noxious weeds such as Acacia, Morning Glory, Fennel, Broom, English Ivy,

German Ivy, Sorrel, Oxalis, Bermuda Grass, or plants listed in the Current Edition of the California Invasive Plant Inventory published by the California Invasive Plant Council. <http://www.cal-ipc.org/>

2. On-site planting soil shall have a pH value of between 6.0 and 7.5, a boron concentration of the saturation extract of less than 1 ppm, salinity of the saturation extract at 25 degrees C. of less than 4.0 millimoles, and a sodium absorption rate (SAR) of less than 8.
3. The silt and clay content of On-site planting soil shall not exceed that of the existing soil it is to be placed over. It shall have sand content not less than a "Sandy Loam" as classified in accordance with USDA Standards.
4. Make the site of the source of supply of on-site planting soil available to the Landscape Architect for observation and acceptance prior to any hauling or placing of soil. In addition, submit for approval a 1-quart sample of soil, together with a standard soil analysis report by an accredited soils analyst showing chemical analysis stating source, fertility, agricultural suitability and particle size distribution of the soil. Deliver the sample to the Landscape Architect two weeks before starting the contemplated hauling of the soil. Following approval of the sample, provide a one-half cubic yard sample, which shall be stored at the site of work for comparison with subsequent loads of soil. The comparison sample shall be protected by a cover until the furnishing of all soil has been completed and accepted. Should the soil submittal lack certain requirements which can be added to the soil, the Landscape Architect will consider a request by the Contractor to amend the soil as recommended by the Soils Analyst at the Contractor's expense.

2.11 IMPORTED PLANTING SOIL (TOPSOIL):

A. Imported planting soil shall be imported soil as follows:

1. Imported planting soil shall be fertile, friable, natural, productive soil containing a normal amount of humus, and shall be capable of sustaining healthy plant life. Planting soil shall be free of subsoil, heavy or stiff clay, rocks, gravel, brush, roots, weeds, noxious seeds, sticks, trash, and other deleterious substances. Soil shall not be infested with nematodes or with other noxious animal life or toxic substances. Soil shall be obtained from well- drained, arable land, and shall be of an even texture. Soil shall not be taken from areas on which are growing any noxious weeds such as Acacia, Morning Glory, Fennel, Broom, English Ivy, German Ivy, Sorrel, Oxalis, Bermuda Grass, or plants listed in the Current Edition of the California Invasive Plant Inventory published by the California Invasive Plant Council. <http://www.cal-ipc.org/>
2. Imported planting soil shall have a pH value of between 6.0 and 7.5, a boron concentration of the saturation extract of less than 1 ppm, salinity of the saturation extract at 25 degrees C. of less than 4.0 millimoles, and a sodium absorption rate (SAR) of less than 8.
3. The silt and clay content of imported planting soil shall not exceed that of the existing soil it is to be placed over. It shall have sand content not less than a "Sandy Loam" as classified in accordance with USDA Standards.
4. Make the site of the source of supply of planting soil available to the Landscape Architect for observation and approval prior to any hauling or placing of soil. In addition, submit for approval a 1-quart sample of soil, together with a standard soil analysis report by an accredited soils analyst showing chemical analysis stating

source, fertility, agricultural suitability and particle size distribution of the soil. Deliver the sample to the Landscape Architect two weeks before starting the contemplated hauling of the soil. Following approval of the sample, provide a one-half cubic yard sample, which shall be stored at the site of work for comparison with subsequent loads of soil. The comparison sample shall be protected by a cover until the furnishing of all soil has been completed and accepted. Should the soil submittal lack certain requirements which can be added to the soil, the Landscape Architect will consider a request by the Contractor to amend the soil as recommended by the Soils Analyst at the Contractor's expense.

B. Imported planting soil may conform to the following:

1. Lyngso Garden Material's Top Soil or equivalent from Lyngso Garden Materials Inc., 19 Seaport Boulevard, Redwood City, CA 94063. (650) 364-1730. <http://lyngsogarden.com/>.
2. Loam topsoil, well drained homogeneous texture and of uniform grade, without the admixture of subsoil material and entirely free of dense material, hardpan, sod, or any other objectionable foreign material.
3. Containing not less than 4 percent nor more than 20 percent organic matter in that portion of a sample passing a 1/4 inch sieve when determined by the wet combustion method on a sample dried at 105 degrees C.
4. Containing a pH value within the range of 4.5 to 7 on that portion of the sample which passes a 1/4 inch sieve.
5. Containing the following gradations:

Sieve Designation	Percent
Passing 1 inch	100

Sieve Designation	Percent
Passing 1/4 inch	97 - 100
No. 200	20 - 65 (of the 1/4 inch sieve)

6. Make the site of the source of supply of planting soil available to the Landscape Architect for observation and approval prior to any hauling or placing of soil. In addition, submit for approval a 1-quart sample of soil, together with a standard soil analysis report by an accredited soils analyst showing chemical analysis stating source, fertility, agricultural suitability and particle size distribution of the soil. Deliver the sample to the Landscape Architect two weeks before starting the contemplated hauling of the soil. Following approval of the sample, provide a one-half cubic yard sample, which shall be stored at the site of work for comparison with subsequent loads of soil. The comparison sample shall be protected by a cover until the furnishing of all soil has been completed and accepted. Should the soil submittal lack certain requirements which can be added to the soil, the Landscape Architect will consider a request by the Contractor to amend the soil as recommended by the Soils Analyst at the Contractor's expense.

2.12 WATER

- A. Free of substance harmful to plant growth. Temporary irrigation water shall be provided by trucks, water tanks, hoses, pumps, sprinklers or other methods of

transportation furnished by Contractor. Contractor is responsible for providing all water to the project site required for establishment of all seed and revegetation areas. Temporary irrigation watering plan including method shall be reviewed and approved by the owner, prior to construction.

2.13 MULCH

- A. Wood Cellulose Fiber Mulch: Wood cellulose fiber mulch, for use with the hydraulic application of grass seed and fertilizer, shall consist of specially prepared wood cellulose fiber. It shall be processed in such a manner that it will not contain germination or growth inhibiting factors. It shall be dyed an appropriate color to allow visual metering of its application. The wood cellulose fibers shall have the property of becoming evenly dispersed and suspended when agitated in water. When sprayed uniformly on the surface of the soil, the fibers shall form a blotterlike groundcover which readily absorbs water and allows infiltration to the underlying soil. Weight specifications from suppliers for all applications shall refer only to air dry weight of the fiber, a standard equivalent to eighteen (18%) percent moisture. The mulch material shall be supplied in packages having a gross weight not in excess of 100 pounds and be marked by the manufacturer to show the dry weight content. Suppliers shall be prepared to certify that laboratory and field testing of their product has been accomplished and that it meets all of the foregoing requirements.

6. Wood Cellulose Fiber Mulch application = 2,000 pounds/acre.

2.14 FILTER FABRIC (GEOTEXTILE FABRIC and WEED FABRIC))

- A. Polypropylene non-woven geotextile fabric with uniform fiber distribution by "Mirafi, Inc." #140NC, or accepted equal.

2.15 FERTILIZERS

- A. Commercial fertilizer, pelleted or granular form, conform to the requirements of Chapter 7, Article 2, of the Agricultural Code of the State of California for fertilizing materials as follows:

13-13-13 grade, uniform on composition, free-flowing, and suitable for application with approved equipment. The fertilizer shall be delivered to the site in bags or other convenient containers, each fully labeled, conforming to the applicable state fertilizer laws, and bearing the name or trademark and warrant of the producer.

6. Fertilizer Application: 800 lbs./acre

- B. Maintenance Fertilizer: Same as Above

2.12 OTHER MATERIALS

- A. As shown on drawings or approved equal

2.13 HERBICIDE

- A. As recommended by a licensed pest control specialist. Use Integrated Pest Management practices that use the least toxic practices. Apply according to manufacturer's instructions using certified applicators.

PART 3 - EXECUTION

3.01 PAVING REMOVAL

A. General:

1. Coordinate paving removal with other work as required. Remove materials in an orderly and careful manner.
2. Repair or replace all removal work performed in excess to that required at no cost to the Owner. Repair or replacement shall match and equal construction, condition and finish existing at time of award of Contract.

B. Remove following from locations to the extent required or directed for new construction.

1. Asphalt, concrete paving, base rock under paving, curbs and related materials.
2. Designated utility services occurring within removal areas, including disconnection, capping and complete removal or abandonment.
3. Miscellaneous structural elements which interfere with the new construction and as directed by the Owner's Representative.

C. Legally dispose of demolished materials offsite. Backfill and compact areas excavated and open pits and holes resulting from removal operations. Comply with requirements specified in this Section and Section 312333 for backfill materials, compaction and installation methods.

3.02 HERBICIDE APPLICATION

- A. Use of Synthetic Fertilizer, Insecticides, Fungicides and Herbicides are strictly prohibited without the written consent of the project manager.**

3.03 PREPARATION

- A. Provide 72-hour notification to the owner prior to seed installation so owner can be on site during this process.**
- B. Strip existing vegetation and six (6) inches of existing soil from all areas to receive seed not stripped and graded under previous work**
- C. After stripping, loosen soil to a depth of two (2) inches prior to laying seed. Break up compacted soil. Remove all stones, roots, vegetation, rubbish, debris and other foreign matter one (1) inch in diameter or larger from the top two (2) inches of soil. No foreign matter may be buried on site.**
- D. Hand rake to achieve a uniform loose depth to 2 inches and a smooth, consistent grade immediately prior to laying seed.**
- E. Finish grade to be one (1) inch below top of adjacent hardscape, unless otherwise noted in drawings.**

3.04 FINE GRADING AND SOIL PREPARATION

- A. Provide 72-hour notification to the owner for final grade inspection for seed installation.
- B. Uniformly distribute and spread planting soil backfill in layers not to exceed 24". Topsoil will be spread as necessary by the site work contractor and is subsidiary to this specification.
- C. Finished Grades: Shall be understood to be final spot grades and contours indicated on the contract drawings. Where final spot grades or new contours are not indicated, finished grades shall be uniformly level or sloping between points for which elevations are given or contours are shown.
- D. Tops and Bottoms of All Slopes: Round tops and bottoms of slopes and drainage swales. Adjust and warp slopes, at intersections of cuts and fills, to flow into each other or into the existing natural ground surface without noticeable break. Cuts and fills shall have a maximum slope of 3' horizontally to 1' vertically, unless otherwise shown on the contract drawings. The finished surface of all lawn areas after planting shall not be less than $\frac{1}{4}$ " below or more than $\frac{3}{4}$ " above the finished grade of all walks or other surface areas.
- E. Fine Grading Lawn Areas: Bring the grade of areas to receive turf to a uniform, level slope, as determined by the use of surveying instruments, by discing, harrowing and other methods approved by the owner. When establishing finish grades, remove and dispose of all clods, hard lumps, rocks, roots, litter and other foreign matter not passing through the teeth of a hand iron rake. Tractor drawn raking equipment that compacts lawn areas will not be allowed. Where lawns are intended to drain across pavements, the uphill grade shall be flush with the pavement; the downhill grade shall be $\frac{1}{2}$ " to $\frac{3}{4}$ " below the pavement grade.
- F. Settlement: Maintain ground surfaces to the finish grades shown on the contract drawings, and deposit whatever additional topsoil that may be required to correct any settlement or erosion that occurs prior to the date of issuance of the Certificate of Final Acceptance. The surface upon which additional topsoil is to be deposited shall be raked or otherwise satisfactorily prepared to ensure a proper bond. Fill hollows that develop from settling, to the finished elevations, with approved topsoil. Finished lawn areas shall be left sufficiently high to meet all paved areas after settlement.
- G. Protect graded areas from traffic, compaction, and erosion. Keep areas free from trash and debris. Repair and re-establish grades in settled, eroded, or damaged areas.

3.05 GRASS SODDING

- A. The Contractor shall flag locations of existing underground components or equipment, including sprinkler heads and valve boxes, in order to prevent damage.
- B. Fertilize areas to be sodded at the rate of $\frac{1}{2}$ to 1 lb. N per 1000 square feet, or label requirement.
- C. Run irrigation system prior to planting. Place sod on moist, but not muddy, soil.
- D. Large rolled sod must have root fabric system removed prior to installation. Rolled sod root system must consist of at least $\frac{3}{4}$ heavy clay soil na

- E. Lay sod with staggered joints and with seams tightly fitted together. Do not cover any existing sprinkler heads or valve boxes. When laying sod adjacent to existing turf, the Contractor shall maintain a smooth transition, with no overlap or visible edges. Water thoroughly after laying sod.
- F. Sod shall be stapled on sloped areas where required as designated on plans.
- G. Roll sod after laying with a 200 lb. hand roller. Roll in crossed directions. Repeat rolling operation two days after laying. Use of mechanical rollers must be approved by Owner's Representative.
- H. Sod which is discolored or dehydrated will be rejected and replaced at no cost to the Owner.

3.06 GRASS SEEDING

- A. The Contractor shall flag locations of existing underground components or equipment, including sprinkler heads and valve boxes, in order to prevent damage.

On small sites, seed can be broadcast with a hand seeder or fertilizer spreader. Equipment such as grass drills or planters may be necessary for larger sites. Use of such equipment must be approved by Owner's Representative.

- B. Grass seed shall be uniformly distributed at recommended seeding rates. Immediately after seeding, the Contractor shall firm the soil with a roller and lightly water the site. Contractor shall set irrigation program to apply water in light, frequent applications. Contractor shall re-seed areas that have washed and have resulted in a non-uniform stand of grass.

3.07 HYDROSEED PLANTING

- A. Special Mulching Equipment and Procedures: Hydraulic equipment used for the application of fertilizer, seed, and slurry of prepared wood fiber mulch shall have a built-in agitation system with an operating capacity sufficient to agitate, suspend, and homogeneously mix a slurry containing up to forty (40) pounds of fiber plus a combined total of seventy (70) pounds of fertilizer solids for each one hundred (100) gallons of water. The slurry distribution lines shall be large enough to prevent stoppage. The discharge line shall be equipped with a set of hydraulic spray nozzles which provide even distribution of the slurry on the slopes to be seeded. The slurry tank shall have a minimum capacity of eight hundred (800) gallons and shall be mounted on a traveling unit which may be either self-propelled or drawn with a separate unit which will place the slurry tank and spray nozzles within sufficient proximity to the areas to be seeded so as to provide uniform distribution without waste. The owner's representative may authorize equipment with smaller tank capacity provided that the equipment has the necessary agitation system and sufficient pump capacity to spray the slurry in a uniform coat.
- B. Materials Inspection: The day of hydroseeding, Contractor shall provide hydroseed machine, water, labor, unopened fertilizer and unopened seed container in original manufacturer's container and fiber material. The owner shall inspect and observe the water, mulch, seed mix, fertilizer and tackifier in the original container(s) prior to pouring into tank and application. Any materials placed in the tank, including water, without observation will be rejected and replaced at no additional cost to the Owner.
- C. Mixing:

1. Care shall be taken that the slurry preparation takes place on the site of the work. Any mixture prepared or applied prior to the owner observation or prepared prior to being on site will not be accepted. Spraying shall commence immediately after inspection when the tank is full.
2. Operators of hydromulching equipment shall be thoroughly experienced in this type of application. Apply specified slurry mix in a motion to form a uniform mat at specified rate. The operator shall spray the area with a uniform, visible coat by using the green color of the wood pulp as a guide. Keep hydromulch within areas designated and keep from contact with other plant material. Slurry mixture which has not been applied within four (4) hours of mixing shall not be used and shall be removed from the site.
3. After installation, the Contractor shall not operate any equipment over the covered area. Immediately after application, thoroughly wash off any plant material, planting areas, or paved areas not intended to receive slurry mix. Keep all paved and planting areas clean during maintenance operations.

3.08 PROTECTION

- A. No heavy equipment shall be moved over the planted turf areas unless the soil is again prepared, graded, leveled, and replanted. It will be the responsibility of the Contractor to protect all paving surfaces, curbs, utilities, plant materials, and any other existing improvements from damage. All damage shall be repaired or replaced at no cost to the Owner.

3.09 DITCHES AND SWALES

- A. Construct ditches and swales in the areas designated to convey storm water to the storm drainage facilities. Refer to Civil Drawings.

3.11 ESTABLISHMENT

- A. Seeded areas shall be maintained in good condition throughout the installation process and until final acceptance.
- B. Upon completion of work, clean areas within Contract limits, remove tools, supplies and equipment. Wash down curbs and pavement areas. Scrub curbs and walks as necessary to ensure a clean surface. Provide site clean and free of materials and suitable for use as intended.

3.12 PLANTING ESTABLISHMENT MAINTENANCE

- A. General Requirements:
 1. The planting establishment maintenance period required shall be 90 calendar days after all planting is complete, erosion control areas are seeded, and installation approved. A longer period may be required if the erosion control areas are not thick, vigorous and even, or if the plant material is not acceptably maintained during the maintenance period. The maintenance period may be suspended at any time upon written notice to the Contractor that the landscaping is not being acceptably maintained, and the day count suspended until the landscape is brought up to acceptable standards as determined by the Architect.

2. Maintain seeded areas until final acceptance.
3. Maintain seeded areas, including watering, spot weeding, mowing, and reseeding until a fully rooted, uniform stand of grass free of weeds, undesirable grass species, disease and insects is achieved and accepted by the owner.
4. Water daily to maintain adequate surface soil moisture for proper root establishment. Continue daily watering for not less than 30 days. Thereafter, apply $\frac{1}{2}$ " of water twice weekly until acceptance. The Contractor shall provide a written watering schedule for review by the owner.
5. Repair, rework, and re-seed all areas that are washed out, eroded, or die out. The Contractor shall guarantee to repair seed within ten (10) working days of written notice from the owner.
6. Mow lawn areas as soon as lawn top growth exceeds a 5" height. Cut back to 3 $\frac{1}{2}$ " in height. Repeat mowing as required to maintain specified height not less than 3" and not more than 5". The owner reserves the right to adjust the mowing height and frequency. Protect all areas against damage, including erosion and trespass, and provide proper safeguards. Maintain and keep all temporary barriers erected to prevent trespass.
7. Excess grass clippings shall be picked up and removed from the site and premises.
8. Keep all walks and paved areas clean. Keep the site clear of debris resulting from landscape work or maintenance.
9. Edges shall be trimmed at least twice monthly or as needed for neat appearance. Clippings shall be completely removed and disposed of.
10. Contractor will not be responsible for turf damage due over use by the school and the public after the initial 90-day plant establishment period.
11. Repair all damaged planted areas, and reseed immediately upon discovery of damage or loss.
12. Check sprinkler systems at each watering; adjust coverage and clean heads immediately. Adjust timing of sprinkler controller to prevent flooding.
13. Maintain adequate moisture depth in soil to ensure vigorous growth.
14. Turf seed shall not be mown shorter than one-third ($\frac{1}{3}$) of grass leaf height.
15. Seed shall be well established, free of bare spots and weeds, and of a "sod-like" quality to the satisfaction of the School District prior to Final Acceptance.
16. Keep Contract areas free from weeds by cultivating, hoeing or hand pulling. Use of chemical weed killers will not relieve the Contractor of the responsibility of keeping areas free of weeds over 1-inch high at all times.

B. Fertilization:

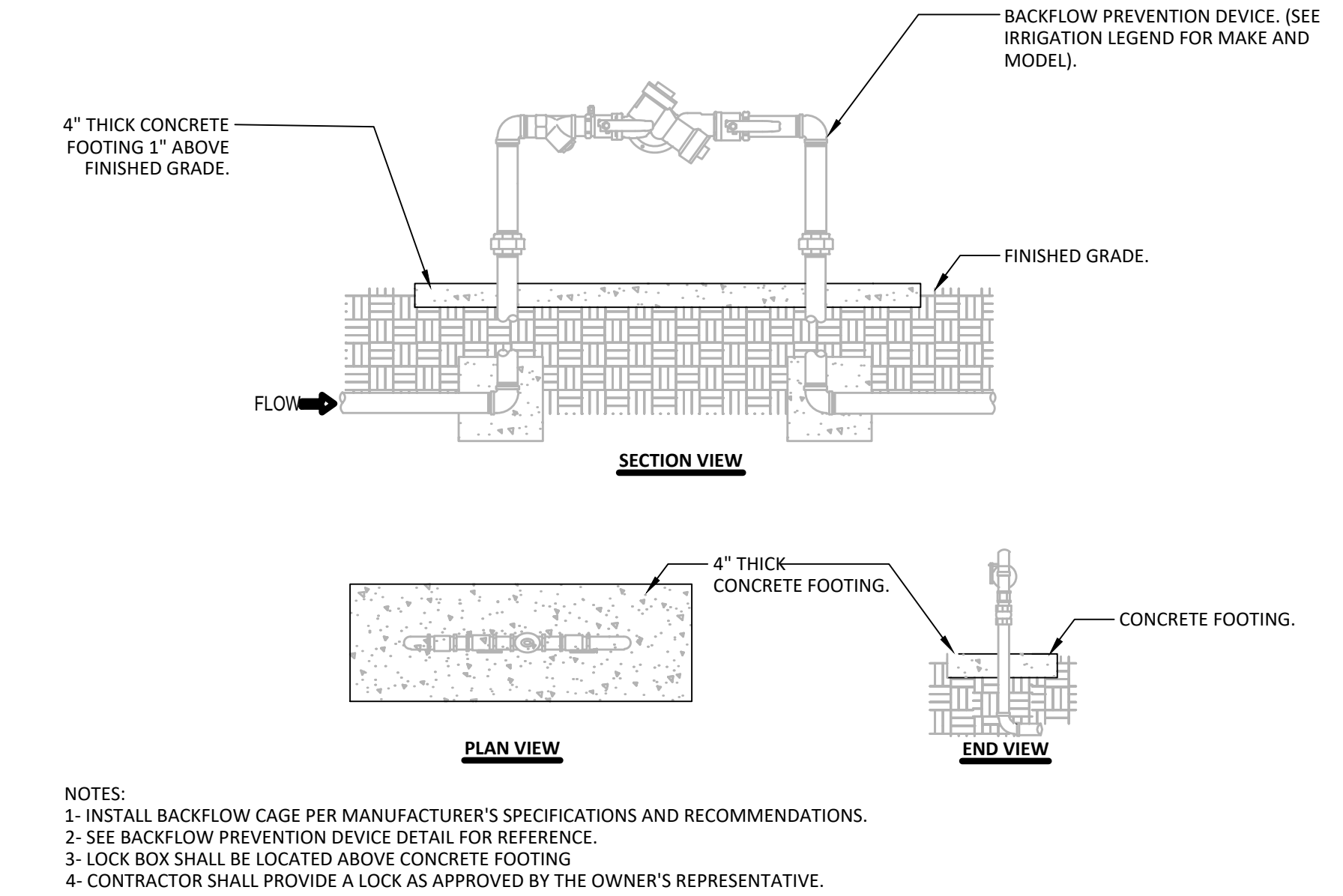
- a) Turf that is installed from sod should receive a light fertilization 2 weeks after planting with 5-5-5 applied at a rate of 6 pounds per 1000 square feet. Once the turf is well established, the frequency of fertilization should be decreased depending on color and rate of growth desired.
 - b) After completion of 60-days of establishment period, fertilize all turf seed with 16-16- 16 at a rate of 3.0 pounds per 1,000 square feet and continue through the maintenance period at the discretion of the turf maintenance contractor to provide a healthy, well-rooted, even-colored, viable lawn well established, free of weeds, open joints, bare areas, and surface irregularities through the Athletic Field Maintenance Period.
2. Disease Control: Control turf diseases throughout the Field Maintenance Period with legally approved fungicides and herbicides.
 3. Weed Control: Control broad leaf weeds with Bay-Friendly practices or selective, legally approved herbicides. No herbicide shall be used without the prior consent of the School District.

3.13 FINAL PLANTING CLEANING & CLOSEOUT PROCEDURES, per Section 017700.

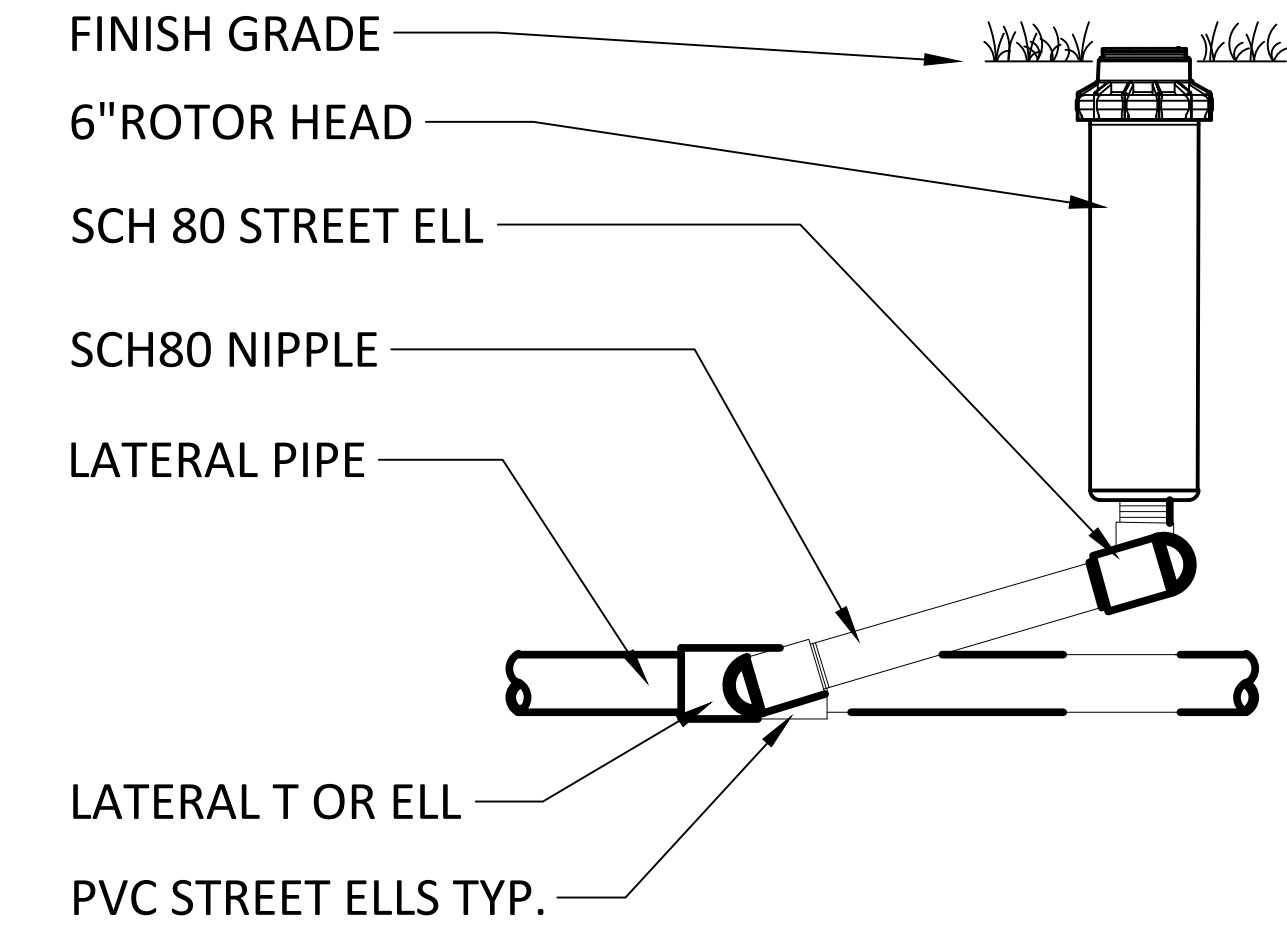
- A. Inspection to determine final acceptance of seed will be made by the owner upon Contractor's request. Provide notification at least 10 working days before requested inspection date.
- B. Seeded areas will be acceptable provided all requirements, including maintenance, have been completed and a healthy, uniform, close stand of the specified grass is established, free of weeds, undesirable grass species, disease and insects.
- C. The project will not be accepted, nor final payment authorized until sod is healthy, vigorous, fully rooted and grown-in with 80% cover and no bare areas larger than six (6") in diameter. The contractor is responsible to maintain the project sod until these criteria are met.

END OF SECTION

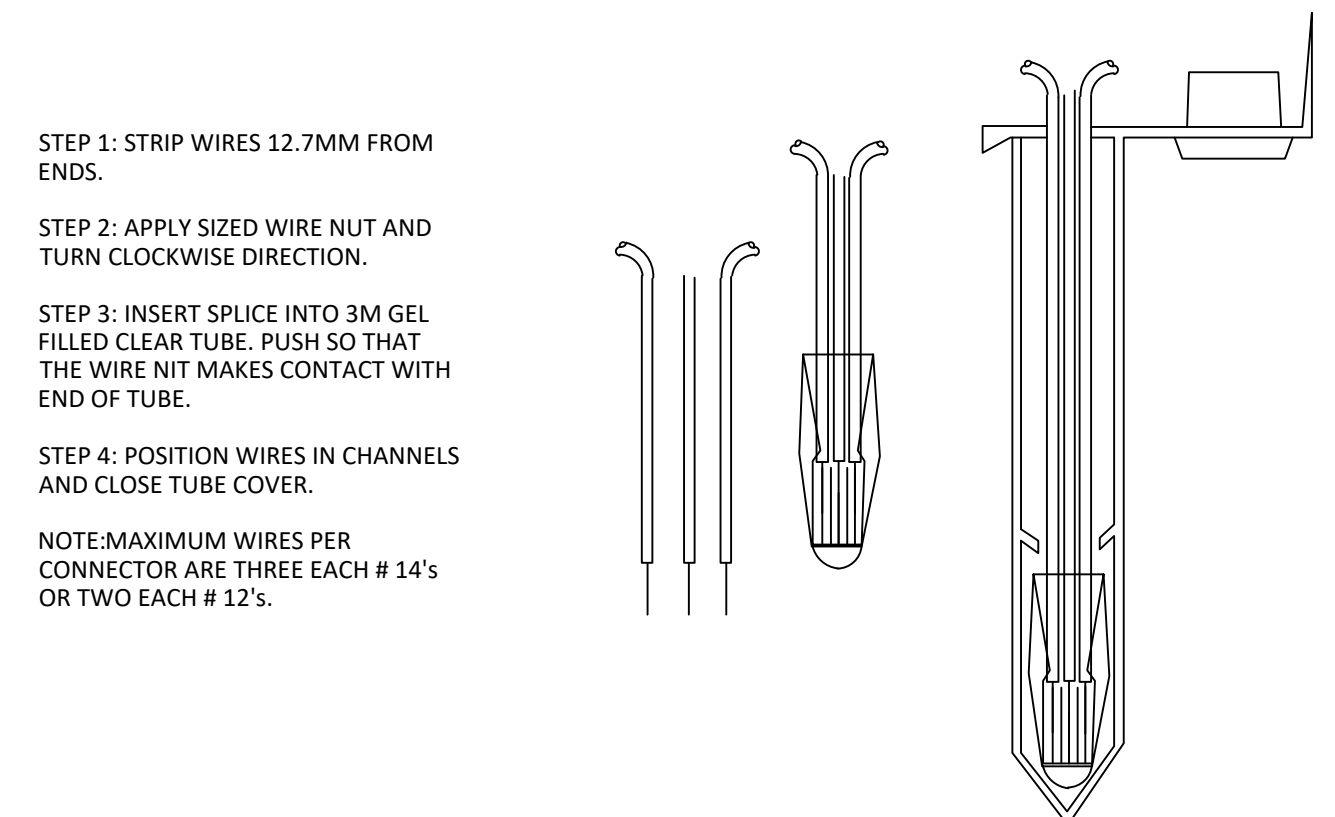
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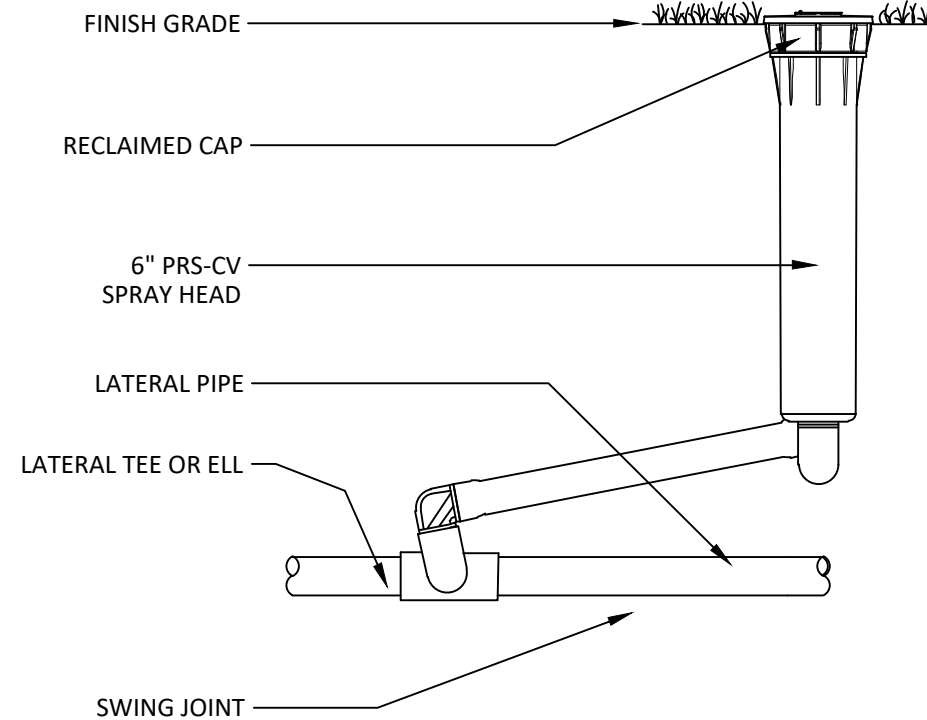
1 EXISTING RP BACK FLOW PREVENTER
NTS 2005-02



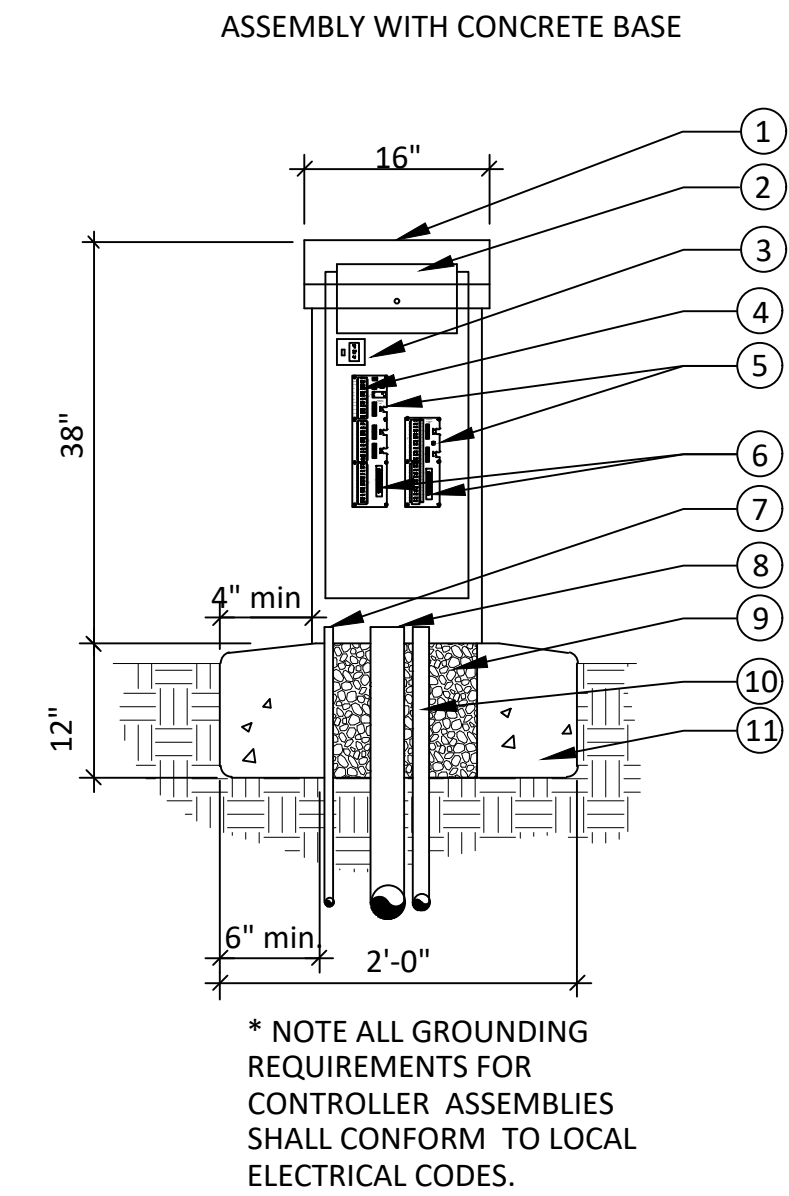
5 6 INCH ROTOR HEAD
NTS 2027-04



6 3M-DBYR CONNECTORS
NTS 2002-01

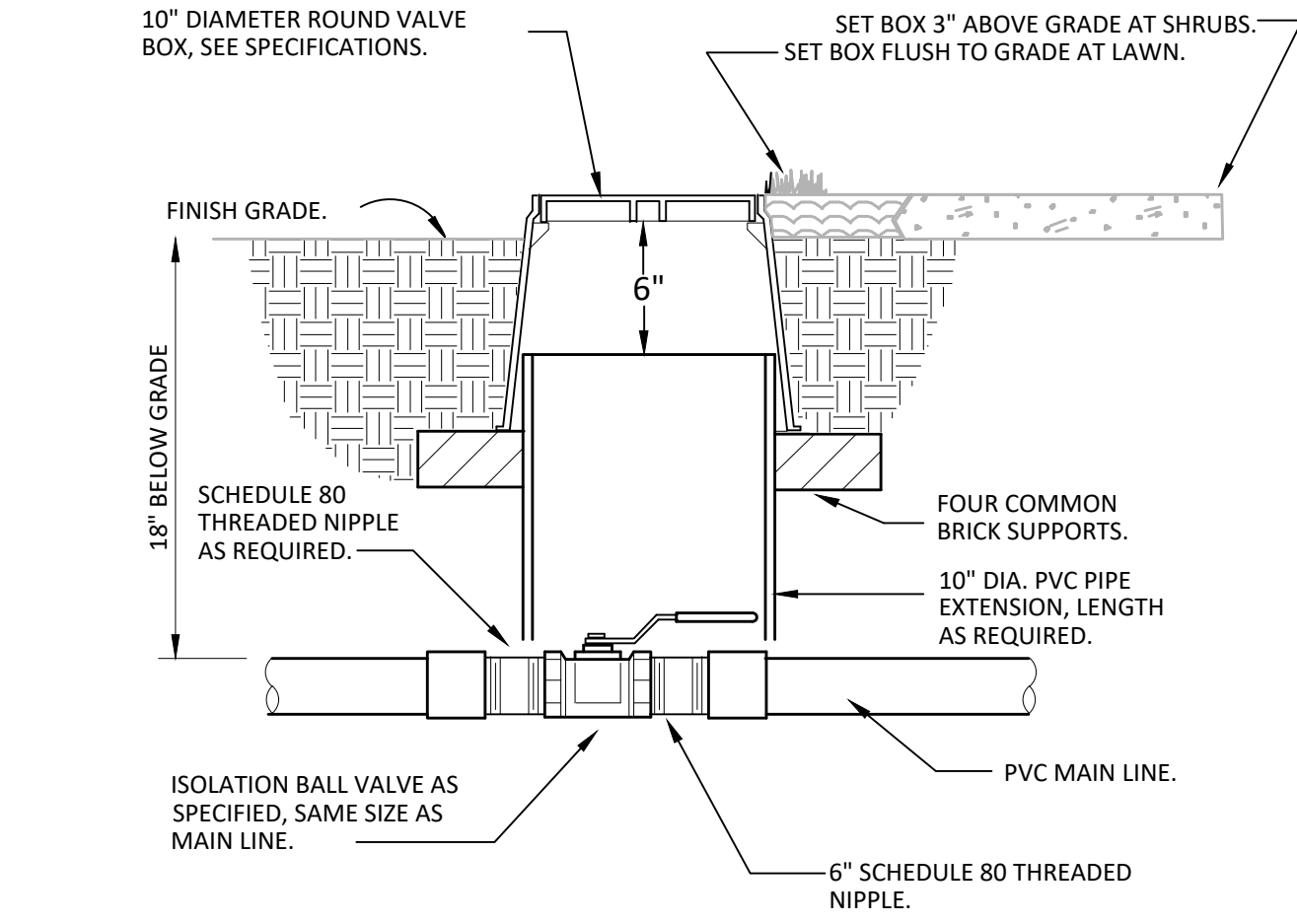


7 6" PRS-CV SPRAY HEAD WITH SWING JOINT
NTS 2027-02

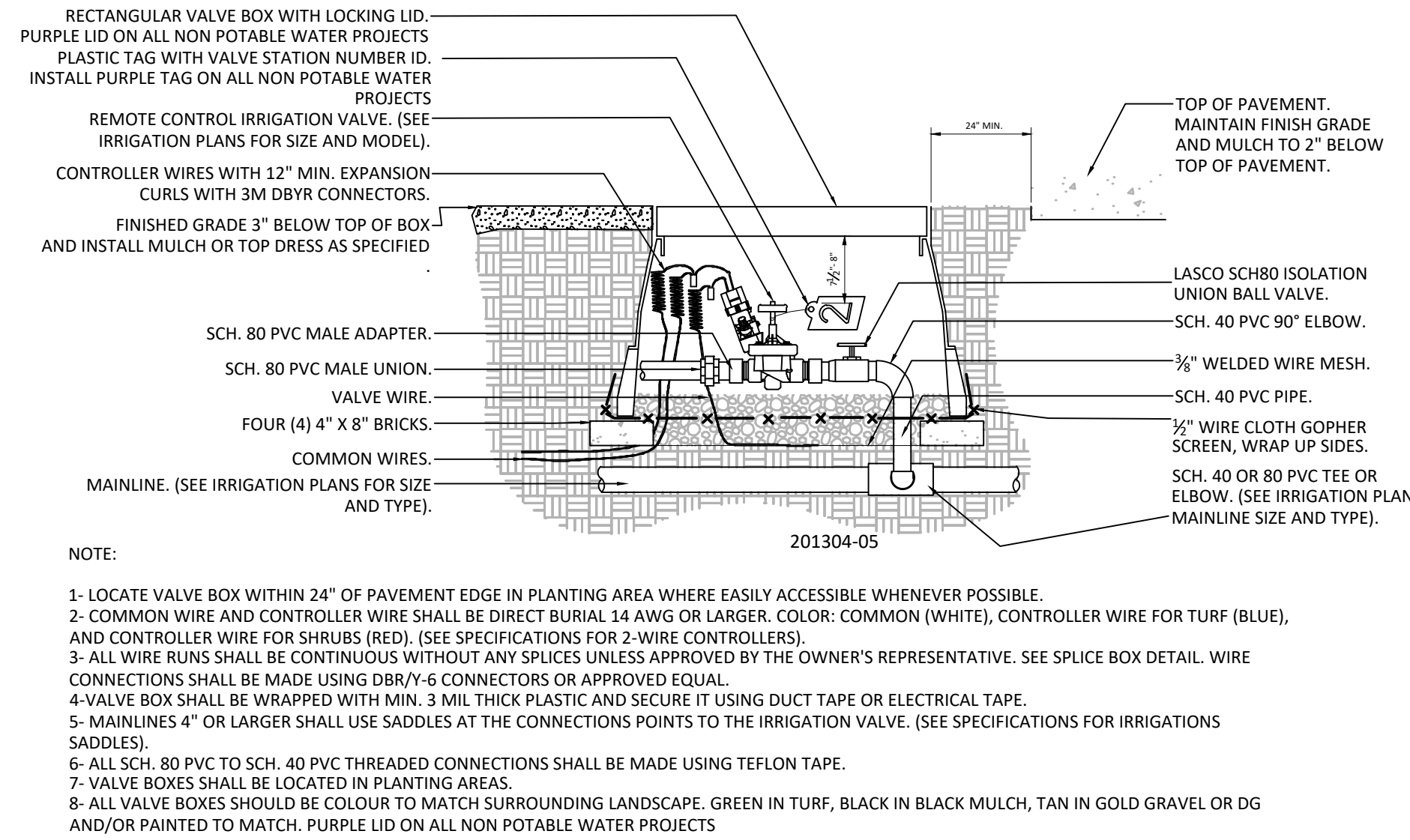


2 EXISTING RAINMASTER CONTROLLER ENCLOSURE
NTS

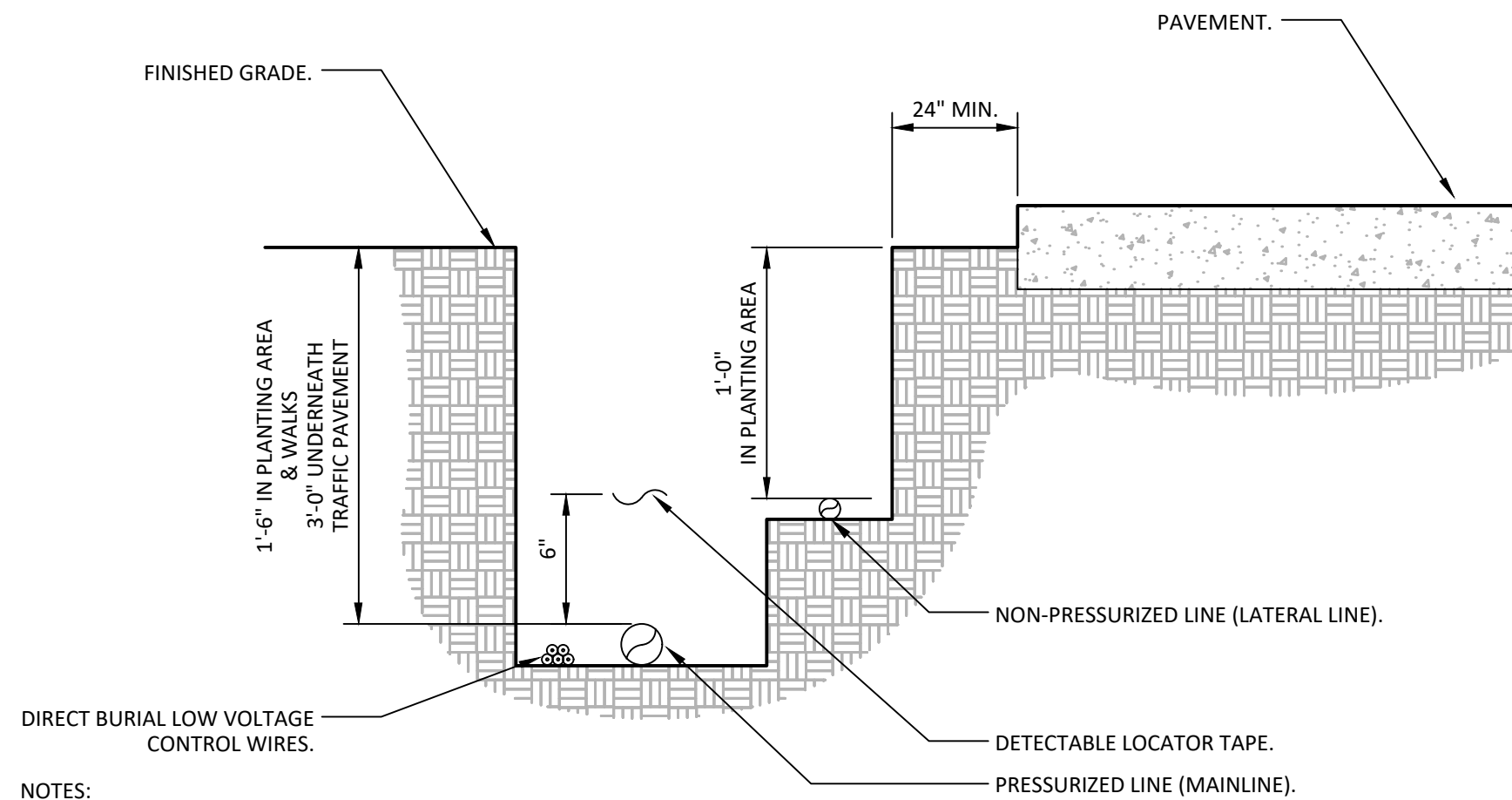
1. IMPERIAL ASSEMBLIES 16" TOP ENTRY CONTROLLER ASSEMBLY NEMA 3R RAINPROOF ENCLOSURE (UL LISTED)
2. CONTROLLER
3. POWER SWITCH/GFI RECEPTACLE
4. MASTER VALVE RELAY ASSEMBLY OR PUMP START RELAY ASSEMBLY (OPTIONAL)
5. TERMINAL BOARD
6. REMOTE RECEIVER CONNECTOR (OPTIONAL)
7. 1" PVC CONDUIT FOR 120 VAC FROM METERED POWER SUPPLY
8. PVC CONDUIT FOR CONTROL WIRES, SIZE AS REQUIRED
9. FILL VOIDS WITH 3/8" PEA GRAVEL
10. 1" PVC CONDUIT FOR FLOW SENSOR CABLE PAIGE CABLE P - 7162 - D (IF APPLICABLE)
11. POURED CONCRETE BASE



3 BRASS ISOLATION VALVE IN EXTENDED 10" VALVE BOX
NTS 201501-03



4 REMOTE CONTROL VALVE DETAIL
NTS 2015-01



- NOTES:
- 1- SEE IRRIGATION LEGEND FOR MAINLINE AND LATERAL LINE PIPE SIZE AND TYPE.
 - 2- DIRECT BURIAL CONTROL WIRES SHALL BE INSTALLED IN SCH. 40 PVC ELECTRICAL CONDUIT IF REQUIRED.
 - 3- 2-WIRE IRRIGATION WIRE SHALL BE INSTALLED IN SCH. 40 PVC ELECTRICAL CONDUIT.
 - 4- DETECTABLE LOCATOR TAPE SHALL BE LOCATED SIX INCHES (6") ABOVE THE ENTIRE MAINLINE RUN.

8 IRRIGATION TRENCHING
NTS 2006-03

General Notes



IRRIGATION DETAILS

No.	Revision/Issue	Date



Project Name and Address
MARTIN LUTHER KING JR HIGH SCHOOL
950 EL PUEBLO AVE.
PITTSBURG, CA 94565

Project Number 576-2025	Sheet # IR1.1
Date 07/21/2025	Of Total 9 Sheets
Drafted By AJBB	

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SUBMITTALS

- A. SEE THE CONTRACT GENERAL CONDITIONS FOR POLICY AND PROCEDURES RELATED TO SUBMITTALS.

B. PRODUCT DATA
1. SUBMIT A MINIMUM OF (3) COMPLETE LISTS OF ALL IRRIGATION EQUIPMENT TO BE USED, MANUFACTURER'S BROCHURES, MAINTENANCE MANUALS, WARRANTIES AND OPERATING INSTRUCTIONS, WITHIN 15 DAYS AFTER THE NOTICE TO PROCEED.

A. THIS SUBMISSION MAY BE DONE DIGITALLY AND ALL DOCUMENTS SHALL BE SUBMITTED IN ONE PDF DOCUMENT.

2. THE SUBMITTALS SHALL BE PACKAGED AND PRESENTED IN AN ORGANIZED MANNER, IN THE QUANTITY DESCRIBED IN DIVISION 1 OF THE SPECIFICATIONS. PROVIDE A TABLE OF CONTENTS OF ALL SUBMITTED ITEMS.

3. CLEARLY IDENTIFY ON EACH SUBMITTED SHEET BY UNDERLINING OR HIGHLIGHTING (ON EACH COPY) THE SPECIFIC PRODUCT BEING SUBMITTED FOR APPROVAL. FAILURE TO CLEARLY IDENTIFY THE SPECIFIC PRODUCT BEING SUBMITTED WILL RESULT IN A REJECTION FOR THE ENTIRE SUBMITTAL. NO SUBSTITUTIONS OF MATERIAL OR PROCEDURES SHALL BE MADE CONCERNING THESE DOCUMENTS WITHOUT THE WRITTEN CONSENT OF AN ACCEPTED EQUIVALENT BY THE OWNER'S REPRESENTATIVE.

4. EQUIPMENT OR MATERIALS INSTALLED OR FURNISHED WITHOUT PRIOR APPROVAL OF THE OWNER'S REPRESENTATIVE, MAY BE REJECTED BY THE OWNER'S REPRESENTATIVE AND THE CONTRACTOR SHALL BE REQUIRED TO REMOVE SUCH MATERIALS FROM THE SITE AT THEIR OWN EXPENSE.

AS BUILT RECORD SET OF DRAWINGS

- A. IMMEDIATELY UPON THE INSTALLATION OF ANY BURIED PIPE OR EQUIPMENT, THE CONTRACTOR SHALL INDICATE ON THE PROGRESS RECORD DRAWINGS THE LOCATIONS OF SAID PIPE OR EQUIPMENT. THE PROGRESS RECORD DRAWINGS SHALL BE MADE AVAILABLE AT ANY TIME FOR REVIEW BY THE OWNER'S REPRESENTATIVE.

B. BEFORE FINAL ACCEPTANCE OF WORK, THE CONTRACTOR SHALL PROVIDE AN AS BUILT RECORD SET OF DRAWINGS SHOWING THE IRRIGATION SYSTEM WORK AS BUILT. THE DRAWINGS SHALL BE TRANSMITTED TO THE OWNER'S REPRESENTATIVE IN PAPER FORMAT AND AS A PDF FILE OF EACH DOCUMENT ON COMPACT DISK OR FLASH DRIVE. THE DRAWINGS SHALL INCLUDE ALL INFORMATION SHOWN ON THE ORIGINAL CONTRACT DOCUMENT AND REVISED TO REFLECT ALL CHANGES IN THE WORK. THE DRAWINGS SHALL INCLUDE THE FOLLOWING ADDITIONAL INFORMATION
1. ALL VALVES SHALL BE NUMBERED BY STATION AND CORRESPONDING NUMBERS SHALL BE SHOWN ON THE AS BUILT RECORD SET OF DRAWINGS.

2. ALL MAIN LINE PIPE OR IRRIGATION EQUIPMENT INCLUDING SLEEVES, VALVES, CONTROLLERS, IRRIGATION WIRE RUNS WHICH DEVIATE FROM THE MAINLINE LOCATION, BACKFLOW PREVENTERS, REMOTE CONTROL VALVES, GROUNDING RODS, SHUT-OFF VALVES, RAIN SENSORS, WIRE SPLICE LOCATIONS, AND QUICK COUPLING VALVES SHALL BE LOCATED BY TWO (2) MEASURED DIMENSIONS, TO THE NEAREST ONE-HALF FOOT. DIMENSIONS SHALL BE GIVEN FROM PERMANENT OBJECTS SUCH AS BUILDINGS, SIDEWALKS, CURBS, WALLS, STRUCTURES AND DRIVEWAYS. ALL CHANGES IN DIRECTION AND DEPTH OF MAIN LINE PIPE SHALL BE NOTED EXACTLY AS INSTALLED. DIMENSIONS FOR PIPES SHALL BE SHOWN AT NO GREATER THAN A 50 FT. MAXIMUM INTERVAL.

3. AS BUILT RECORD SET OF DRAWINGS SHALL BE SIGNED AND DATED BY THE CONTRACTOR ATTESTING TO AND CERTIFYING THE ACCURACY OF THE AS BUILT RECORD SET OF DRAWINGS. AS BUILT RECORD SET OF DRAWINGS SHALL HAVE "AS BUILT RECORD SET OF DRAWINGS", COMPANY NAME, ADDRESS, PHONE NUMBER AND THE NAME OF THE PERSON WHO CREATED THE DRAWING AND THE CONTACT NAME (IF DIFFERENT).

C. THE OWNER SHALL MAKE THE ORIGINAL CONTRACT DRAWING FILES AVAILABLE TO THE CONTRACTOR.

CONTROLLER CHARTS:

- A. PROVIDE ONE CONTROLLER CHART FOR EACH AUTOMATIC CONTROLLER INSTALLED.

1. ON THE INSIDE SURFACE OF THE COVER OF EACH AUTOMATIC CONTROLLER, PREPARE AND MOUNT A COLOR-CODED CHART SHOWING THE VALVES, MAIN LINE, AND SYSTEMS SERVICED BY THAT PARTICULAR CONTROLLER. ALL VALVES SHALL BE NUMBERED TO MATCH THE OPERATION SCHEDULE AND THE DRAWINGS. ONLY THOSE AREAS CONTROLLED BY THAT CONTROLLER SHALL BE SHOWN. THIS CHART SHALL BE A PLOT PLAN, ENTIRE OR PARTIAL, SHOWING BUILDING, WALKS, ROADS AND WALLS. THE PLAN, REDUCED AS NECESSARY AND LEGIBLE IN ALL DETAILS, SHALL BE MADE TO A SIZE THAT WILL FIT INTO THE CONTROLLER COVER. THIS PRINT SHALL BE APPROVED BY THE OWNER'S REPRESENTATIVE AND SHALL BE PROTECTED IN LAMINATED IN A PLASTIC COVER AND BE SECURED TO THE INSIDE BACK OF THE CONTROLLER CABINET DOOR.

2. THE CONTROLLER CHART SHALL BE COMPLETED AND APPROVED PRIOR TO ACCEPTANCE OF THE WORK.

IRRIGATION/WATERING RESPONSIBILITY

1. IT IS THE RESPONSIBILITY OF THE MAINTENANCE CONTRACTOR TO OPERATE THE IRRIGATION SYSTEM IN AN EFFICIENT MANNER AND TO MINIMIZE WATER WASTE. IT IS THE MAINTENANCE CONTRACTOR'S RESPONSIBILITY TO ADJUST THE SYSTEM TO APPLY WATER IN ACCORDANCE WITH PLANT REQUIREMENTS BASED ON WEATHER, SOIL, AND SITE CONDITIONS. THE IRRIGATION PROGRAM SHALL BE SCHEDULED TO MINIMIZE WATER WASTE THROUGH RUNOFF, EXCESSIVE IRRIGATION RUN TIMES, UTILIZE CYCLE SOAK SCHEDULING WHEN APPLICABLE. IT IS THE RESPONSIBILITY OF THE MAINTENANCE CONTRACTOR TO OPERATE THE IRRIGATION SYSTEM BASED ON LOCAL MUNICIPAL GUIDELINES.

IRRIGATION ACTIVATION

1. ACTIVATE IRRIGATION SYSTEM IN SPRING (OR WHEN WEATHER PERMITS). CHARGE MAINLINE IN FEBRUARY OR MARCH TO CHECK FOR LEAKS AND/OR MALFUNCTIONING VALVES.

2. TURN ON BACKFLOW PREVENTERS, OPEN GATE VALVES AND ACTIVATE BOOSTER PUMPS IF INSTALLED.

3. THE IRRIGATION CONTROLLER TO RUN MODE AND VERIFY THAT ALL PROGRAMS ARE ACTIVATED AND SET UP TO BE RUN IN SELF ADJUSTED MODE.

4. VERIFICATION AND ADJUSTMENTS. THIS INCLUDES TURNING ON EACH ZONE, MONITORING FOR LEAKS OR MALFUNCTIONING PARTS, CUTTING GRASS AWAY FROM SPRINKLER HEADS AND ADJUSTING SPRINKLERS FOR PROPER ARC AND MAXIMUM EFFICIENCY.

5. VERIFY THAT DRIP IRRIGATION IS FUNCTIONAL AND THAT DISTRIBUTION TUBING HAS NOT BEEN CUT OR BROKEN DURING NON OPERATIONAL PERIOD.

6. SERVICE, CLEAN AND ADJUST AND WEATHER SENSOR SYSTEM. THIS IS CRITICAL FOR ALL SELF ADJUSTING CONTROLLERS.

7. IF APPLICABLE SERVICE IRRIGATION BOOSTER PUMP, THIS NEED TO BE COMPLETED BY THE MANUFACTURERS CERTIFIED TECHNICIAN.

IRRIGATION MONITORING/LANDSCAPE WATERING

9. CHECK THE ET/WEATHER BASED SELF ADJUSTING SYSTEM PROGRAMMING, FLOW SENSOR AND MASTER VALVE OPERATION AND PROGRAMMING; ADJUST AS REQUIRED TO ENSURE PROPER OPERATION.

10. ALL BACKFLOW PREVENTION DEVICES ARE TO BE MAINTAINED AS PER LOCAL CITY OR COUNTY CODES.

11. ALL TURF AREAS SHALL BE MONITORED TO DETERMINE THE NEED FOR SUPPLEMENTAL IRRIGATION. FREQUENCY AND DURATION OF EACH WATERING WILL BE DEPENDENT ON LOCAL WEATHER CONDITIONS. TO DETERMINE THE NEED FOR WATERING, LANDSCAPE MAINTENANCE CONTRACTOR SHALL USE A SOIL PROBE TO EXAMINE THE FIRST 6-12" OF THE SOIL PROFILE. IF THE SOIL IS COOL, DAMP AND HOLDS ITS SHAPE, WATERING IS NOT NECESSARY. PLANT MATERIAL ROOTS SHOULD BE ENCOURAGE TO ROOT AS DEEP AS POSSIBLE, THIS IS ACCOMPLISHED BY DEEP ROOT WATERING, LONGER IRRIGATION RUN TIMES AND UTILIZING CYLCE SOAK METHOD. FREQUENT SHALLOW IRRIGATION SCHEDULING IS INEFFECTIVE AND WILL ONLY PROMOTE SHALLOW ROOTING AND REQUIRE EXCESSIVE WATER WASTE.

12. GROUNDCOVER AND SHRUB BEDS SHALL BE WATERED USING AN AUTOMATIC IRRIGATION SYSTEM. THE ENTIRE GROUNDCOVER/SHRUB BED SHALL BE SOAKED TO A DEPTH TO MAXIMIZE HEALTHY PLANT ROOT GROWTH. IRRIGATION RUN TIME TO BE BASED ON IRRIGATION DEVICE PRECIPITATION RATE (NOT FLOW RATE) AND PLANT MATERIAL IRRIGATION DEMAND. (USE WUCOLS REFERENCE FOR PLANT WATERING NEEDS). IN THE EVENT OF ESTABLISHING PLANTS, OR COMPROMISED SOIL PROFILE, WATERING FREQUENCIES MAY BE ADJUSTED.

13. ESTABLISH TIME SETTINGS AND INTERVALS OF IRRIGATION WATER APPLICATION FOR EACH VALVE OF ALL IRRIGATION ZONES. MAKE ADJUSTMENTS WHEN NECESSARY TO CORRESPOND TO VARIABLE WATERING REQUIREMENTS. CHECK FOR COVERAGE AND PLUGGED EMISSION/NOZZLE DEVICES. CLEAN DEVICES AND ADJUST DEVICES WHILE

GENERAL IRRIGATION NOTES

EQUIPMENT

1. ALL POP-UP TYPE SPRINKLER HEADS INSTALLED IN SHRUB OR GROUNDCOVER AREAS SHALL BE INSTALLED SO THAT THE TOP OF THE SPRINKLER HEAD IS 2" ABOVE FINISH GRADE.

2. ALL POP-UP TYPE SPRINKLER HEADS INSTALLED IN TURF AREAS SHALL BE INSTALLED SO THAT THE TOP OF THE SPRINKLER HEAD IS FLUSH WITH ADJACENT SIDEWALK OR CURB.

3. ALL SPRINKLER HEADS SHALL BE SET PERPENDICULAR TO FINISH GRADE OF THE AREA TO BE IRRIGATED UNLESS OTHERWISE DESIGNATED ON THE PLANS.

4. ALL SPRINKLERS SHALL BE INSTALLED WITH A 'CHECK VALVE' TO PREVENT DRAINAGE FROM SPRINKLER HEAD WHEN THE SPRINKLER IS OFF. DRAINAGE OF IRRIGATION WATER THROUGH SPRINKLER HEADS WILL NOT BE ALLOWED.

5. THE SPRINKLER SYSTEM DESIGN IS BASED ON THE MINIMUM EQUIPMENT OPERATING PRESSURE OF 40 PSI AND THE MAXIMUM FLOW OF XX GPM AS SHOWN ON THE IRRIGATION DRAWINGS AT THE METER OR POINT OF CONNECTION. THE IRRIGATION CONTRACTOR SHALL VERIFY WATER PRESSURE PRIOR TO CONSTRUCTION. REPORT ANY DIFFERENCE BETWEEN THE WATER PRESSURE IRRIGATION POINT OF CONNECTION TO THE OWNER'S AUTHORIZED REPRESENTATIVE. IN THE EVENT THAT PRESSURE DIFFERENCES ARE NOT REPORTED PRIOR TO THE START OF CONSTRUCTION, THE IRRIGATION CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY REVISIONS NECESSARY.

6. 120 VOLT ELECTRICAL POWER OUTLET AT THE AUTOMATIC CONTROLLER LOCATION SHALL BE PROVIDED BY OTHERS. IT SHALL BE THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO MAKE THE FINAL HOOK-UP FROM THE ELECTRICAL OUTLET TO THE AUTOMATIC CONTROLLER.

7. WHERE APPLICABLE-TWO WIRE SYSTEM - ALL TWO WIRE DECODERS TO BE INSTALLED PER MANUFACTURERS REQUIREMENTS AND GROUNDED AS PER MANUFACTURER REQUIREMENTS. CONTACT MANUFACTURER REPRESENTATIVE FOR APPROVAL OF GROUNDING AND DECODER INSTALLATION AND SIGN OFF.

a. WHERE APPLICABLE-INSTALL ADDITIONAL TWO WIRE IN EACH VALVE BOX SO THAT WIRE CAN BE PULLED OUT OF VALVE BOX (A MINIMUM OF 24") FOR SPLICE AND DECODER SERVICING.

8. ALL MASTER VALVES/FLOW SENSORS MUST BE SET UP PRIOR TO IRRIGATION CONTROLLER CERTIFICATION.

9. WHERE APPLICABLE-BOOSTER PUMP - CONTACT BARRETT ENGINEERED PUMP REPRESENTATIVE FOR PUMP START UP AND CERTIFICATION. DURING START UP TESTING PUMP MUST BE RAN AT MAXIMUM FLOW AND PRESSURES AS REPRESENTED ON THE APPROVED IRRIGATION PLANS FOR A MINIMUM OF 30 MINUTES AND MUST BE OPERATIONAL FROM THE CONTROLLER VIA PUMP START AND NOT FLOW START.

10. THIS DESIGN IS DIAGRAMMATIC. ALL PIPING, VALVES, ETC. SHOWN WITHIN PAVED AREAS IS FOR DESIGN CLARIFICATION ONLY AND SHALL BE INSTALLED IN PLANTING AREAS. AVOID ANY CONFLICTS BETWEEN THE SPRINKLER SYSTEM, PLANTING AND ARCHITECTURAL FEATURES.

11. THE IRRIGATION CONTRACTOR SHALL FLUSH AND ADJUST ALL SPRINKLER HEADS FOR OPTIMUM PERFORMANCE AND TO PREVENT OVER-SPRAY ONTO WALKS, ROADWAYS AND/OR BUILDINGS AS MUCH AS POSSIBLE. THIS SHALL INCLUDE SELECTING THE BEST DEGREE OF ARC TO FIT THE EXISTING SITE CONDITIONS AND TO THROTTLE THE FLOW CONTROL AT EACH VALVE TO OBTAIN THE OPTIMUM OPERATING PRESSURE FOR EACH SYSTEM.

12. DO NOT WILLFULLY INSTALL THE SPRINKLER SYSTEM AS SHOWN ON THE DRAWINGS WHEN IT IS OBVIOUS IN THE FIELD THAT OBSTRUCTIONS, GRADE DIFFERENCES OR DIFFERENCES IN THE AREA DIMENSIONS EXIST THAT MIGHT NOT HAVE BEEN CONSIDERED IN THE ENGINEERING. SUCH OBSTRUCTIONS OR DIFFERENCES SHOULD BE BROUGHT TO THE ATTENTION OF THE OWNER'S AUTHORIZED REPRESENTATIVE. IN THE EVENT THAT THIS NOTIFICATION IS NOT PERFORMED, THE IRRIGATION CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY REVISIONS NECESSARY.

13. INSTALL ALL DRIP FLUSH VALVES AND DRIP INDICATORS AT HIGHEST POINT IN DRIP SYSTEM TO AVOID LOW HEAD DRAINAGE.

14. INSTALL ALL PIPE MATERIALS AND EQUIPMENT AS SHOWN IN THE DETAILS. USE TEFLON TAPE OR TEFLON PIPE DOPE ON ALL PVC MALE PIPE THREADS ON ALL SPRINKLER SWING JOINT AND VALVE ASSEMBLIES.

15. IT IS THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO FAMILIARIZE HIMSELF WITH ALL GRADE DIFFERENCES, LOCATION OF WALLS, RETAINING WALLS, ETC. HE SHALL COORDINATE HIS WORK WITH THE GENERAL CONTRACTOR AND OTHER SUB- CONTRACTORS FOR THE LOCATION AND THE INSTALLATION OF PIPE SLEEVES THROUGH WALLS, UNDER ROADWAYS, PAVING, STRUCTURES, ETC.

16. IN ADDITION TO THE CONTROL WIRE SLEEVES SHOWN ON THE DRAWINGS, THE IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF CONTROL WIRE SLEEVES OF SUFFICIENT SIZE UNDER ALL OTHER PAVED AREAS.

17. CONTRACTOR SHALL PROGRAM IRRIGATION CONTROLLER TO OPERATE AS FOLLOWS POST-CONSTRUCTION: SPRAY VALVES SHALL ONLY BE TURNED ON BETWEEN THE HOURS OF 08:00 P.M. AND 6:00 A.M. BUBBLER AND DRIP VALVES CAN OPERATE AT ANY TIME.

SYSTEM PERFORMANCE VERIFICATION

1. PRE SOD/SEED INSTALLATION - CONTRACTOR TO HIRE AN IRRIGATION AUDITOR TO CONDUCT A CATCH CAN TEST OF ALL ROTOR ZONES OF SPORTSFIELD/PARK AREAS. TEST RESULTS TO BE NOTED AND RECORDED AT EACH CATCH CAN. BASED ON IRRIGATION AUDITORS REPORT, ADJUSTMENTS TO HEAD LAYOUT OR NOZZLING MUST BE MADE PRIOR TO THE INSTALLATION OF SOD OR SEED. ALL FINDINGS MUST BE SENT TO THE LANDSCAPE ARCHITECT.

2. PER MWEO, IRRIGATION HEADS MUST BE PLACED SO THAT HARDSCAPED AREAS DRAIN TOWARD LANDSCAPED AREAS, AND WITH NO OVERSPRAY. OTHERWISE A SETBACK FROM HARDSCAPE OF 24" MINIMUM IS REQUIRED.

3. ALL LANDSCAPE AUDITS SHALL BE CONDUCTED BY A THIRD PARTY CERTIFIED LANDSCAPE IRRIGATION AUDITOR.

4. THE PROJECT APPLICANT SHALL SUBMIT AN IRRIGATION AUDIT REPORT WITH THE CERTIFICATE OF COMPLETION TO THE RESPONSIBLE LOCAL AGENCY PER WELO REQUIREMENTS.

MAINTAINING THE SYSTEM IN PROPER WORKING ORDER.

14. ALL AUTOMATIC CONTROLLERS WILL BE PROGRAMMED TO APPLY WATER DURING HOURS AS PERMITTED BY LOCAL TOWN, CITY OR COUNTY ORDINANCES.

IRRIGATION SYSTEM REPAIR

1. CLEANING AND ADJUSTING THE SPRINKLERS HEADS ARE THE MAINTENANCE CONTRACTOR'S RESPONSIBILITY. REPAIR AND/OR REPLACEMENT OF ANY VANDALIZED OR MALFUNCTIONING COMPONENT BEYOND MAINTENANCE CONTRACTOR'S CONTROL IS THE RESPONSIBILITY OF THE OWNER/AGENT. ANY DAMAGE CAUSED BY MAINTENANCE CONTRACTOR WILL BE REPAIRED BY MAINTENANCE CONTRACTOR AT NO COST TO THE OWNER/AGENT.

2. ALL IRRIGATION REPAIRED OR REPLACED MUST BE IN ACCORDANCE WITH THE ORIGINAL IRRIGATION DESIGN, LOCAL CITY OR COUNTY GUIDELINES AND MUST PROVIDE THE MAXIMUM EFFICIENCY AS POSSIBLE SO AS NOT TO WASTE WATER.

3. ALL DAMAGED AND REPAIRED PIPE MUST BE FLUSHED OF ALL DEBRIS. MAINTENANCE CONTRACTOR TO GUARANTEE FULL OPERATIONAL AND EFFICIENT PERFORMANCE OF REPAIRED SYSTEMS.

4. OREPAIRS TO BACKFLOW PREVENTION DEVICES MUST BE CONDUCTED BY A TRAINED CERTIFIED BACKFLOW TECHNICIAN.

5. IT IS RECOMMENDED THAT ALL IRRIGATION MAINTENANCE AND REPAIR BE PERFORMED BY CALIFORNIA LICENSED AND/OR CERTIFIED CONTRACTOR. NOT MAINTAINING IRRIGATION SYSTEMS IN AN EFFICIENT MANNER WILL RESULT IN PLANT AND LANDSCAPE DEGRADATION AND ADDITIONAL MAINTENANCE COSTS.

IRRIGATION SYSTEM WINTERIZATION

6. WHERE APPLICABLE, SHUT OFF AND DRAIN IRRIGATION SYSTEM(S) AT THE END OF THE IRRIGATION SEASON. TURN OFF ALL MAIN SUPPLY VALVES, OPEN ALL MANUAL DRAIN VALVES, AND BLEED VALVES ON BACKFLOW PREVENTION DEVICES. PERFORM WINTERIZATION PRIOR TO NOVEMBER 1ST.

7. IRRIGATION START UP

8. FLUSH ALL DRIP LINES AT FLUSH POINTS.

9. REMOVE AND CLEAN ALL FILTERS AND REPLACE ANY DAMAGED FILTERS.

10. CHECK THAT ALL WEATHERS SENSORS ARE FUNCTIONING AND REPLACE BATTERIES AS NEEDED.

General Notes



IRRIGATION NOTES

No.	Revision/Issue	Date

Firm Name and Address



Project Name and Address

MARTIN
LUTHER KING
JR HIGH
SCHOOL
950 EL PUEBLO AVE.
PITTSBURG, CA 94565

Project Number 576-2025	Sheet #
Date 07/21/2025	IR1.2
Drafted By AJBB	Of Total 9 Sheets

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- Irrigation/Watering Responsibility
 - It is the responsibility of the Maintenance Contractor to operate the irrigation system in an efficient manner and to minimize water waste. It is the Maintenance Contractor's responsibility to adjust the system to apply water in accordance with plant requirements based on weather, soil, and site conditions. The irrigation program shall be scheduled to minimize water waste through runoff, excessive irrigation run times, utilize CYCLE SOAK scheduling when applicable. It is the responsibility of the Maintenance Contractor to operate the irrigation system based on local municipal guidelines.
- Irrigation Activation
 - Activate irrigation system in spring (or when weather permits). Charge mainline in February or March to check for leaks and/or malfunctioning valves.
 - Turn on backflow preventers, open gate valves and activate booster pumps if installed.
 - Set the irrigation controller to RUN MODE and verify that all programs are activated and set up to be run in Self Adjusted mode.
 - Site verification and adjustments. This includes turning on each zone, monitoring for leaks or malfunctioning parts, cutting grass away from sprinkler heads and adjusting sprinklers for proper arc and maximum efficiency.
 - Verify that drip irrigation is functional and that distribution tubing has not been cut or broken during non operational period.
 - Service, clean and adjust and weather sensor system. This is critical for ALL self adjusting controllers.
 - If applicable service irrigation booster pump, this need to be completed by the manufacturers certified technician.
- Irrigation Monitoring/Landscape Watering
 - Check the ET/Weather Based self adjusting system programming, Flow Sensor and Master Valve operation and programming; adjust as required to ensure proper operation.
 - ALL Backflow Prevention Devices are to be maintained as per Local city or county codes.
 - All turf areas shall be monitored to determine the need for supplemental irrigation. Frequency and duration of each watering will be dependent on local weather conditions. To determine the need for watering, Landscape Maintenance Contractor shall use a soil probe to examine the first 6-12" of the soil profile. If the soil is cool, damp and holds its shape, watering is not necessary. Plant material roots should be encourage to root as deep as possible, this is accomplished by deep root watering, longer irrigation run times and utilizing CYLCE SOAK method. Frequent shallow irrigation scheduling is ineffective and will only promote shallow rooting and require excessive water waste.

- Groundcover and shrub beds shall be watered using an automatic irrigation system. The entire groundcover/shrub bed shall be soaked to a depth to maximize healthy plant root growth. Irrigation run time to be based on irrigation device precipitation rate (not flow rate) and plant material irrigation demand. (Use WUCOLS reference for plant watering needs). In the event of establishing plants, or compromised soil profile, watering frequencies may be adjusted.
- Establish time settings and intervals of irrigation water application for each valve of all irrigation zones. Make adjustments when necessary to correspond to variable watering requirements. Check for coverage and plugged emission/nozzle devices. Clean devices and adjust devices while maintaining the system in proper working order.
- ALL automatic controllers will be programmed to apply water during hours as permitted by local town, city or county ordinances.

Irrigation System Repair

- Cleaning and adjusting the sprinklers heads are the Maintenance Contractor's responsibility. Repair and/or replacement of any vandalized or malfunctioning component beyond Maintenance Contractor's control is the responsibility of the Owner/Agent. Any damage caused by Maintenance Contractor will be repaired by Maintenance Contractor at no cost to the Owner/Agent.
- All irrigation repaired or replaced MUST be in accordance with the original irrigation design, local city or county guidelines and must provide the maximum efficiency as possible so as NOT to waste water.
- ALL Drip systems are to be manually flushed a minimum one time per year and filters to be cleaned on a regular basis.
- All damaged and repaired pipe MUST be flushed of all debris. Maintenance Contractor to guarantee full operational and efficient performance of repaired systems.
- Repairs to Backflow Prevention Devices must be conducted by a trained certified backflow technician.
- It is recommended that ALL Irrigation maintenance and repair be performed by California Licensed and/or Certified contractor. Not maintaining irrigation systems in an efficient manner will result in plant and landscape degradation and additional maintenance costs.

Irrigation System Winterization

- Where applicable, shut off and drain irrigation system(s) at the end of the irrigation season. Turn off all main supply valves, open all manual drain valves, and bleed valves on backflow prevention devices. Perform winterization prior to November 1st.

Irrigation Start up

- Flush all drip lines at flush points.
- Remove and clean all filters and replace any damaged filters.
- Check that all weathers sensors are functioning and replace batteries as needed.

EMITTER COUNT FOR 1" VALVE

GPM	GPH	GPH	GPM	DEVICES / 1" VALVE	FLOW GPM
0.25	15	0.5	0.01	1700	14.2
0.5	30	1	0.02	850	14.2
1	60	5	0.08	180	15.0
2	120	7	0.12	100	11.7
4	240	10	0.17	90	15.0
6	360	12	0.2	75	15.0
8	480	18	0.3	50	15.0
10	600	24	0.4	37	14.8
		30	0.5	30	15.0
		60	1	15	15.0

1" VALVE BASED ON 15 GPM MAX

DRIP LINE CHART

GPH	GPM	SPACING	SQUARE FOOTAGE	FLOW GPM	PRECIP RATE
0.27	0.0045	12x12	100	0.44	0.42
0.27	0.0045	12x18	100	0.29	0.28
0.27	0.0045	12x24	100	0.22	0.21
0.27	0.0045	18x18	100	0.19	0.19
0.27	0.0045	18x24	100	0.13	0.14
0.27	0.0045	24x24	100	0.11	0.1
0.4	0.066	12x12	100	0.65	0.64
0.4	0.066	12x18	100	0.43	0.43
0.4	0.066	12x24	100	0.33	0.32
0.4	0.066	18x18	100	0.29	0.29
0.4	0.066	18x24	100	0.20	0.21
0.4	0.066	24x24	100	0.16	0.16
0.6	0.01	12x12	100	0.99	0.96
0.6	0.01	12x18	100	0.66	0.64
0.6	0.01	12x24	100	0.50	0.48
0.6	0.01	18x18	100	0.44	0.43
0.6	0.01	18x24	100	0.33	0.32
0.6	0.01	24x24	100	0.25	0.24
0.9	0.015	12x12	100	1.48	1.44
0.9	0.015	12x18	100	0.99	0.96
0.9	0.015	12x24	100	0.75	0.72
0.9	0.015	18x18	100	0.66	0.64
0.9	0.015	18x24	100	0.50	0.48
0.9	0.015	24x24	100	0.38	0.36

INLINE FORMULA

PR= 231.1 x Emitter Flow /Emitter Spacing x Row Spacing

DRIP PRECIPITATION RATES

GPH	GPM	Wt	Cr	# Devices	WA	Precip Rate
1	0.017	1	1	1	3.1	0.51
2	0.033	1.5	1	1	7.1	0.45
5	0.083	2	1	1	12.6	0.64
7	0.117	2.5	1	1	19.6	0.57
10	0.167	3	1	1	28.3	0.57
12	0.2	3.5	1	1	38.5	0.50
18	0.3	4	1	1	50.2	0.58
24	0.4	4.5	1	1	63.6	0.61
30	0.5	5	1	1	78.5	0.61
60	1	7	1	1	153.9	0.63

WETTED AREA OF SOIL TYPES

SOIL TYPE	Cr (FT)	SOIL TYPE	Cr (FT)		LEGEND
CLAY	1.0	LOAM	0.7	Cr	Soil Coefficient
CLAY LOAM	1.0	LOAMY SAND	0.4	TWt	Total Wetted Area
COURSE SAND	0.2	SANDY LOAM	0.6	WA	Wetted Area
FINE SAND	0.3	SILT LOAM	0.9		

BASIC INTAKE RATE

SOIL TYPE	BASIC INFILTRATION RATE
SANDY	Less than 1.5"/hr
SANDY LOAM	.75 - 1.25"/hr
LOAM	.75"/hr
CLAY LOAM	.40"/hr
CLAY	.20"/hr

TREE RINGS 12" O.C. EMITTER SPACING, MIN 3 RINGS PER TREE

RADIUS	CIRCUMF	TOTAL LF	FLOW RATE	TOTAL FLOW	PRECIP RATE	TOTAL FLOW/RING COUNT
18"	3.14"DIA	9.42	0.6 GPH	5 GPH	0.96"/HR	3 RINGS@ .6 GPH = 29 GPH
30"	3.14"DIA	15.7	0.6 GPH	9 GPH	0.96"/HR	4 RINGS@ .6 GPH = 47 GPH
48"	3.14"DIA	25.12	0.6 GPH	15 GPH	0.96"/HR	
60"	3.14"DIA	31.4	0.6 GPH	18 GPH	0.96"/HR	
18"	3.14"DIA	9.42	0.9 GPH	7.5 GPH	1.44"/HR	3 RINGS@ .9 GPH = 42.5 GPH
30"	3.14"DIA	15.7	0.9 GPH	13 GPH	1.44"/HR	4 RINGS@ .9 GPH = 69.5 GPH
48"	3.14"DIA	25.12	0.9 GPH	22 GPH	1.44"/HR	
60"	3.14"DIA	31.4	0.9 GPH	27 GPH	1.44"/HR	

Formula A

96.25 x GPH / 60 /Wetted Area*Cr

Formula B

1.605 x GPH / Wetted Area *Cr

IRRIGATION MAINTENANCE

PRECIPITATION RATES & SOIL INTAKE RATES

Job Name: MARTIN LUTHER KING JR

Date: 10/15/2025

California Water Efficient Landscape Worksheet									
Reference Evapotranspiration (ET _e)		49.2		Project Type		Non Residential		0.45	
Rain Fall (Inches)				Usable Rain Fall (Inches)		0			
Hydrozone # / Planting Description ^a	Plant Factor (PF)	Irrigation Method ^d	Irrigation Efficiency (IE) ^c	ETAF (PF/IE)	Landscape Area (Sq. Ft.)	ETAF x Area	Estimated Total Water Use (ETWU) ^f	Gallons Per Minute GPM	% Landscape Area
Zone#	Regular Landscape Areas								
1	TURF	0.5	ROTORS	0.75	0.67	0	0	0.00	0%
					Totals	0	0	0	0%
Special Landscape Areas									
SLA	CS TURF				1	132242	132242	4033910	100%
					1	0	0	0	0%
					1	0	0	0	0%
					1	0	0	0	0%
					Totals	132242	132242	4033910	100.00%
							ETWU Total	4033910	
							Maximum Allowed Water Allowance (MAWA) ^g	4033910	100.00%

ETAF Calculations

Regular Landscape Areas

Total ETAF x Area	0
Total Area	0
Average ETAF	0.45

Average ETAF for Regular Landscape Areas must be 0.55 or below for residential areas, and 0.45 or below for non-residential areas.

ETWU ACRE FEET

12.379615

MAWA ACRE FEET

12.379615

% ETWU OF MAWA

1.00

PASS: YES

All Landscape Areas

Total ETAF x Area	132242
Total Area	132242
Average ETAF	0.45

SUMMARY HYDROZONE		
HYDROZONE		AREA SQ FEET
HIGH WATER USE		
MODERATE WATER USE		
LOW WATER USE		
SLA		132242
TOTAL SF		132242

^a Adjustment Factor Residential 0.55 Non Residential 0.45

^b Hydrozone # / Planting Description e.g.

1.) Front lawn

2.) Low water use planting

3.) Medium water use planting

^c Irrigation Method

1.) Overhead Spray (Rotors, Spray, Precision Nozzles, Rotator Nozzles)

2.) Drip (Point Source, Bubblers, Inline)

^d Irrigation Efficiency

1.) 0.75 for Overhead Spray

2.) 0.81 for Drip

^e ETWU (Annual Gallons Required) =

Eto x 0.62 x ETAF x Area

Where 0.62 is a conversion factor to change acre-inches per acre per year to gallons per square foot per year

^f MAWA (Annual Gallons Allowed) =

(Eto-EPPT)x (0.62) (ETAF x LA) + ((1-ETAF) x SLA)

Where 0.62 is a conversion factor to change acre-inches per acre per year to gallons per square foot per year, LA is the total regular landscape area in square feet, SLA is the total special landscape area in square feet, and ETAF is 0.55 for residential areas and 0.45 for non-residential areas

Site Adjustment Factor

Residential	0.55
Non Residential	0.45

0.81 Drip	
0.81 Bubblers	
0.81 Micro Spray	
0.75 Spray	
0.75 Rotary Nozzle	
0.75 Rotor	

General Notes



MAWA-WATER USE CALCULATIONS

No.	Revision/Issue	Date
-----	----------------	------

Firm Name and Address



Project Name and Address

MARTIN
LUTHER KING
JR HIGH
SCHOOL
950 EL PUEBLO AVE.
PITTSBURG, CA 94565

Project Number

576-2025

Date

07/21/2025

Drafted By

AJBB

Sheet #

IR1.3

Of Total 9 Sheets

MWEO CALCULATIONS