

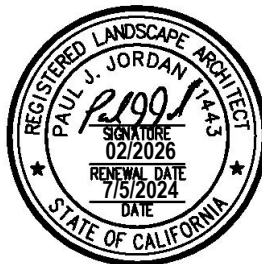
SPECIFICATIONS
FOR THE
ADMINISTRATION BUILDING LANDSCAPE RENOVATION

AT
VENTURA COLLEGE
4667 TELEGRAPH ROAD
VENTURA, CALIFORNIA 93003

FOR:
VENTURA COUNTY COMMUNITY COLLEGE DISTRICT
761 EAST DAILY DRIVE, SUITE 200
CAMARILLO, CALIFORNIA 93010

JULY 5, 2024

PREPARED BY:
JORDAN & BAIN LANDSCAPE ARCHITECTS, INC.
459 NORTH VENTURA AVENUE
VENTURA, CALIFORNIA 93001



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**SECTION 01 10 20
FENCING AND PROTECTION**

PART 1 GENERAL

1.01 SECTION INCLUDES

This section includes general requirements for temporary fencing and protection of the work area and the campus.

1.02 SUBMITTALS

Submit, for approval, all catalog cuts and or specification sheets for all temporary fencing products.

1.03 QUALITY ASSURANCE

Fencing shall be installed by a qualified fence company with a C13 license.

PART 2 PRODUCTS

2.01 TEMPORARY FENCING

Temporary fencing shall be 6 feet high chain link fence fabric attached to post and frames in a secure manner.

PART 3 EXECUTION

3.01 FENCE LAYOUT

Contractor shall submit to the District for approval, a schematic fence layout showing the location of gates, fence panels, and method of attachment of panels and post. This plan must be approved by the District prior to start of the work. Building entrances shall not be blocked.

3.02 FENCE INSTALLATION

- A. Install fencing and post so that no damage occurs to the existing underground conduits or paving. Immediately repair all damage to the existing conditions that may occur because of the fence installation.
- B. If fence panels have post with a horizontal support frame, the frame shall be visually apparent to prevent any trip hazard. Method must be approved by the District.

3.03 FENCE REPAIR

Immediately repair any damage to the fencing that may occur.

END OF SECTION 01 10 20

**SECTION 02 41 20
EXISTING LANDSCAPE REMOVALS**

PART 1 GENERAL

1.01 SECTION INCLUDES

This section includes requirements for the removal of shrubs, tree stumps, and miscellaneous landscape items.

1.02 QUALIFICATIONS

- A. Work crews shall be trained according to tree care standards accepted by the International Society of Arboriculture.
- B. Herbicide application shall be performed by a license applicator. Provide notification and signage as required by the district. Herbicide must be on the district's approved list.

1.03 PUBLIC SAFETY AND COOPERATION

- A. All Removal Work shall be conducted in a manner as to cause the least possible interference with, or annoyance to others. Pedestrian and vehicular traffic shall be allowed to pass through the Work areas only under conditions of safety and with as little inconvenience and delay as possible. Unless the Work area is totally barricaded or otherwise kept safe, at least one representative of the Contractor shall serve to coordinate safe operations on the ground at all times when Work operations are in progress.
- B. Contractor shall ensure that all fire hydrants, meter vaults, water and gas shut off valves and similar facilities are accessible during the course of Work. Contractor shall maintain clear passage and least amount of inconvenience to public traffic ways, businesses, and residences.
- C. Contractor shall strive to keep noise levels, resulting from his operations to a minimum at all times, especially during the school hours.
- D. The Contractor shall comply with all tree pruning related safety requirements as stated in the safety standards ANSI Z133.1 of the American National Standards Institute, Inc.

1.04 DAMAGE TO PUBLIC OR PRIVATE PROPERTY

Should any structure or property be damaged during the operations of the Contractor, immediately notify the district. Repairs to property damaged by the Contractor shall be made within 48 hours, except utility lines which shall be repaired the same working day. Repairs on private property shall be made in accordance with the appropriate building code under permits issued by the City. Any damage caused by the Contractor shall be repaired or restored by the Contractor at his expense to a condition similar or equal to that existing before such damage or injury, or he shall repair such damage in a manner

acceptable to the district.

PART 2 PRODUCTS

(NOT USED)

PART 3 EXECUTION

3.01 TREE STUMPS AND SHRUBS

- A. Before removing any trees, stumps and shrubs, review in the field with the District and the Landscape Architect to verify that removal designation is correct.
- B. Comply with all safety requirements of Paragraph 1.04 herein.
- C. Remove stumps in its entirety including roots within 12" of surface.
- D. Depression and voids caused by tree stump and root removal shall be returned to natural grade with clean topsoil sourced from the campus.

3.02 STUMP REMOVALS

Remove tree stumps and major anchor roots with grinding machine to a minimum depth of 12".

3.03 SITE REVIEW

Prior to start of work, walk the site with the Landscape Architect and inspector to verify all removals within the designated areas.

3.04 CLEARING AND GRUBBING

- A. Clearing and grubbing prior to fine grading.
- B. Grub out all roots 2" in diameter and larger to a depth of at least 12" below finish grade.
- C. Remove all gravel, decomposed granite, plaster liner, shrubs, grass, roots, trash, and other excavated material from the site and properly dispose of.
- D. Any broken concrete shall be removed to the nearest score line or joint and replaced.

3.05 IVY REMOVAL

Prior to removing existing ivy spray with herbicide that will penetrate the roots and kill entire plant. Wait for results prior to removing.

3.06 LANDSCAPE FINISH GRADING

- A. After the area to be cleared and prepared has been cleared and grubbed, the entire area within the limits indicated on the drawings shall be finish graded to provide positive drainage away from all buildings and slope to the existing flow lines and drain structures.
- B. During clearing and preparation provide positive controlled drainage at all times.

3.07 DUST CONTROL

During all clearing and preparation, water shall be applied to the surfaces in the working area at frequent intervals and in sufficient quantities to settle the dust. No other method will be permitted.

3.08 PROTECTION

Protect newly prepared planting area from traffic, erosion, and any settlement or washing away that may occur from any cause, prior to acceptance. If damaged, repair and re-establish grades to the required elevations and slopes, at no additional cost.

3.09 DISPOSAL OF MATERIALS

Remove debris and rubbish resulting from the Work and properly dispose of it as it accumulates. Do not store or permit debris to accumulate on the site. Do not burn debris and rubbish at the site.

3.10 SITE CLEAN-UP

Clean-up of branches, limbs, logs, or any other debris resulting from any tree operations shall be promptly and properly accomplished. The Work area shall be kept safe at all times until all operations are completed. Under no circumstances shall the accumulation of brush, limbs, logs, or other debris be allowed in such a manner as to result in a hazard to the public. All debris from removal operations shall be cleaned up each day before the Work crew leaves the site unless permission is given by the District to do otherwise. All lawn areas shall be raked, all streets and sidewalks shall be swept, and all brush, branches or other debris shall be removed from the site. Areas are to be left in a condition equal to or better than that which existed prior to the commencement of tree operations.

END OF SECTION 02 41 20

**SECTION 05 52 16
HANDRAIL**

PART 1 GENERAL

1.01 SECTION INCLUDES

This section includes general requirements for the installation of handrails at stairs.

1.02 RELATED WORK

Section 32 13 13 – Concrete Work

1.03 QUALITY ASSURANCE

The Contractor shall provide laborers and supervisors who are thoroughly familiar with the type of construction involved and materials and techniques specified.

1.04 SUBMITTALS

A. Submit shop drawings to scale showing elevation of the handrail with all welding callouts, dimensions, and all attachments.

B. Submit Manufacturer's product data on all materials used to complete the work

1.05 PRODUCT HANDLING AND STORAGE

Upon receipt at the job site, all materials shall be checked to ensure that no damages occurred during shipping or handling. Materials shall be stored in such a manner to protect against damage, weather, vandalism, and theft.

PART 2 PRODUCTS

2.01 HANDRAILS

Shall be 1-1/2-inch OD X .120 wall 304 stainless steel tube.

2.02 NON-SHRINK GROUT

Shall be Quikcrete non-shrink precision grout (no.1585-00) or eq.

PART 3 EXECUTION

3.01 PREPARATION

Handrails shall be laid out by the Contractor in accordance with the construction plans and approved shop drawings, reviewed and approved by the District prior to installation. Hot dip galvanized after fabrication, sand smooth.

3.02 POST EMBEDMENT

Core concrete for post embedment. Post shall be braced plumb and vertical to allow for the grout to cure. Embedment shall be a minimum of 9 inches.

3.03 HANDRAIL CORNERS

Shall be smooth continuous radius with premanufactured corner radius stainless steel fittings or bent by radius tube bending equipment without any crimping. If radius are larger than the details adjustment to the vertical post shall be made to make sure the horizontal section is as specified.

3.04 CLEANING

The Contractor shall clean the job site of excess materials at the end of each day.

END OF SECTION 05 52 16

SECTION 32 13 13 CONCRETE WORK

PART 1 GENERAL

1.01 SECTION INCLUDES

This section includes general requirements for the concrete paving, concrete curbs, concrete mow strips, concrete steps, and miscellaneous concrete paving work. This section also includes painting specifications for the concrete step treads.

1.02 QUALITY ASSURANCE

For concrete finishing and painting use only trained and experienced workers.

1.03 SUBMITTALS

- A. Mix design shall be submitted to the District Inspector for approval prior to pour. The mix design shall show the mix identification number and the applicable proportions, weights, and quantities of Portland cement, aggregate, water, and admixtures. The mix design submittal shall also include the size and source of aggregate, the type and source of Portland cement, the branch and designation of admixtures, and the type of construction for which the concrete is used.
- B. Submit Manufacturer's specifications and catalog cut sheet on all specified materials required for the concrete work

PART 2 PRODUCTS

2.01 CONCRETE

- A. Concrete for paving (walks) and mow strips shall be hardrock with a minimum compressive strength at 28 days of $f'c = 3,000$ PSI and conform to ASTM C-94.
- B. Cement: ASTM C-150, Type I or II, low alkali.
- C. Aggregate: ASTM C-33, non-reactive, 1 inch maximum.
- D. Slump: Maximum slump - 4 inches.

2.02 CONCRETE FINISH

- A. Walks – finish for walks and steps shall be medium broom finish.
- B. Concrete mow strips shall have a medium broom finish.

2.03 REINFORCING STEEL

- A. All reinforcing bars shall be free of rust, grease, mill scale or any material which

- might affect its bond to concrete. All bar bends shall be made cold.
- B. Reinforcing steel for Concrete Work shall be deformed and shall conform to ASTM A-615, Grade 60. No 3 bars may be grade 40. All reinforcing steel shall be positioned as indicated on Drawings.

2.04 EXPANSION JOINTS

Expansion joints shall be non-bituminous, ½" thickness, meeting ASTM Standard D-1751. (Homex 300 or equal). All expansion joints shall be caulked.

2.05 CAULKED EXPANSION JOINTS

Caulked expansion joints shall be constructed with ½ inch expansion joint material with a removal cap for caulking with a self-leveling polyurethane caulk. Caulk joints with Sikaflex + self-leveling sealant.

2.06 CURING COMPOUND

Provide liquid curing compound, ASTM C-309, clear.

2.07 BASE

Base (rock base) shall be crush aggregate base as per section 200-2.2 of the SSPWC.

2.08 SEALER

Sealer shall be a water base clear penetrating sealer.

2.09 STEP TREAD PAINT

Shall be Dunn-Edwards Evershield, 100% acrylic paint or equal. Color shall be black flat finish.

PART 3 EXECUTION

3.01 SURFACE CONDITIONS

- A. Take adequate precautions for mixing, placing, finishing, curing, and protecting concrete during unfavorable weather conditions.
- B. Prior to all work of this Section, carefully inspect the installed work of all other trades, and verify that all such work is complete to the point where this installation may properly commence.
- C. All concrete shall be properly consolidated during placement. All reinforcing steel and embedded items shall be securely tied in place to prevent displacement during concrete placement. Support reinforcement on blocks.
- D. Verify that concrete may be placed to the lines and elevations indicated on the Drawings, with all required clearance from reinforcement.

- E. Layout paving surfaces to slope and drain to planting areas at a minimum of 1%. Walkways shall not have a cross slope greater than 2% and the slope in the direction of travel shall not exceed 5%. Layout must be approved by the District Inspector prior to pour. Where concrete paving is poured adjacent to existing concrete, continue the existing slope across the new concrete section.

3.02 PREPARATION

- A. Remove all wood scraps and debris from the areas in which concrete will be placed.
- B. Thoroughly clean the areas to ensure proper placement and bonding of concrete.
- C. Thoroughly wet the forms or oil them; remove all standing water.
- D. Thoroughly clean all transporting and handling equipment.
- E. Compact base to 90% relative compaction per ASTM D-1557.

3.03 PLACING CONCRETE

- A. Convey concrete from mixer to place of final deposit by methods that will prevent separation and loss of materials.
- B. For chuting, pumping and pneumatically conveying concrete, use only equipment of such size and design as to ensure a practically continuous flow of concrete at the delivery and without loss or separation of materials.
- C. Deposit concrete as near as possible in its final position to avoid segregation due to re-handling and flowing.
- D. Place concrete as dry as possible consistent with good workmanship, never exceeding the maximum specified slump.
- E. Place concrete at such a rate that concrete is, at all times, plastic and flows readily between bare bars.
- F. When placing is once started, carry it on as a continuous operation until placement of the panel or section is complete.
- G. Thoroughly consolidate all concrete by suitable means during placement, working it around all embedded fixtures and into corners of forms.
- H. During placement, thoroughly compact the concrete by hand tamping and by mechanical vibration.

3.04 CONCRETE STEPS

Concrete steps shall have a broom finish with a radius nosing and tooled safety grooves at all treads. After steps have cured the safety grooves shall be painted with a black paint.

3.04 TOLERANCE

Concrete planes shall be checked with a ten-foot straight-edge in two directions. There shall be no high spots or low spots greater than 1/8" in ten feet. All edges shall be straight and true.

3.05 SCORE LINES AND EXPANSION JOINTS

- A. Score lines shall be straight and shall be of the proper alignment as shown on the Drawings. The score depths shall be approved prior to finishing.
- B. Expansion joints shall be straight, in line and plumb. Caulking shall be with in joint clean and straight. After calked dust on a light coating of silica sand.

3.06 CURING AND PROTECTION

Freshly deposited concrete shall be protected from premature drying and excessively hot or cold temperatures and shall be maintained without drying at a relatively constant temperature for the period of time necessary for the hydration of the cement and proper hardening of the concrete. Apply liquid curing compound as soon as finishing is complete, within 2 hours, and in accordance with Manufacturer's directions.

3.07 PAINTING STEP TREADS

- A. Concrete surface shall be cured and clean as required by the paint manufacture.
- B. Apply two coats, 1-1/2 dry mil thickness each, to the safety groove area at the step tread, mask off adjacent areas to prevent drift.
- C. Apply paint and prep concrete in accordance with the Manufacturer's submittals, as approved. Use applicators and techniques best suited for the material and surfaces to which applied. The number of coats specified is the minimum that shall be applied. Apply additional coats when undercoats, other conditions show through final paint coat, until paint film is of uniform finish, color, and appearance.

END OF SECTION 32 13 13

**SECTION 32 17 23
TACTILE WARNING STRIPS**

PART 1 GENERAL

1.01 SECTION INCLUDES

This section includes general requirements for the installation of the tactile warning strips, also referred to as truncated domes.

1.02 QUALITY ASSURANCE

Contractor must have experience in installing truncated domes.

1.03 SUBMITTALS

Submit Manufacturer's product data sheets.

1.04 PRODUCT HANDLING

Deliver materials to job site in unopened containers bearing Manufacturer's name and product description, and store in safe place until installation.

PART 2 PRODUCTS

2.01 TACTILE WARNING STRIPS / TRUNCATED DOMES

Truncated domes shall be replaceable cast-in-place detectable/tactile warning surface as manufactured by Access-Tile, or equal. Color shall be Federal Yellow. Tiles shall have a nylon composite, corrosive resistant anchor system with stainless-steel fasteners.

PART 3 EXECUTION

3.01 INSTALLATION

Set tiles in wet concrete surface and follow the manufacture's installation requirements. Tile surface width will vary as per plan. Install modules to make up the required width and the depth of three feet.

3.02 CODE COMPLIANCE

Only approved DSA-AC detectable warning products and directional surfaces shall be installed as provided by the California Code of Regulations (CCR), Title 24, Chapter 5, Articles 2,3, and 4. And 11B-705.

END OF SECTION 32 17 23

**SECTION 32 84 23
IRRIGATION SYSTEM**

PART 1 GENERAL

1.01 SECTION INCLUDES

This section includes general requirements for the installation of the irrigation system.

1.02 RELATED SECTIONS

Section 32 93 15 – Landscape Planting

1.03 CATALOG CUTS

Ten (10) days after award of Contract submit to the District for approval, five (5) copies of all Manufacturer's catalog cuts, and specifications for all required products.

1.04 RECORD DRAWINGS

- A. The Contractor shall maintain a complete and accurate set of record drawings. These drawings shall be kept up to date with the progress of the Work. The Owner shall furnish a set of drawings on which to record drawing conditions. Record drawings shall be updated on a weekly basis.
- B. The Contractor shall indicate clearly and correctly Work installed differently from that shown on the Contract Drawings by dimensioning from two permanent points of reference. Show connections to existing water lines, ball valves, pressure supply pipe, control valves, quick couplers, and control wiring.
- C. On completion of the Work, the Contractor shall submit the completed Record Drawings to the Landscape Architect for transfer to electronic file. Once complete, this final electronic file shall be reviewed by the Contractor and certified as complete and accurate records of work as built.

1.05 CONTROLLER CHARTS

Reduce the approved irrigation record drawing to a size that will fit into the irrigation controller and remain legible. Color the chart with one color for each valve and its coverage area then have a printing company encapsulated the chart in 5 mil clear plastic. Install finished controller chart in the controller.

1.06 DRAWINGS

For purposes of legibility, irrigation lines are essentially diagrammatic, although size and location of irrigation equipment are drawn to scale wherever possible. Make use of all data in all of the Contract Documents and verify this information at construction site.

1.07 MATERIALS TO BE FURNISHED

Prior to final inspection, the Contractor shall furnish the following materials to the District: Two keys for each automatic controller, Two operating wrenches to manually open and close operating nut on gate valves.

1.08 ON-SITE OBSERVATIONS

- A. The Contractor shall notify the Landscape Architect and District Inspector forty-eight hours in advance for all required On-Site Observations. The final On-Site Observation shall require seven (7) days advance notice. The following are required On-Site Observations:
1. Job start meeting.
 2. Prior to start of work review existing irrigation system adjacent to the retrofit work. Review all circuits which may be affected by the new work and review with the Landscape Architect any existing defects or deficiencies that can be determined.
 3. Review irrigation mainline with the Landscape Architect prior to backfilling. Record drawings must be current at the time of these On-Site Observations.
 4. Review with the Landscape Architect the irrigation main line when pressure test is complete. Pressure supply lines shall be tested under hydrostatic pressure of one hundred fifty pounds per square inch for a period of two hours and must be approved by the Landscape Architect prior to backfilling.
 5. Irrigation system coverage test. When the irrigation system is completed, determine if the water coverage for the planting areas is complete and adequate. Furnish all materials and perform all work required to correct any inadequacies of coverage due to deviations from the Contract Drawings. Irrigation coverage must be approved by the Landscape Architect and District Inspector before any ground cover or shrubs are planted.

PART 2 PRODUCTS

2.01 GENERAL

All irrigation equipment shall be new and unused prior to installation and shall conform to the irrigation plan and legend as specified.

2.02 MATERIALS

- A. Pipe Cable & Wire:
1. Sleeving – Schedule 40 PVC and Class 200 PVC, 3 Pipe sizes larger than the pipe to be sleeved, 24" below grade. See pipe sleeving chart on Irrigation Plan, or as noted on Irrigation Plan.
 2. Mainline – Pacific Plastics, Class 315 PVC, standard white color, 2" through 4", solvent weld, 24" below grade.
 3. Mainline – Pacific Plastics, Schedule 40 PVC, standard white color, 1 ½" and smaller, solvent weld, 24" below grade.

4. Lateral – Pacific Plastics, Schedule 40 PVC, standard white color, ¾” and larger, solvent weld, 12” below grade.
 5. Two-wire cable shall be 14-gauge wires, orange colored jacket, Hunter Model iD1ORG or Site One Green Tech Model CAB14-0, housed in a continuous 1 ¼” Schedule 40 PVC electrical conduit, 24” below grade, or approved equal.
 6. 14-gauge solid strand copper wire with polyethylene coating, white color for common wire, separate colors for each remote-control wire station, manufactured by Paige Electric or equal. All new 14-gauge wires pulled from new auto controller `c` shall be housed in a continuous 1-1/4” Schedule 40 PVC electrical conduit installed 24” below grade.
- B. Quick Coupling Valve – Rain Bird, 44 RC, 1” size, in 10” green colored round valve box.
- C. Valve Boxes
1. Valve boxes for quick couplers, drip system flush valves, and two wire system ground rods shall be 10” round, green lid, with locking bolt. Manufactured by NDS Model No. 212BCB or Carson Model No. 910-3B-Green or approved equal.
 2. Valve boxes for SCH. 80 PVC ball valves, gate valves, flow sensors, and wire pull boxes shall be standard rectangular valve boxes 14” W x 19” L x 12” D rectangular, with 6” D valve box extension, green lid, and locking bolt. Manufactured by NDS Model No. 216BCB with 6” valve box extension model 216 or Carson Model No. 1419-12-Green with 6” valve box extension model 1419-6X or approved equal.
 3. Valve boxes for remote control valve assemblies and drip remote control valve assemblies shall be jumbo rectangular valve boxes 13” W x 24” L x 15” D rectangular, green lid, and locking bolt. Manufactured by NDS Model No. 222BCB or Carson Model No. 1324-15-Green or approved equal.
 4. Valve boxes for manual drip flush valve on PVC lateral shall be 10” round, green lid, with locking bolt. Manufactured by NDS Model No. 212BCB or Carson Model No. 910-3B-Green or approved equal.
- D. Valves:
1. PVC Ball Valve for remote control valve assembly shall be line size, Schedule 80 PVC ball valve with unions in a standard rectangular valve box, green lid. Colonial/Lasco Model VXX101N-SC series or Spears Tru-Union series.
 2. Drip Remote Control Valve shall be Rain Bird Model XCZ-100-COM Series, 1” size, with pressure compensating drip filter and PVC ball valve, installed in green jumbo valve box.
 3. Remote Control Valve shall be Superior Brass Valve Model 950-DW Series, sizes noted, in a green colored Jumbo rectangular valve box.
- E. Solvents – PVC primer and solvents – as recommended by Manufacturer. Weld-on, Christy, or equal.

- F. Flexible Schedule 40 PVC Hose, PVC Flex Hose, constructed from durable, UVR, S-0214 non-rigid PVC blend materials, furnished with algae resistant compound, solvent weld, black in color, with black PVC UVR fittings I.P.S. 3/8" size, manufactured by GPH Model GPVCSAR050IRR (0.84") O.D., black in color.
- G. PVC Main Line Fittings – Main Line Fittings for pipe sizes of 2" or less, shall be Schedule 80 PVC, Type 1, Grade 1, Cell Classification 12454-B, side gated, Lasco, Spears, or equal.
- H. Nipples and Risers – Nipples and risers shall be PVC Schedule 80.
- I. Pressure Compensating Drip Emitters – Toro Model DP-09-PC (9 GPH), Toro Model DB-04-PC (4 GPH), and Toro Model T-DP-J08-F50 (2 GPH). All emitters shall be ½" FPT Body with screen check valve. No known equal.
- J. Direct Bury Splice Kit – 3M Model DBR-Y6, Hunter Model DBRY2x25, or approved equal.
- K. Pop Up Turf Spray Heads - manufactured by Rain Bird, model RD-06-S-P30-HE-VAN Series spray nozzles or Hunter model PROS-06-PRS30-CV-Pro Adjustable spray nozzles. No known equal.
- L. Auto Controller `A` – two-wire Hunter Model ICCZ Series Controller, wall mounted on interior building wall. Auto controller shall be preassembled by Site One Green Tech in a stainless-steel wall mounted security enclosure, Assembly Model No. CA03-HU10-12/EZ-DM/(500)CAB-14-0/(3)GR-K/(12)EZ-1/WIFIKIT. Contact Mr. Justin Smith of Site One Green Tech for questions on assembly model number and all required certification inspections (747/900-3696).
- M. Auto Controller `C` – Hunter Model ICCZ Series Controller, wall mounted on exterior building wall, standard wires. Auto controller shall be preassembled by Site One Green Tech in a stainless-steel wall mounted security enclosure, Assembly Model No.CA03-HU10-16/GRK/AC2WF. Contact Mr. Justin Smith of Site One Green Tech for questions on assembly model number and all required certification inspections (747/900-3696).
- N. Mainline Fittings for Mainline Pipe Sizes 2-1/2" through 4" size shall be ductile iron, epoxy coated, self-restraining fittings manufactured by Leemco Industries or approved equal.
- O. PVC Lateral Line Fittings for all pipe sizes shall be SCH. 40 PVC, Type 1, Grade 1, Cell Classification 12454-B, side gated, Lasco, Spears, or equal.
- P. Two-wire Decoders – for remote valves and ground rod details shall be Hunter Model `EZ-1` Decoder. Install per Hunter specifications. No known equal.
- Q. Root Zone Watering System shall be manufactured by Hunter, Model RZWS-36-25-CV.

PART 3 EXECUTION

3.01 SITE CONDITIONS

- A. Before starting Work on irrigation system, carefully check all grades to determine that Work may safely proceed, keeping within the specified material depths.
- B. Do not willfully install the irrigation system as indicated on the Drawings when it is obvious in the field those unknown obstructions, field dimensions, or grade differences exist, that might not have been considered in the engineering. Such obstructions or differences should be brought to the attention of the Landscape Architect.
- C. The installation of all irrigation materials, including pipe, shall be coordinated with the landscape Drawings to avoid interfering with the trees, shrubs, or other planting.
- D. Lay out irrigation heads and make any minor adjustments required due to differences between site and Drawings. Any such deviations in layout shall be within the intent of the original Drawings, and without additional cost to the District. When directed by the Landscape Architect the layout shall be approved before installation.

3.02 WATER SUPPLY

Connections shall be existing main line as indicated on the drawing. Make connections, install new main, and perform all necessary work.

3.03 PIPE FITTINGS

- A. All plastic threaded pipe and fittings shall be assembled using non-hardening sealant
- B. All plastic slip fittings shall be solvent welded as per pipe manufacturer's recommendations.

3.04 LINE CLEARANCE

All lines shall have a minimum clearance of four inches from each other, and six inches from lines of other trades. Parallel lines shall be installed directly over one another.

3.05 TRACE WIRE

3" blue colored detectable marking tape "Irrigation Water", Christy model TA-DT-3-BIRR, or equal. Install 9" below grade directly over irrigation mainline.

3.06 TRENCHING

- A. Dig trench and support pipe continuously on bottom of ditch. Snake pipe in trench to an even grade as noted.

- B. Provide minimum cover of 24 inches for all pressure supply lines.
- C. Provide minimum cover of 24 inches for all control wires.
- D. Provide minimum cover of twelve inches for all other non-pressure lines.
- E. All lines under driveway and roadway pavement shall have a twenty-four inch minimum cover below sub-grade.

3.07 BACKFILLING

- A. Backfill for trenching shall be compacted to a dry density equal to the adjacent undisturbed soil, and shall conform to the adjacent grades without dips, sunken areas, humps, or other irregularities. Initial backfill on all lines shall be of a fine granular material with no foreign matter larger than one inch in size and six to eight inches deep.
- B. All irrigation lines under paving shall be backfilled entirely with sand and compacted.
- C. Trenches shall be backfilled promptly after the open trench inspection.
- D. After initial backfill placement of 15" over mainline, place caution tape and complete backfill.

3.08 CONTROL WIRES

- A. 24-volt conductors shall be U.F. type, solid wire, U.L. approved for direct burial. Minimum size shall be 14 Ga. or as noted on drawings, used to connect remote control valve solenoids to Hunter two wire decoders, Paige Wire or approved equal.
- B. Two wire cable, Hunter or Site One Green Tech, orange colored outer PVC jacket enclosing (2) 14-gauge wires, (1) black and (1) white. Two wire cable to be housed in a continuous 1-1/4" SCH. 40 PVC electrical conduit.
- C. Wiring shall occupy the same trench and shall be installed along the same route as the pressure supply line wherever possible.
- D. An expansion loop of 48" inches shall be provided at each wire connection and/or directional turn, within all wire pull boxes.

3.09 BUBBLERS

- A. Layout proposed planting design with marking flags to indicate tree locations. Obtain approval from the District before proceeding.

- B. Trench and install laterals. Install Schedule 40 PVC piping as per plan with flexible PVC tubing segments ending adjacent to each proposed plant location root ball. Refer to irrigation details for all installation requirements and specific equipment components.
- C. Flush system thoroughly and install pressure compensating emitters as per plan.

3.10 SLEEVING

All lines under paving with PVC pipe with minimum 3 pipe sizes larger than the O.D. of the line to be sleeved. Refer to irrigation sleeving schedule on irrigation plan

3.11 FLUSHING THE MAINLINE

Make provisions to flush new main line clean and protect existing main line and existing circuits from any debris.

3.12 FLUSHING THE SYSTEM

After all new irrigation pipelines and risers are in place and connected, all necessary diversion work has been completed, and prior to installation of irrigation heads, the control valves shall be opened, and a full head of water used to flush out the system.

3.13 ADJUSTING OF SYSTEM

- A. Adjust valves, and alignment and coverage of all irrigation heads.
- B. If it is determined that adjustments in the irrigation equipment or nozzle changes will provide proper and more adequate coverage, make all necessary changes, without additional cost to the Owner, prior to any planting.
- C. The entire system shall be operating properly before any planting operations commence.
- D. Existing system, which may be affected by retrofit, should be tested for leaks, coverage, etc. before and after new installation is completed. Defective valves, etc. that were operable before installation must be repaired and/or replaced by the contractor.

3.14 CLEAN-UP AND REPAIR

- A. Upon completion of the Work, make the ground surface level, remove excess materials, rubbish, debris, etc., and remove construction and installation equipment from the premises. Dispose of in a safe and legal manner.
- B. Replace and/or repair to the satisfaction of the District all existing paving disturbed during the course of this work. New paving shall be the same type, strength, texture, finish, and be equal in every way to the material removed.

3.15 GUARANTEE

- A. The entire irrigation system shall be guaranteed by the Contractor as to material and workmanship, including settling of backfilled areas for a period of one year following the date of final acceptance of the work.
- B. This guarantee is in addition to, and not a limitation of, other rights the district may have under the Contract Documents.

END OF SECTION 32 84 23

**SECTION 32 90 20
LANDSCAPE MAINTENANCE**

PART 1 GENERAL

1.01 SECTION INCLUDES

This section includes general requirements for the landscape maintenance.

1.02 MAINTENANCE PERIOD

Once all landscape work is complete and approved by the District and all punch list items have been corrected and approved by the District, the Contractor will receive a written letter authorizing the start of the ninety-calendar day Landscape Maintenance period.

1.03 MAINTENANCE PERFORMAMNCE REVIEW SCHEDULE

The Contractor shall schedule an on-site review with the District Inspector and the Landscape Architect to review the condition of the landscape area being maintained every (30) days during the maintenance period. If any deficiencies exist, a punch list will be issued for the Contractor to address immediately. Failure to perform any punch list item in a timely manner (within 5 business days), shall delay payment for that portion of the maintenance period until the identified punch list item has been corrected. If the project is being maintained in a professional manner, VCCCD reserves the right to waive progress inspections during the (90) day maintenance period.

1.04 FINAL LANDSCAPE APPROVAL AND TURNOVER TO THE DISTRICT

At the end of the ninety-day maintenance period, the Contractor shall schedule an on-site inspection with the District Inspector and the Landscape Architect to determine if the landscape planting and irrigation is ready for the District to accept. If the landscape is not ready for acceptance, a punch list will be prepared for the Contractor to complete, and the maintenance period will extend until the punch list items have been approved by the District Inspector.

1.05 MAINTENANCE INSPECTION NOTIFICATIONS

A minimum of 48 hours is required when scheduling a maintenance on-site review.

1.06 REQUIREMENTS OF REGULATORY AGENCIES

Any required spraying work shall be done in accordance with governing agencies and the District policies. No spraying shall occur without prior written approval from the District.

PART 2 PRODUCTS

- 2.01 All materials used in conjunction with the maintenance work shall conform to the material requirements originally specified for the work. Apply at Manufacturer's recommended rate.

PART 3 EXECUTION

3.01 PEST AND DISEASE CONTROL

- A. Provide rodent, insect, pest, and disease control services at the first sign or symptom of infestations, or as directed by the District.
- B. Notify the District at the first sign or symptom of pest or disease.
- C. Perform pest and disease control services in accordance with the District policies.

3.02 TREE AND SHRUB CARE

- A. Tree pruning shall include the removal of broken, dead, or crossed branches and removal of sucker growth. Tree guys and staking shall be visually inspected and maintained in a secure manner.
- B. All walkways shall be kept clear for safe pedestrian passage.
- C. Shrub care shall include the clearance of mulch and any debris that accumulates around the shrub crown.
- D. Shrub areas shall be kept weed free by manually removing any weeds that appear on the weekly visit.
- E. If any plant dies for any reason or is damaged for any reason during the maintenance period, the Contractor shall replant as originally specified at no cost to the District.

3.03 IRRIGATION SYSTEMS

- A. Irrigation system maintenance shall include, operating, adjusting, and repairing the irrigation system to perform as designed.
- B. On each visit, visually and hydraulically inspect the irrigation system to ensure that no sprinkler breakage has occurred, no foreign matter is clogging the sprinkler heads and that sprinkler coverage and arc of sprays is proper and shall correct any other inadequacies that might impair the proper performance of the irrigation system. Minor irrigation repairs shall be accomplished by the weekly maintenance crew as needed with the like kind materials unless otherwise authorized by the District.

- C. Malfunctioning valves shall be brought to the attention of the District for approval of appropriate repair.
- D. Notify the District immediately of any system failure or disruption in order that steps can be taken to rectify the problem.

3.04 HARDSCAPED AREAS

Maintain all hardscape areas weed-free. Use of chemicals is elective with Contractor, subject to prior approval by District Inspector, and shall conform as specified. The use of toxic chemicals shall require proof of proper permit for use on this jobsite. Weed control shall be performed as often as needed or required.

3.05 IRRIGATION SCHEDULING

At least once every two weeks, the Contractor shall review water requirements of the project by probing in at least one area covered by each sectional valve and ascertaining the anticipated water requirements, adjusting the automatic controller accordingly. Particular attention shall be given to avoid applying more water than the soil can absorb at one time. Where more water is required than the soil can take at one time, Contractor shall set the automatic timer for repeat cycles at short intervals to satisfy the ultimate water demand. In no cases shall water be allowed to run across the surface of the ground.

END OF SECTION 32 90 20

**SECTION 32 93 15
LANDSCAPE PLANTING**

PART 1 GENERAL

1.01 SECTION INCLUDES

This section includes requirements for the installation of the plant material.

1.02 RELATED SECTIONS

Section 02 41 20 – Existing Landscape Removals
Section 32 84 23 – Irrigation System
Section 32 90 20 – Landscape Maintenance

1.03 SUBMITTALS

- A. Furnish material invoices indicating the quantities of fertilizers, soil amendments, and all materials delivered to the job site. Material invoices must be approved by the Landscape Architect prior to incorporating soil amendments. Certificates shall be prepared by the supplier or distributor and shall indicate the quantities and qualities of materials used.
- B. Plant Material – Submit clear photos of all plant material specified taken and the source. Indicate plant material height and spread measured at the source. Photos must clearly show the plant quality and size. The Landscape Architect will determine if the photos meet the specifications and if further site inspection at the nursery is required or if another source is required to produce the specified plant material.

1.04 PROTECTION

- A. Contractor shall check or locate existing structures, electric cables or conduits, utility lines and other existing features or conditions above or below ground level that might be damaged as a result of the operation. Questions or conflicts arising out of such examination prior to or during operation shall be immediately directed to the attention of the District for necessary action or decisions before resuming operation. Contractor shall be responsible for repair or replacement at no cost to the District for features or conditions damaged through failure to comply with the above procedures.
- B. Protect existing trees and tree roots from any damage that may be caused as a result of any planting or irrigation operations.

1.05 ALTERNATES

Alternates will not be permitted, except where indicated, and as approved by the Landscape Architect.

1.06 LANDSCAPE ON-SITE OBSERVATIONS

- A. The Contractor shall notify the district and the Landscape Architect forty-eight (48) hours in advance for all required On-Site Observations. The final On-Site Observation shall require seven (7) days advance notice.
- B. The Contractor shall submit for approval a complete work schedule indicating tentative dates for On-Site Observations.
- C. Record drawings shall be current and present at the time of On-Site Observations and shall be updated on a weekly basis.
- D. Landscape On-Site Observations shall be required for the following phases of Work:
 - 1. Job start meeting.
 - 2. Finish grading - When all fine grading work is complete, notify the Landscape Architect for approval prior to proceeding with the planting.
 - 3. Soil Preparation - furnish certificates for soil amendments at this time. Quantities must be reviewed by the Landscape Architect prior to incorporating into soil. When all soil preparation work is complete notify the Landscape Architect for approval prior to proceeding with the work.
 - 4. Irrigation System Review - See Irrigation Section.
 - 5. Review plant material for quality prior to planting. The Landscape Architect has the right to reject any plant material that it deems unacceptable at time of delivery.
 - 6. Review planting during the planting process.
 - 7. Review planting after installation.
 - 8. Pre-maintenance - When all Work has been completed a pre-maintenance walk thru shall be conducted and the contractor must receive approval from the District prior to starting the maintenance period.
 - 9. Maintenance - Notify the District and the Landscape Architect after the maintenance period has progressed for thirty days for a review of all work and make all corrections that are deemed necessary.
 - 10. Final Review - After the ninety-day (90) maintenance period is complete notify the District and the Landscape Architect for a final review of all work. All work must receive approval from the District and the Landscape Architect prior to being deemed complete and or filing a notice of completion.

1.07 QUALITY

All plant material shall have a growth habit normal to the species and shall be sound, healthy, vigorous, and free from insect pests, plant diseases, sun scalds, fresh bark abrasions, excessive abrasions, or other objectionable disfigurements. Tree trunks shall be sturdy and well "hardened off." All plants shall have normal well-developed branch systems, and vigorous and fibrous roots systems which are neither root- nor pot-bound and are free of kinked or girdling roots.

1.08 GUARANTEE

All plant material shall be guaranteed for one year. This guarantee is in addition to, and not a limitation of, other rights the District may have under the Contract Document.

PART 2 PRODUCTS

2.01 MATERIALS – LANDSCAPE

- A. Trees: varieties, sizes, and quantities, as noted on plans.
- B. Tree Stakes: Tree Stakes shall be 2" diameter Lodgepole pine, pressure treated with Chemonite (ACZA) @ .40 pounds per cubic foot, for in-ground rating. Stakes shall be 10 feet long. Horizontal supports shall be 1x6 cedar.
- C. Tree Ties: Tree Ties shall be virgin flexible vinyl, meeting ASTM-D-412, with U.V. inhibitor. 24" inches long. (Cinch Ties of eq.)
- D. Soil Amendments: Organic soil amendment shall be Agromin "Agromend," or equal.
- E. Shrubs: varieties, sizes and quantities as noted on the plans.
- F. Pre-Emergent Herbicide. Once planting operations and fine grading work has been completed, apply a preemergence herbicide over the exposed soil surface prior to the installation of both weed fabric and mulch. Apply the preemergence as required by the manufacturer's specifications and application instructions.
- G. Mulch shall be Del-Rio 3/8 Inch rock. Finish grade soil in all planters to a smooth uniform surface suitable for both weed fabric and mulch installation. Install weed fabric first then cover weed fabric with a two-inch layer of mulch throughout specified planting areas. Keep mulch away from direct contact with both shrub and tree crowns. Dress mulch areas to present a clean, uniform appearance when completed.
- H. Weed Fabric: Mirafi model 'Mscape' install on all shrub and mulch covered planting areas. Secure fabric to soil using 6" long metal soil staples spaced 5'-0" o.c. in a triangular pattern.

2.02 SOIL AMENDMENTS

- A. Pre-plant amendments to be incorporated into the top 6 inches of soil throughout all planting areas:
 - 1. Organic Amendments – 6 cu. yds. per 1,000 sq. ft.
 - 2. Soil Sulfur – 25 lbs. per 1,000 sq. ft.
 - 3. Nitrogen Fertilizer – 1.1 lbs. per 1,000 sq. ft.
 - 4. Iron (Fe) – 0.10 lbs. per 1,000 sq. ft.
 - 5. Boron (B) – 0.01 lbs. per 1,000 sq. ft.

- B. Tree and Shrub backfill mix:
 - 1. Native Site Soil – 66%
 - 2. Organic Amendments – 33%
 - 3. Commercial Fertilizer (15-15-15) – 1.0 lbs. per cu. yd.
 - 4. Iron – 2.0 oz per cu. yd.
 - 5. Zinc – 1.0 oz per cu. yd.
 - 6. Manganese – 1.0 oz per cu. yd.

2.03 ROOT BARRIERS

Shall be linear barriers 24" deep by 2 feet long attached to the length as per plan; manufactured by Deeproot or equal.

2.04 METAL EDGE

The metal edge material between the decomposed granite paving and the planting area shall be 1/8" X 4" black powder coated steel edging as manufactured by the J D Russel Company or equal.

PART 3 EXECUTION

3.01 SITE CONDITION

No plant materials shall be planted until all operations in conjunction with the installation of the irrigation system have been approved by the District and the Landscape Architect. Final grades shall be established, and the planting areas shall be properly prepared and graded.

3.02 GROUND PREPARATION – ALL AREAS

- A. After the Site Clearance and Preparation has been approved by the District, planted areas shall be thoroughly cultivated to a depth of six inches to reduce any compaction, which occurs as a result of construction. Protect existing tree roots.
- B. Stones or rocks over 1" in size, construction refuse, and other deleterious material shall be removed from the site, safely and legally disposed of.
- C. Apply soil preparation materials to all planting areas and thoroughly incorporate into the top six inches of soil or as directed by soil scientist report.
- D. Wet soil thoroughly and allow to settle. Repeat this compaction procedure until soil is stable enough to permit aeration and drainage for plant material.
- E. Finish grade all planting areas to a smooth, uniform surface ready for planting. Finish grade shall be one inch below finish grade of adjacent paved surfaces unless otherwise noted on Drawings.

3.03 TREE STAKING

Stake each tree with four lodge pole stakes, firmly set into the grade and in alignment forming a square. Secure the four poles with 1x6 cedar horizontal supports, attach with deck screws. Secure tree trunk with cinch ties.

3.04 PLANTING – TREES & SHRUBS

- A. Trees and shrub planting shall comply with details on drawings.
- B. Make necessary adjustments and excavate pits of square outline and vertical sides for all plants. Scarify sides and bottoms of all plant pits. Set trees vertical.
- C. Protect roots or ball of plants at all times from sun and drying winds.
- D. If directed by the Landscape Architect, the Contractor shall prune plants in accordance with standard horticultural practice.
- E. Wet soil thoroughly and allow to settle. Repeat this compaction procedure until soil is stable enough to permit aeration and drainage for plant material.

3.05 ROOT BARRIER

Install tree root barriers in the total lengths as shown on the plans and details. The vertical root deflecting ribs shall be facing inwards to the rootball, and the double top edge shall be set 2 inches above the finish grade. Panels shall be connected with the flexible joiner strips to the required overall length. Install panels straight, uniform in a vertical position.

3.06 MULCH

Install two-inch layer of mulch throughout shrub areas where indicated on the plan.. Finish grade shrub areas to a smooth uniform surface to receive mulch. Keep mulch away from tree and shrub crown. Dress mulch areas to present a clean uniform appearance when complete.

3.07 LANDSCAPE WEED FABRIC

Applied throughout all planting areas. Overlap fabric six inches and staple with 6-inch galvanized staples at 24 inches along the border and 36 inches in the field. Cut out just enough room for the shrub and tree planting pit. Secure the fabric around each planting pit with staples.

END OF SECTION 32 93 15