

SPECIAL PROVISIONS SECTION SP-28**IRRIGATION SYSTEM**

(BID ITEM NO. 58, 59)

The provisions of Section 19, "Landscape Irrigation," of the Technical Provisions of the Standard Specifications shall apply in its entirety, except as modified or supplemented herein.

SP28-01 GENERAL

Work requires installation of a system to irrigate new planter areas by connecting to an existing water service (1 ½ - inch water meter) and integrating an existing automatic irrigation controller to control the new irrigation facilities installed under Contract.

Contractor shall coordinate the project design with existing field conditions to facilitate the required connections to existing facilities and equipment. At minimum, Contractor shall request and attend a field coordination meeting with the Engineer at least five (5) working days in advance of beginning any irrigation work to familiarize himself with the existing water service and controller locations, setup, and any other relevant field conditions.

SP28-02 MATERIALS AND INSTALLATION

1. **Pipe and Fittings.** Main lines (constant pressure) shall be polyvinylchloride (PVC) 1120, Class 315. Use Class 315 PVC solvent weld fittings as approved by the Uniform Plumbing Code.

When making solvent weld joints, joints shall be cured for at least thirty (30) minutes before handling. When assembling metallic pipe to metallic fitting or valve, no more than three (3) full threads shall show when the joint is made up. When assembling soft metal (brass or copper) or plastic pipes, only strap-type friction wrench shall be used. Metal-jawed wrench shall not be allowed to use.

When pipes or control wires pass through sleeves, removable non-decaying plugs shall be installed at ends of sleeves to prevent intrusion of dirt.

2. **Controller.** Existing controller is Rain Master Evolution DX2 Series. Contractor shall inspect controller prior to beginning work to familiarize himself with its components and functions. Contractor shall make all necessary connections and install an initial program to operate the irrigation system installed under Contract. The program shall at least satisfy the watering requirements of the irrigation and landscaping system maintenance specified in these Special Provisions and Contract plans.

Contractor shall connect control lines to controller in sequential arrangement according to assigned identification number of valves. Each control line wire shall be labeled as specified in the Technical Provisions.

3. **Valves and Sensors.** Remote control valves shall be globe pattern with brass body and bonnet, with brass flow stem and manual bleed petcock. Valve box shall be Carson Model 1419 black, with lid

and bolt down. Master valve shall be brass body and normally opened. Flow sensor valve shall be brass body. All valve sizes shall be as required by the Project Plans.

Flow sensor shall be located between upstream master valve and downstream fitting, and installed per details shown on the Plans.

4. Backflow Prevention Device. Contractor's installations shall utilize an existing backflow prevention device. Contractor shall test the device to confirm its operation, and make any minor repairs and adjustments as required to integrate the device into the Work. Contractor shall furnish and install an enclosure for the existing device in conformance with the details shown on the Project Plans, including a concrete housekeeping pad.

SP28-03 TRENCHING

Trenching shall conform to Section 19-4.2 of the Technical Provisions and Section SP27-11 of these Special Provisions. Contractor's attention is directed to the joint trenches required by Contract. Irrigation pipes and sleeves shall be coordinated with trenching for street light installation as shown on the Plans and as specified in Section SP-27 of these Special Provisions.

SP28-04 TESTING

In performing testing of pipes, Contractor shall center load them with small amounts of backfill to prevent arching and slipping under pressure. No fittings shall be covered during the tests. Lateral lines shall be visually inspected while under line pressure.

SP28-05 MAINTENANCE

The Contract maintenance period is 30 days. Prior to start of maintenance period Contractor shall submit a written letter to include the maintenance schedule to include day and approximate time of the visit, name and phone number of the person performing the work. During the maintenance period, the entire system shall be observed for proper coverage, with no overly dry or wet areas. Contractor shall operate and appropriately adjust the irrigation controller program(s) accounting for the site conditions, season, plant requirements, and water conservation.

All sprinkler, emitter, and bubbler heads shall be inspected during each watering to ensure the proper distribution and spray pattern. Locations of heads shall be adjusted as necessary. All valves shall be visually inspected for leaks. Any repair or replacement shall be in-kind with the original approved installation.

Upon completion of maintenance period, Contractor shall submit a log of maintenance visits, with dates, times, and names of personnel, documenting activities performed during each visit, as proof of having fulfilled the maintenance obligations under Contract.

Contractor shall provide three (3) each of all operating and servicing keys and wrenches required for complete maintenance and operation of all heads, valves, and locks, including all wrenches necessary for complete disassembly of heads and valves.

Contractor shall provide to City record drawings of the installation as required by the Project Specifications. In said drawings, all underground stub-outs for future connections and valves, if any, shall be located and dimensioned accurately from adjacent building walls and faces of curb.

SP28-06 MEASUREMENT AND PAYMENT

The Contract Lump Sum Price paid for “**Irrigation**” shall be considered full compensation for all labor, materials, tools, equipment, and incidentals to install a complete, fully functional irrigation system in place to provide full coverage of the landscape areas in Contract, including but not be limited to: trenching and excavation; furnishing and installing all pipes and sleeves not included in electrical joint trenches, joints, sleeves, valves of all kinds, flow sensor, emitters , bubbler, and sprinkler heads, all wires and all electrical components; electrical connections; all minor adjustments, and modifications to existing facilities and equipment to connect to Contract installations; irrigation system testing; and all other work as shown on the Plans, specified in the Standard Specifications and these Special Provisions, and as directed by the Engineer, and no other payment shall be allowed therefor.

The Contract price paid for each “**Backflow Preventer Enclosure**” shall be considered full compensation for all labor, materials, tools, equipment, and incidentals to install a new backflow preventer enclosure over the existing backflow preventer device complete in place, including but not be limited to all necessary modifications and/or replacement of concrete housekeeping pad, and all other work as shown on the Plans, specified in the Standard Specifications and these Special Provisions, and as directed by the Engineer, and no other payment shall be allowed therefor.

There shall be no separate payment for pipes and sleeves installed in joint trenches with electrical facilities. Compensation for pipes and sleeves not installed in joint trenches, and all wires of any kind installed anywhere within Project, shall be considered to be included in the Contract Payment for “Irrigation” above, and no additional payment shall be made therefor.

Attention is directed Section SP-29 for payment for irrigation system maintenance.

SPECIAL PROVISIONS SECTION SP-29**LANDSCAPING**

(BID ITEM NO. 60 through 68)

The provisions of Section 20, "Landscaping," of the Technical Provisions of the Standard Specifications shall apply in its entirety except as modified or supplemented herein.

SP29-01 GENERAL

Plant names in the Contract Documents conform to standardized names established by the American Joint Committee on Horticulture Nomenclature. Where not covered, the established custom of the nursery trade is used.

Contractor shall submit samples with product information sheet or certificate for the following:
Tree ties, compost, fertilizers, and mulch.

Contractor shall submit certificate of compliance or testing lab material certifications for the following:
Compost, fertilizers.

SP29-02 MATERIALS AND INSTALLATION

1. Plants and Trees. Container stock shall have been grown in containers in which plants are delivered for at least eight (8) months, but shall not be root bound. Roots shall extend to the bottom and sides of the container with no signs of restriction due to kinks, circular, or contorted growth, or deformed or circling roots. Roots shall be healthy and extensive enough to hold the rootball together during planting, but not so dense as to discourage root establishment into the surrounding soil. Container plants with cracked or broken balls of dirt when removed from containers shall be rejected.

Within the range of height and spread for each plant stock size provided, at least 75% of plants provided shall be equal to the largest size in each range.

Planting holes shall be square to the sizes and depths indicated on the Plans.

Pruning shall be at the direction of the Engineer only, and shall be performed by an arborist or tree worker, certified by the International Society of Arboriculture (ISA), in accordance with techniques adopted by the ISA.

2. Topsoil. Topsoil for planting area and screened soil for the additional excavations at the median tree holes shall be furnished by City and installed by Contractor per Section 20-2.6 of the Technical Provisions. Topsoil shall be placed in lifts no greater than six (6) inches and foot-tamped at plant locations to prevent settling. Areas to receive topsoil shall be scarified to a depth of at least six (6) inches when adjacent to sidewalk, and at least 18 inches in median planters. The initial layer of topsoil shall be rototilled, or hand worked if tree roots are encountered, and mixed into native soil to create a composite zone prior to placing additional topsoil layers to the depths specified on the Plans.

Topsoil shall be at optimum moisture content for planting. Contractor shall not plant in dry or muddy soil.

3. Organic Compost. City may accept “Super Humus,” as available from BFI Organics and Redi-Gro Corp (408) 888-7632, or approved equal, conforming to Section 20-2.7 of the Technical Provisions and these Special Provisions.

Compost shall be free of contaminants such as glass, metal, and plastic. The material shall be soil-like without recognizable grass, leaves, or wood pieces, and has physical characteristics suggestive of maturity. Color shall be dark brown to black, with no sour or putrid odor, or odor of ammonia.

Spread compost evenly over the entire plant area and incorporate into top 6” of soil by repeated rotary-hoe cultivation or by hand if roots are encountered.

Compost shall conform to the following gradation:

Gradation	
Percent Passing	Sieve Size
85-100	9.51 mm (3/8 inch)
50-80	2.38 mm (No. 8, 8 mesh)
0-40	500 micron (No. 35, 32 mesh)

4. Fertilizers. Contractor shall not use synthetic, quick-release fertilizers, or those prohibited in the Generic Materials List by the Organic Materials Review Institute (OMRI). No fertilizer shall be used at native California plants (*Quercus Virginiana* and *Arctostaphylos Uva-Ursi* ‘Emerald Carpet’).
5. Tree Ties. Contractor may furnish products conforming to the Project Specifications from Gro-Strait, telephone 707.745.4330.
6. Root Barrier. Contractor shall furnish and install along entire length of medians as shown on the plans.
7. Mulch. Black mini bark from Contra Costa Topsoil, matching that in the existing median planter on Mt. Diablo Boulevard immediately west of Moraga Road, adjacent to the Project Location. Contractor shall submit a sample of sufficient size to represent the materials to be furnished.

Mulch shall be installed at all landscaped areas as shown on the Plans, as well as existing and new planting areas along the sidewalk and around curb ramps that are designated on the Plans but not receiving landscape planting. At locations not receiving landscape planting, Contractor shall remove existing soil and other materials to a depth of 4 inches as measured from the top of adjacent curb or sidewalk grade. Plastic Visqueen sheets (minimum 5 mils thickness) shall be placed on the native subgrade. Joints shall be overlapped by at least 4 inches. The area shall then be backfilled with mulch to a thickness of at least 3 inches.

8. Percolation Test. Provisions of Section 20-4.3, "Water Test Selected Plant Holes," of the Technical Provisions of the Standard Specifications shall apply in its entirety except as modified and or supplemented herein. Contractor shall test one excavated tree planting hole in each median planter. The exact location will be selected by the Engineer. The test hole shall be 3 feet square by 5 feet deep as measured from existing grade (similar to the depth of excavation required for box trees). Contractor shall exercise care to produce a square excavation with vertical sides and a flat floor for the bottom 2 feet of each test hole. Test holes shall be filled with water to a depth of 2 feet.
9. Drainage Chimney (Bid Alternate No. 1)- If in the opinion of the Engineer a drainage mitigation measure is necessary, contractor shall install the drainage chimney in accordance to the detail shown on the plans and the at locations specified by the Engineer.

SP29-03 MAINTENANCE

The Contract maintenance period is thirty (30) days.

SP29-04 MEASUREMENT & PAYMENT

The Contract Price per cubic yard for "**Imported Topsoil Placement**" shall be considered full compensation for all labor, material, tools, and equipment, and incidentals to coordinate and take delivery of topsoil and screened soil furnished by City and install same in designated areas, including but not be limited to- cleaning and preparing site; scarifying native soil; receiving, handling, conditioning, placing, grading, and compacting top soil as shown on the Plans, as specified in the Standard Specification and these Special Provisions, and as directed by the Engineer, and no additional compensation shall be made therefor. The quantity shown on the Bid Schedule shall be a "Final Pay Quantity" in accordance with the provisions of Section 9-6 of the General Provisions.

"**Tree Planting and Staking, 24" Box,**" "**Tree Planting and Staking, 15-Gallon,**" "**Shrub Planting, 5-Gallon,**" and "**Groundcover Planting, 1-Gallon**" shall be paid at the contract unit price per each. "**Mulch**" and "**Compost Amendment**" shall be paid at the Contract Price per cubic yard. Said Contract Prices shall be considered full compensation for all labor, materials, tools, equipment, and incidentals to plant trees, shrubs, groundcover, and to furnish and place organic compost and mulch, including but not be limited to- percolation testing, excavations to various depths, grading, spreading and mixing of compost, planting, staking, fertilizing, dressing with mulch, placement of plastic Visqueen where required, clean-up, and all other work in accordance with the Contract Documents, and no additional compensation shall be allowed thereafter.

"**Root Barrier**" shall be paid at the contract price per linear feet and shall be considered full compensation for all labor, materials, tools, equipment, and incidentals required to perform all work, including excavation and backfill as specified in these Special Provisions, as shown on the Plans, and as directed by the Engineer; and no additional compensation shall be made therefor.

"**Landscape & Irrigation Maintenance**" shall be paid at the contract lump sum price, which shall be considered full compensation for furnishing all personnel, labor, materials, tools, equipment, and incidentals required for maintaining the irrigation system and planting, and to perform all work as

specified in these Special Provisions, as shown on the Plans, and as directed by the Engineer; and no additional compensation shall be made therefor.

Bid Alternate No. 1

The Contract Price per each for the “**Drainage Chimney**” shall be considered full compensation for all labor, materials, tools, equipment, and incidentals to furnish and install drainage chimney at each selected tree planting hole as shown on the plans and as required by the Contract Documents, and no additional compensation shall be allowed thereafter.

SPECIAL PROVISIONS SECTION SP-30**BRICK PAVERS**
(BID ITEM NO. 37, 38)**SP30-01 GENERAL**

Preparatory work to install brick pavers shall conform to all applicable Sections of the Technical Provisions of the Standard Specifications including but not be limited to the following sections:

- Section 3, "Earthwork"
- Section 6, "Subgrade Preparation"
- Section 8, "Aggregate Base"
- Section 17, "Concrete Construction"

Contractor's attention is also directed to sections in these Special Provisions corresponding to the above disciplines.

SP30-02 MATERIAL

Brick pavers shall be interlocking Basalite, Spectrum, red/brown, or approved equal. Pavers shall be 80mm thick in all areas.

Pavers shall be free of cracks, seams, or other imperfections that impair their structural integrity or function. Only inherent color variations characteristic of the quarry from which they are obtained shall be acceptable.

Ten (10) working days prior to ordering materials, Contractor shall submit samples of sufficient number and size to represent a full range of color, texture, and finish specified for approval by the Engineer. Contractor shall obtain unit pavers from a manufacturer having adequate capacity to meet specified requirements and scope of Work. Contractor shall not change source of supply without permission of Engineer.

Sand for leveling course shall be free of deleterious materials, uniformly graded, 100% passing No. 8 sieve and 35% passing No. 50 sieve. Sand leveling bed shall be maximum 1" thick unless otherwise detailed on the Plans.

Mortar shall be commercial grade, conforming to Section 51-1.02C, "Bonding Materials," of the State Specifications.

SP30-03 INSTALLATION

Pavers shall be installed over sand in non-vehicular-traffic areas, or adhered by mortar to underlying reinforced concrete, as shown on the Contract Plans and in accordance with manufacturer's installation instructions. Both conditions shall have an aggregate base subbase. Pavers shall be placed to a tolerance of no more than 1/8-inch over a 10-foot horizontal run. Edge-to-edge alignments between two units that form a continuous plane shall be flush with zero tolerance. Chipped, cracked, or broken pavers shall not be used.

Pavers shall not be cut to a dimension of less than 3” in any direction. Standard start points may be noted on the Plans. Otherwise, Contractor shall discuss start-point layout with Engineer in the field and obtain approval prior to beginning work. Any unusual conditions shall also be reviewed with the Engineer prior to installation.

Where shown on the Plans, concrete bands shall be constructed along one or more perimeters of areas to receive brick pavers. Bands shall be 6 or 12 inches wide as shown on the Plans and comply with these Special Provisions for standard concrete curbs.

At locations where pavers abut existing structures (buildings, building foundations, planters), Contractor shall provide joint material consisting of preformed cork strips complying with ASTM D1752 for Type II or preformed sponge rubber strips complying with ASTM D1752 for Type I. Installation shall be per manufacturer’s recommendations.

Fine sand shall be spread over pavers, swept into joints and vibrated into place for a tight finish.

Contractor shall coordinate the placement of asphalt concrete with the installation of brick paver crosswalks and other special surface treatments in the vehicular travel lanes. New bricks and concrete shall be protected against soiling and marking by oils and asphalt. Soiled concrete shall be cleaned by pressure washing or other method acceptable to the City. Soiled bricks shall be removed, cleaned, and replaced. Bricks shall not be cleaned while in place and on site. Cleaning by pressure washing shall require new sand to be swept into paver joints and re-vibrated to lock pavers into place.

SP30-04 MEASUREMENT AND PAYMENT

The Contract Prices paid per square foot for “**Brick Paver Crosswalks**” and “**Brick Paver Median Island Nose**” shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all work involved in constructing paver surfacing, including but not be limited to: sawcutting conform joints where needed; installing compacted aggregate base, forms, reinforcement steel; placing and finishing concrete base, concrete borders, sand, mortar, and supports; brick paver surfaces, including sanded joints; installing, maintaining, and removing steel plates and temporary AC conforms to adjacent grade; and all other work necessary to construct pavers complete in place as shown on the Plans, as specified in the Standard Specifications and these Special Provisions, and as directed by the Engineer; and no additional compensation shall be allowed therefor.

SPECIAL PROVISIONS SECTION SP-31

ROADWAY SIGNS (BID ITEM NO. 49, 50)

SP31-01 GENERAL

The provisions of Section 16, "Traffic Signs," of the Technical Provisions of the Standard Specifications shall apply in their entirety except as modified or supplemented herein.

All sign posts, brackets, straps, and necessary hardware for signs shall be painted black conforming to SP-33 of these Special Provisions.

SP31-02 MEASUREMENT AND PAYMENT

The Contract Price paid per each for "**Install New Sign on Street Light Pole**" and "**Install New Sign & Post**" shall be considered full compensation and for furnishing all labor, materials, tools, equipment, and incidentals, in furnishing and installing sign panels, posts, and all miscellaneous hardware to complete installation in place, including but not be limited to- excavation, concrete foundations, sign brackets, straps, and all necessary hardware for pole or post mounted signs; backfilling holes and restoration surfaces to match adjacent grades and materials, touch-up painting of new and existing posts and hardware, and all other work as shown on the Plans, as specified in the Standard Specifications and in these Special Provisions, and as directed by the Engineer, and no additional compensation shall be allowed therefor.

SPECIAL PROVISIONS SECTION SP-32**SITE FURNISHINGS**
(BID ITEM NO. 69, 70)**SP32-01 GENERAL**

Work includes furnishing and installation of bike racks, metal benches, and related accessories. Each product requires a submittal to include the manufacturer's descriptive literature, two color chips of the specified color, and a verification sample if required by Engineer. Verification samples may be incorporated into the Work as the last unit of that product type.

Where a specific product is listed as acceptable, an equal product may be provided if it meets the terms of "Equal" as defined in Section 1-3 of the General Provisions.

Locations of furnishings are not shown on the Plans. Contractor shall coordinate with the Engineer to lay out the locations of products in the field and obtain approval from Engineer prior to installation.

SP32-02 PRODUCTS

1. **Bike Racks**- Construction of bike racks shall consist of 1.9" O.D. schedule 40 steel pipes. Racks shall have dipped galvanized finish, and electrostatically powder-coated with 250 TGIC polyester powder coating. Color shall be black.

Acceptable Product: Dero Swerve Rack, 2 bike capacity

Acceptable Manufacturer: Dero Bike Racks 1.800.298.4915, www.dero.com

Contractor shall seek approval on the location and alignment of bike rack prior to start of work.

Contractor shall provide in ground mounting set in concrete per manufacturer's recommendations.

2. **Metal Benches**- Construction shall meet the following minimum requirements:
 - a. Twenty-seven (27) seat ribbons per bench, consisting of 1/4" x 1 1/2" steel bars with 1" space between ribbons.
 - b. Integral welded cross members shall be 1-5/16" O.D. high-tensile strength tubular steel.
 - c. Fully welded joints throughout. Front welds are polished until they form a continuous smooth surface from the top tubular section to each steel ribbon.
 - d. All fabricated components are to be steel shot-blasted, etched, phosphatized and electrostatically powder-coated with TGIC polyester powder coating. Color shall be black.
 - e. Contractor shall provide four (4) anchor bolts to fit four (4) holes of 5/8" I.D. per bench. Contractor shall set anchor bolts in concrete per manufacturer's recommendations after locating the bench in the field and obtaining the Engineer's approval of the location.

Acceptable product: 6FT RB-28 Steelsites Series Contoured Bench

Acceptable Manufacturer: Victor Stanley, Inc., P.O. Box 330 Dunkirk, MO 20574,
Telephone 301-855-8300, and FAX 410-257-7579

SP32-03 MEASUREMENT AND PAYMENT

The Contract Price paid for each **“Bench”** and **“Bike Rack”** shall be considered full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all work involved in supplying and installing furnishings complete in place, including adhesives and fastenings, backing, bolts, frames, posts, reinforced concrete pads on aggregate base subgrade where required, coring, and all other work as shown on the Contract Plans, as specified in the Standard Specifications and these Special Provisions, and as directed by the Engineer, and no additional payment shall be made therefor.

SPECIAL PROVISIONS SECTION SP-33**PAINING**
(NO BID ITEM)**SP33-01 GENERAL**

All poles, site furnishings, equipment enclosures, and associated hardware and accessories shall be painted black, conforming to these Technical Provisions, regardless whether said items are furnished by City or Contractor. Factory painted items shall receive touch-up painting as necessary in the field to remedy all damages to the paint as directed by the Engineer, regardless of fault.

The paint system is divided into two (2) parts. The paint that is applied at the factory or fabrication site and the touch-up paint that is required at the Project installation site.

SP33-02 FACTORY/FABRICATION SITE PAINTING

Surface Preparation - All scale, rust and other contaminates shall be removed and all surfaces cleaned to Steel Structures Painting Council (SSPC) SP-6 commercial blast cleaning specifications. Prior to prime and top coat application, all surfaces must be clean, dry and free of oil, grease, finger prints and other contaminants. The application, curing temperature and metal temperature must be above 60 degrees Fahrenheit (16 degrees Celsius). The minimum time between the prime coat and top coat applications shall be in accordance with the manufacture's recommendations.

Paint System

- Prime: Two-part polyamidoamine epoxy, series 69 hi-build epoxoline II by Tnemec Company. Apply by spray to a dry film thickness of 3.0 to 5.0 mils (75 to 125 microns) D.F.T.
- Top Coat: Two-part aliphatic acrylic polyurethane, series 75 semi-floss by Tnemec Company. Apply by spray to a dry film thickness of 5.0 mils (125 microns) D.F.T.
- Total Film Thickness: 8 to 10 mils (200 to 250 micron).
- Application Method: Airless, air or H.V.L.P. spray.

SP33-03 FIELD TOUCH-UP PAINTING

Surface Preparation - Area to be touched-up shall be scarified with a palm sander, pole sander or scotch brite pad. All rust shall be removed to bright metal. All oil, grease finger prints and other contaminants shall be removed with clean solvent and clean rags.

Paint System:

- Prime: Two-part polyamide epoxy. Color: As specified for the equipment: Tnemec series 27 F.C. tyoxy. Apply by brush or roller to 3.0 to 4.5 mils (75 to 110 microns) dry film thickness. This may require two or three coats to reach required D.F.T.]

- Top Coat: Two-part aliphatic acrylic polyurethane – series 75 semi-gloss by Tnemec. Color: As specified for the equipment. Apply by brush or roller to 3.0 to 5.0 mils (88 to 125 microns) D.F.T. This may require several coats to reach the required D.F.T.
- Total Dry Film Thickness: Match Factory applied coatings.
- Application Temperature: Shall be 60 degrees Fahrenheit (16 degrees Celsius) or higher. Application temperature is critical for proper adhesion and curing properties. It is best to do the touch-up mid to late mornings so as to allow the higher afternoon temperatures to help two-part paints to cure properly.

SP33-04 SUBSTITUTIONS

Other coating systems may be substituted for the products specified herein. A complete submittal package shall be submitted to the Engineer 60 days prior to the coating operation for review and approval.

SP33-05 MEASUREMENT AND PAYMENT

There is no separate payment for painting. Full compensation for painting shall be considered as included in the Contract Price paid for the various items of Work that requires painting as shown on the Plans, as specified in these Special Provisions, and as directed by the Engineer, and no additional compensation shall be allowed therefor.

SPECIAL PROVISIONS SECTION SP-34**RECTANGULAR RAPID-FLASH BEACON SYSTEM**

(BID ITEM NO. 73)

SP34-01 GENERAL

Work includes furnishing and installing a complete and functional Rectangular Rapid-Flash Beacon system (RRFB) for pedestrian movements across Mt. Diablo Boulevard at the intersection of Golden Gate Way. The RRFB system shall be compliant with the MUTCD interim approval for use, as documented in the Federal Highway Administration (FHWA) memorandum dated July 16, 2008. For Contractor's reference and convenience only, a photo simulation of a RRFB installation is provided in Figure 1 (Components in the photo do not necessarily comply fully with these Special Provisions).

Within fourteen days after the Notice of Award of Contract, and prior to ordering the equipment, Contractor shall provide a complete submittal of manufacturer literature, including product data, cut-sheets, drawings and diagrams, as necessary to describe the construction and operation of the system to be provided, meeting the requirements of these Special Provisions.

For quality assurance, equipment to be furnished by Contractor shall be manufactured by a firm with a reputable track record of supplying traffic safety products conforming to California industry standards to be installed for municipal agencies. The manufacturer shall have at least five (5) years' experience in manufacturing Rectangular Rapid-Flash Beacon systems for installation on public roadways. City reserves the sole discretion to reject a submittal from any firm not meeting these quality assurance requirements.

**SP34-02 RRFB SYSTEM REQUIREMENTS**

The system shall include four (4) RRFB units and corresponding W11-2 signs with W16-7P (right or left) sub-plates, complying with the latest edition of the State of California Department of Transportation *Traffic Manual*, mounted on Type 1B poles conforming to the State Specifications. Two RRFB units with signs shall be installed for each direction of travel on Mt. Diablo Boulevard approaching the intersection. Exact locations of the poles shall be coordinated with field conditions and be approved by the Engineer prior to installation. Poles, enclosures, and all hardware shall be painted black per Section SP-33 of these Technical Provisions.

The system shall include a solar panel at each pole, to be designed with energy storage to operate for thirty (30) days without sun. The dimensions of the panel shall be the smallest possible and available to operate the system as required.

The system shall be designed to over a temperature range from -30F to + 165F. Duration and frequency of flashing of RRFB after activation shall be programmable by the user to correspond to roadway

conditions. Controller(s) for the system shall be housed in a weatherproof enclosure that is suitable in form, size, and function to be mounted on the Type 1B pole(s) to be provided. Controller(s) shall be capable of causing all four RRFB units to be activated simultaneously when a call for service is made as described below.

The system shall utilize a pushbutton to call for activation at each pole. Each push button shall be the audible type and generally conform to requirements of the State Specifications and considered ADA (Americans with Disabilities Act) compliant. Each push button shall incorporate into its housing a legend to read, "Push Button for Cross Walk Warning Lights - Cross with Caution." A small light integral to the pushbutton or RRFB directed at and visible to pedestrians shall be provided to give confirmation that the RRFB is in operation.

For systems proposed without pushbuttons, a passive detection system shall be supplied to detect presence of pedestrians waiting to cross and activate the RRFB accordingly.

Wiring diagrams and manuals shall be supplied for all equipment installed as part of the system. Documentation shall involve instructions for setting up and troubleshooting all components in the system.

SP34-03 INSTALLATION

Contractor shall install the approved system per manufacturer's instructions. All work involved in the installation, including but not be limited to safety, traffic control, excavation, concrete construction, backfill, and restoration, shall comply with the various requirements of these Special Provisions, where applicable.

Upon completion, the system shall be subjected to a functional test for five (5) consecutive days conforming to Section SP27 of these Special Provisions. Contractor shall make all adjustments and repairs to deficiencies identified in the functional test. Contractor shall replace at his sole expense any and all parts of the entire system if it fails to operate as intended and as required by these Special Provisions.

Prior to acceptance of the Work, Contractor shall provide at least four (4) hours of training to City personnel on the basic programming and functions of the system, sufficient to allow operation of the system as intended.

SP34-04 WARRANTY

The entire RRFB system shall be warranted by its supplier for two (2) years from the date of installation.

SP34-05 MEASUREMENT AND PAYMENT

The Contract Lump Sum Price paid for "Rectangular Rapid-Flash Beacon System" shall be considered full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all work involved in supplying and installing a system complete in place, functioning as required and intended by these Special Provisions, and no additional payment shall be made therefor.

SPECIAL PROVISIONS SECTION SP-35

SURVEY MONUMENT
(BID ITEM NO. 72)

SP35-01 SURVEY MONUMENT

New survey monuments shall be set at locations shown on the Plans or as designated by the Engineer in the field in accordance with the details shown on County Standard Plan CC105, "Street Survey Monument". Frames, covers, collars, concrete cores and brass markers shall be furnished and installed by the Contractor.

The Contractor shall deliver brass markers to the Engineer, a minimum of (5) working days, prior to construction of the survey monuments for stamping the land surveyors license number on the disks.

The survey monument shall be installed after the final surface construction is completed and after the City Surveyor has set temporary straddle survey points. If permanent surfacing restoration cannot be installed the same day the frame and collar is installed, the Contractor shall place temporary asphalt concrete or other materials as approved by the Engineer, and maintain the temporary condition until the permanent surfacing is constructed. The City will set reference points, prior to the start of construction, for existing survey points.

SP35-02 MEASUREMENT AND PAYMENT

The Contract Price paid per each for "Install New Monument" shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals necessary to do all work involved in installing new monument, including but not limited to- removing existing monument, excavation; removing asphalt concrete pavement; concrete cores; brass markers; monument frame and cover; new asphalt concrete pavement and concrete collar; and placement of temporary asphalt concrete around the monument prior to opening to public traffic; and all other work as shown on the Plans, as specified in the Standard Specifications and these Special Provisions, and as directed by the Engineer, and no additional compensation shall be allowed therefor.