

City of Fortuna

TECHNICAL SPECIFICATIONS Redwood Way Improvements Project RPL-5145(020) and Fortuna CIP #9979



February 1, 2021

Prepared for

City of Fortuna
621 11th Street
Fortuna, California 95540
(707) 725-7600

Prepared by



718 Third Street
Eureka, California 95501



TECHNICAL SPECIFICATIONS

**Special Provisions to the
Caltrans Standard Specifications, 2018**

TABLE OF CONTENTS

1.0 GENERAL..... 1

2.0 EXISTING FACILITIES 8

3.0 HAZARDOUS WASTE AND CONTAMINATION 9

4.0 PRESERVATION OF PROPERTY 9

5.0 MOBILIZATION/DEMOBILIZATION 9

6.0 CONSTRUCTION AREA SIGNS 10

7.0 TEMPORARY TRAFFIC CONTROL..... 11

8.0 CONSTRUCTION LAYOUT..... 13

9.0 MATERIALS TESTING AND QUALITY CONTROL..... 13

10.0 WATER POLLUTION CONTROL & FINAL STABILIZATION 16

11.0 DUST CONTROL..... 18

12.0 CLEARING AND GRUBBING..... 19

13.0 DEMOLITION OF EXISTING FACILITIES..... 19

14.0 EARTHWORK 20

15.0 AGGREGATE BASE..... 21

16.0 SUBGRADE ENHANCEMENT GEOTEXTILE 22

17.0 STORM DRAIN STRUCTURES 22

18.0 MINOR CONCRETE..... 24

19.0 DETECTABLE WARNING SURFACES..... 26

20.0 REPLACE ASPHALT CONCRETE SURFACING..... 26

21.0 COLD PLANE ASPHALT CONCRETE..... 28

22.0 HOT MIX ASPHALT 29

23.0 SHOULDER BACKING 31

24.0 ADJUST WATER BOX, MANHOLE COVER, MONUMENT COVER AND
UTILITY VALVE COVER TO GRADE..... 31

25.0 ROADSIDE SIGNS 32

26.0 TRAFFIC STRIPE, PAVEMENT MARKINGS AND PAVEMENT
MARKERS 33

27.0 ENHANCED PEDESTRIAN CROSSING WARNING SYSTEM..... 34

28.0 FINAL CLEAN-UP..... 36

1.0 GENERAL

A. PROJECT DESCRIPTION

The project includes all work included in the Plans, General Provisions, Technical Specifications, Standard Plans and Standard Specifications, to produce a complete and functional project, as determined by the City of Fortuna.

B. SCOPE OF WORK

Contractor shall provide all materials, supervision, labor, equipment and supplies for construction of the Redwood Way Improvements Project. The project includes but is not limited to: removal of existing asphalt pavement, concrete sidewalk, concrete curb ramps, concrete curb, concrete curb and gutter, and drainage facilities; and the placement/construction of concrete sidewalk, curb ramps, curb and gutter, asphalt pavement, conform grinds, overlay, pavement striping and markings, signage, and storm drain inlets.

All materials shall be furnished and installed by the Contractor unless otherwise noted.

C. LOCATION OF WORK

The work site is on Redwood Way; Barry Avenue, between Redwood Way and Jenny Lane; St Joseph Dr, between Redwood Way and Renner Drive; and the intersection of Renner Drive and Rohnerville Road streets in Fortuna, State of California.

D. CONTRACTOR'S LICENSE REQUIREMENTS

The Contractor's license needed for this project is A - General Engineering.

E. OWNER'S AUTHORIZED REPRESENTATIVES

- Merritt Perry, Director of Public Works/City Engineer, City of Fortuna
- Brendan Byrd, Deputy City Engineer, City of Fortuna
- Kevin Carter, Deputy Director of Public Works, City of Fortuna
- Bob Natt, General Services Superintendent, City of Fortuna

Additional authorized representatives will be identified prior to construction.

F. STANDARDS

All work shall adhere to California Department of Transportation (Caltrans) 2018 Standard Specifications and Standard Plans and the Special Provisions contained herein and the latest edition of the California Building Code (CBC), Local, State and Federal regulations, all of which are incorporated into this Contract by reference.

Any reference to or incorporation of the Caltrans Standard Specifications, including "Standard Specifications," "Caltrans Specifications," "State Specifications," or "CSS," means the 2018 edition of Caltrans' Standard Specifications ("Standard Specifications"), and the most current amendments on the date that Contractor's bid was submitted for this Project. The following provisions apply to use of or reference to the Standard Specifications:

1. Limitations. None of the "General Provisions" of the Standard Specifications, i.e., Sections 1 through 9, applies to these Contract Documents with the exception of any specific provisions, if any, which are expressly stated to apply to these Contract Documents.
2. Conflicts or Inconsistencies. If there is a conflict or inconsistency between any provision in the Standard Specifications and a provision of these Contract Documents, as determined by the Engineer, the provision in the Contract Documents will govern.

G. CONFLICTS

The Contractor shall read and make careful examination of the plans, specifications, quantities and material estimates and visit the site of the proposed construction to become familiar with the site conditions and limitations before making a bid. The Contractor shall be responsible for any and all errors resulting from the failure to make such an examination.

H. PERMITS AND LICENSES

It is the responsibility of the Contractor to coordinate with the City to verify that all necessary State and Federal permits have been obtained prior to starting construction or breaking ground on a specific portion of work. The Contractor shall coordinate with the City or the Engineer to obtain copies of the permits and shall comply with all permit conditions.

The Contractor shall maintain a copy of all permits at the project site at all times.

I. CONTRACTOR'S USE OF PREMISES

The Contractor agrees to assume sole and complete responsibility for the job site during the course of construction of this project, including safety of all persons and property. This requirement shall apply continuously and not be limited to normal working hours; and that the Contractor shall defend, indemnify, and hold the City, GHD, and their representatives harmless from any and all liability, real and/or alleged, in conjunction with the performance of this project.

Public Safety, traffic safety and worker safety shall be maintained in compliance with Federal, State and Local Law. It shall be the applicant's responsibility and liability to comply with all applicable laws including: Cal-OSHA; State Department of Transportation Construction Safety, and the State Construction Safety Orders administered by the State Department of Industrial Relations, available through the State of California. Safety and warning devices shall be installed and maintained for all work within the Public Right of Way, within trenches, excavations, and around obstructions. No Public access shall be permitted under overhead construction work. Traffic control signs, flags, lights and other warning and safety procedures shall conform to these cited State requirements, including the Manual of Traffic Safety in Construction Work Zones published by the State Department of Transportation. Continuous vehicle and pedestrian access shall be maintained unless advanced, written authorization has been provided by the City.

1. The Contractor shall notify the engineer at least 72 hours in advance of commencement of any part of the work and shall coordinate construction schedule accordingly.
2. The Contractor shall provide and maintain sufficient temporary barriers to provide for the safety of the public to the satisfaction of the City, see Standard Specifications section 7-1.03 and 7-1.04 for more information.
3. The Contractor shall take all reasonable precautions to restrict operations to the least area of work possible and shall not disturb private property beyond the areas of work or easements for the project.
4. No work shall be performed outside of the designated construction limits without the approval of the city or city's representative.
5. The Contractor shall coordinate with city and adjacent property owners to schedule the demolition and reconstruction of driveways. A minimum of two weeks notice shall be provided and coordinated so as to cause minimal impacts to the property owner. Contractor shall be held responsible for any damage to property or belongings while on private property and such property shall be restored to "as good or better" conditions at the contractor's expense.

6. No concrete shall be place or poured; or asphalt paving placed; or pipeline trenches back-filled; or structures back-filled until the designated City inspector has made an inspection and the work has been approved. Required inspections must be scheduled at least 24 hours in advance.
7. Access to fire hydrants and public facilities shall be maintained at all times.
8. Refuse, trash, waste materials or unused materials shall be removed from the Public Right-of-Way within 4 hours after completion of work.
9. The Contractor shall post temporary "No Parking" signs with dates and time restrictions described in work areas a minimum of forty-eight (48) hours prior to commencement of work. However, if the intended work does not commence within 24 hours of the scheduled work, all "No Parking" signs shall be removed from the site unless otherwise directed by the City's Representative. See "Traffic Control" section regarding coordinating work.
10. The Contractor shall provide equipment-staging space at their own expense and shall occur within paved or graveled areas or a designated, previously disturbed corporation yard. No spoils or materials will be permitted to be stored within City right-of-way without prior written approval from the City. No spoils or materials will be permitted to be stored on School District property without prior written approval from the School District.
11. The Contractor shall be cognizant of all utilities that cross the work area and take adequate measures to protect the utilities from damage. The City of Fortuna assumes no liability of the location of utilities marked or otherwise, and the Contractor is encouraged to examine the site and contact the utilities via USA to determine if conflicts exist.
12. The Contractor is responsible for arranging hook-up of temporary power and is responsible for power hookup and power usage costs. It is the Contractor's responsibility to ensure the compatibility of power sources for their equipment.
13. The Contractor is responsible for furnishing and installing all required temporary buildings with sanitary toilets for use of all workmen; comply with all minimum requirements of the Health Department or other public agency having jurisdiction; maintain in a sanitary condition at all times.
14. Unless otherwise noted, the Contractor shall protect existing survey monuments within work limits. Any monument damaged by the contractor shall be reset in accordance with the California Professional Land Surveyors Act.

J. ROAD CLOSURES

No street shall be closed without first notifying the following agencies, a minimum of 24 hours in advance :

- California Department of Forestry - Fortuna Office: 707-725-4413
- California Highway Patrol: 707-268-2000
- City Ambulance: 707-725-8020
- Fortuna Building Department: 707-725-7600
- Fortuna Fire Department: 707-725-5021
- Fortuna Police Department: 707-725-7550
- Fortuna Public Works Department: 707-725-7630
- Fortuna Transit 707-725-7625
- Humboldt County Sheriff's Department: 707-445-7251
- Humboldt Transit Authority 707-443-0826
- Open Door Community Health Center 707-725-4477

K. DIFFERING SITE CONDITIONS

Attention is directed to Section 4-1.06, "Differing Site Conditions," of the Standard Specifications. During the progress of the work, if subsurface or latent conditions are encountered at the site differing materially from an examination of the conditions above ground at the site, the party discovering those conditions shall promptly notify the other party in writing of the specific differing conditions before they are disturbed and before the affected work is performed.

The Contractor will be allowed 15 days from the notification of the City's determination of whether or not an adjustment of the contract is warranted, in which to file a notice of potential claim in conformance with the provisions of Section 5-1.43, "Potential Claims and Dispute Resolution" of the Standard Specifications and as specified herein; otherwise the decision of the City's Representative shall be deemed to have been accepted by the Contractor as correct. The notice of potential claim shall set forth in what respects the Contractor's position differs from the Engineer's determination and provide any additional information obtained by the Contractor, including but not limited to additional geotechnical data. The notice of potential claim shall be accompanied by the Contractor's certification that the following were made in preparation of the bid: a review of the contract, a review of the "Technical Data," a review of the borings and other records of geotechnical data to the extent they were made available to bidders prior to the opening of bids, and an examination of the conditions above ground at the site.

L. WORK SAFETY

The Contractor shall assume sole and complete responsibility for job site conditions for the duration of the project including, but not limited to, the safety and health conditions on the work site. This requirement shall apply continuously and shall not be limited to normal working hours. Contractor shall comply with all applicable provisions of law including the standards, rules, regulations and orders established by the California Division of Industrial Safety. Contractor shall furnish and use safety devices and safeguards and shall adopt and use practices, means, methods, operations, and processes which are reasonably adequate to render the work site safe and healthful. Contractor shall take all steps necessary to ensure that any hazardous condition is corrected promptly either by the Contractor or by assigning such responsibility to the appropriate subcontractor and ensuring that the corrections are completed. The City of Fortuna, the engineer-of-record, construction manager and the officers, agents, employees and consultants, shall not have charge of or responsibility for construction or safety means, methods, techniques, procedures, as these are solely the responsibility of Contractor.

M. CONFINED SPACES

For any work that is to take place in a confined space, the Contractor shall comply with all CAL/OSHA regulations concerning entry into confined spaces. Confined space for the purpose of this Article shall include, but is not limited to the interior of storm drains, sewers, vaults, utility pipelines, manholes, reservoirs, and any other such structure which is similarly surrounded by confining surfaces so as to permit the accumulation of dangerous gases or vapors. Tests for the presence of combustible or dangerous gases shall be made with an approved device immediately prior to a worker entering a confined space and at intervals frequent enough to ensure a safe atmosphere during the time a worker is in such a structure. A record of such tests shall be kept at the job site. Sources of ignition, including smoking, shall be prohibited in any confined space until after the atmosphere within the confined space has been tested and found safe. No employee shall be permitted to enter or remain within a confined space until such confined space is free of concentrations of harmful gases, and lack of oxygen, unless the employee is wearing suitable and approved respiratory equipment. Confined spaces that contain or that have last been used as containers of toxic gases, light oils, hydrogen sulfide, corrosives, or poisonous substances, shall, in every case, be tested by means of approved devices or chemical analysis before being entered without wearing approved respiratory equipment. Reservoirs, vessels, or other confined spaces

having openings or manholes in the side as well as in the top shall be entered from the side openings or manholes when practicable.

N. RECORD DRAWINGS

Using colored ink, the Contractor shall make changes on a set of clean prints of the contract drawings, which shall be kept at the job site at all times. Indicate all changes and revisions to the original design that affect the permanent structures/facilities. Reference underground utilities to semi-permanent or permanent physical objects. Reference water, sewer, telephone, and electrical lines to corners of buildings and survey markers. Drawings shall be kept current with all work instructions, change orders and construction adjustments. Drawings shall be subject to the inspection of the City's Representative at all times. Progress payments, or portions thereof, may be withheld if drawings are not accurate and current. Project record drawings are the property of the City of Fortuna. Prior to acceptance of the work, the Contractor shall deliver to the City one (1) set of neatly marked record drawings, accurately showing all the information required above. Full compensation for furnishing all labor, tools, equipment, material and incidentals and for doing all the work involved with conforming to the requirements of this section shall be considered as included in the contract prices paid for the various items of work and no additional compensation will be allowed therefor.

O. SUBMITTALS

Submit samples, drawings, and data for the City's approval which will demonstrate fully that the construction, and all materials and equipment to be furnished will comply with the provisions and intent of this specification. Submit all samples, drawings and data, unless specified otherwise, in the quantity required for return to the Contractor, plus three, which the City will retain. Label each sample, naming the project, the source of the material, and the proposed location of use on the project. Unless otherwise specifically permitted by the City, make all submittals in groups containing all associated items for complete systems. The City may reject partial submittals as not complying with the provisions of the contract documents.

Specific items to be covered by submittals shall include, but not limited to, the following:

Designation of Authorized Representative	Catch Basins and Grates
Emergency Contact List	Pavement Markings / Markers / Stripes
Injury and Illness Prevention Plan	Roadside Signs and Posts
Personnel & Equipment List	Utility Boxes
Traffic Control Plans	Subgrade Enhancement Geotextile
Class 2 Aggregate Base	RRFB Enhanced Signage Systems
Shoulder Backing	PV System Summary
Hot Mix Asphalt Mix (HMA) Designs	
Concrete Mix Design	
Concrete Reinforcement	
Detectable Warning Surfaces	

Where the specifications indicate that the Contractor must follow manufacturer's instructions for installation of materials or equipment, those instructions shall be submitted to the City of Fortuna prior to the start of work whether or not instructions are listed specifically as a submittal. When referenced, the manufacturers printed installation instructions shall have the same effect as if printed in the contract documents. Make all shop drawings accurately to a scale sufficiently large to show all pertinent features of the item and its method of connection to the work. Make all shop drawing prints in blue or black line on white background. Reproductions of City of Fortuna's drawings are not acceptable. The Contractor shall not use red color marks on submittals. Duplicate all marks on all copies submitted and ensure marks are photocopy reproducible. Include legible scale details, sizes, dimensions, performance characteristics, capacities, test data, anchoring details, installation instructions, storage and handling instructions, color charts, layout

drawings, parts catalogs, rough-in diagrams, wiring diagrams, controls, weights, and other pertinent data. Provide, at a minimum, the detail provided in the Contract Documents.

Prior to submittal for City's review, use all means necessary to fully coordinate all materials, including the following procedures:

1. Determine and verify all field dimensions and conditions, materials, catalog numbers, and similar data.
2. Coordinate as required with all trades and with all public agencies involved.
3. Secure all necessary approvals from public agencies and others and signify by stamp, or other means, that they have been secured.

The Contractor shall make all submittals far enough in advance of scheduled dates of installation to provide all required time for reviews, for securing necessary approvals, for possible revision and resubmittal, and for placing orders and securing delivery. In scheduling, allow at least seven (7) calendar days for the City's review, plus the transit time.

At least one copy of each submittal will be returned to the Contractor marked "No Exceptions Taken", "Make Corrections Noted", "Revise and Resubmit", or "Rejected." Submittals marked "No Exceptions Taken" or "Make Corrections Noted" need not be resubmitted, but the notes shall be followed. If a submittal is rejected, it will be marked to indicate what is unsatisfactory. Resubmit revised drawings or data as indicated, in number of copies specified above.

Approval of each submittal by the City will be general only and shall not be construed as:

1. Permitting any departure from the contract requirements.
2. Relieving the Contractor of the responsibility for any errors and omissions in details, dimensions, or of other nature that may exist.
3. Approving departures from additional details or instructions previously furnished by the City.
4. Relieving the Contractor from verifying all field conditions and dimensions.

Any submittals which are returned to the Contractor for resubmittal due to incompleteness or noncompliance more than once will cause additional review time and expense for the City of Fortuna. The Contractor shall reimburse the City of Fortuna for all costs associated with the third and subsequent review of any submittals. The City of Fortuna reserves the right to deduct resubmittal review costs from amounts due the Contractor.

The contract is based on the materials, equipment, and methods described in the contract documents. Any proposed substitutions by the Contractor are subject to the City's approval. The City will consider proposals for substitution of materials, equipment, and methods only when such proposals are accompanied by full and complete technical data, and all other information required by the City to evaluate the proposed substitution. Requests for substitutions shall be accompanied by a cover letter stating the reason for the substitution and any cost difference between the specified and proposed material. Any deviations from the plans and specifications shall be clearly identified on the submittal.

Whenever any material or equipment is indicated or specified by patent or proprietary name or by the name of the manufacturer, such specification shall be considered as used for describing the material or equipment desired and shall be considered as followed by the words "or approved equal". The Contractor may offer any material or equipment which shall be equal in every respect to that specified; provided that written approval first is obtained from the Engineer.

Certificates of Compliance may be required for any material incorporated into the project at the City's sole discretion.

Before submitting materials, Contractor shall provide the City a proposed submittal form for the City's review and approval or the Contractor shall use the sample form designated by the City.

Contractor shall completely identify each submittal and re-submittal by using the form approved by the City's Representative and number submittals consecutively beginning with 1. Resubmittals shall retain the original number with an added suffix starting with "A." Said form shall include the name of the City's Representative and the Project Name. It shall also clearly indicate the Item Description, Manufacturer, Specification Section Reference and Drawing Sheet Number(s) Reference. All submittals shall be certified by the Contractor for completeness and for compliance with the contract documents with the following Certification:

I hereby certify that all material submitted has been checked for completeness, for correctness, and for compliance with the drawings and specifications, that field dimensions and conditions have been verified, and that exceptions, if any are clearly noted.

Allow a 3" x 4" space on the form for the City's Submittal Stamp. Transmit all submittals to City's designated representative.

P. Measurement and Payment

Quantities shown on the bid schedule are approximate. Except for final pay item quantities, the Engineer measures quantities for payment. Unless otherwise specified, measurement for work is in place, complete, and accepted.

When the bid schedule or Engineer's estimate does not contain a pay item for work shown in the plans or called for in the Contract Documents, no direct payment for work will be made, but the work will be considered paid under other contract items. Items of work or other services which the Contractor is required to supply, such as clean-up or other incidental items, and which are not listed as separate bid items shall be included in the related bid items and shall be considered as paid in those items, whether or not specifically identified in the descriptions. Also included in such contract costs are any costs associated with the repair of damage, which may occur to existing improvements as a result of these construction operations.

The contract price paid shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all work involved as detailed in the Standard Specifications, these Special Provisions, and the plans. No additional compensation will be allowed therefor.

The City shows a bid item quantity as a final pay item for payment purposes only. For a final pay item, accept payment based on the Bid Item List quantity, regardless of actual quantity used unless dimensions are changed by the Engineer.

Q. Progress Schedule

Prior to the start of construction, the Contractor shall prepare and submit a construction schedule in a form provided by, or acceptable to the Owner. The Construction Schedule shall be updated by the Contractor regularly or at the request of the City. Any modifications to the Construction Schedule shall be submitted to the Owner in writing. Modifications to the Construction Schedule will not constitute approval for a work schedule extension.

At the request of the City, the Contractor shall submit a weekly schedule, separate from the entire project schedule, which shall clearly show where and what time the Contractor anticipates working. A digital copy of the separate weekly schedule shall be submitted to the Owner no later than the Wednesday preceding the work week.

2.0 EXISTING FACILITIES

Attention is directed to 5-1.36 "Non-highway Facilities" of the Standard Specifications and these Special Provisions.

Contractor shall field verify all existing site conditions prior to the commencement of work and report any discrepancies to the City's representative. Contractor is responsible for visiting the site and becoming familiar with the site conditions prior to bidding. Should existing conditions differ from those shown or indicated, or if it appears that these plans, and specifications do not adequately detail the work to be done, Contractor shall notify the engineer prior to continuing with any related work. No allowance will be made on Contractor's behalf for any extra expense resulting from failure or neglect in determining the conditions under which work is to be performed.

Locations of existing underground utilities are plotted from interpolation of physical evidence on the site and should be considered approximate only. It is not the intent of the plans to show exact locations of existing utilities, and the City of Fortuna assumes no responsibility therefor. The Contractor shall be responsible for verifying their actual location and depth in the field. Where excavation is anticipated, the Contractor shall notify Underground Service Alert at (800) 642-2444 not less than two working days prior to any excavation, and shall pothole for exact location. Actual location can best be determined in the field after pre-marking by the various utilities affected, and potholing by the Contractor. Notify the Engineer immediately if locate indicates that existing utilities are different than shown on drawings.

The various utilities will cooperate with the Contractor to endeavor to familiarize the Contractor with all known underground utilities obstructions, but this will not relieve the Contractor from assuming full responsibility in anticipating and locating their actual location with respect to utilities which the Contractor must locate and identify under the provisions hereof. The Contractor shall inform and coordinate all necessary operations with all local utility providers including the following agencies:

The Underground Service Alert (USA)	(800) 642-2444
AT&T	(800) 743-5000
Pacific Gas & Electric Company (PG&E)	(800) 743-5000
Suddenlink Communications	(877) 443-3127
City of Fortuna Public Works	(707) 725-7650

Construction activity will take place in the vicinity of above ground and underground electric transmission lines. It is the contractor's responsibility to be aware of, and observe, the minimum clearances for workers and equipment operating near high voltage electric lines as set out in the high voltage safety orders of the California

Contractor shall be held responsible for any and all damages to existing structures, roads, and utilities during construction. Contractor shall locate, protect, and avoid disruption of all above and below grade utilities during construction. All damage shall be restored to an "as good or better" condition at the contractor's expense.

Measurement and Payment

Full compensation for protection of existing utility facilities shall be considered as included in the various bid items and no separate payment will be made.

3.0 HAZARDOUS WASTE AND CONTAMINATION

General

Attention is directed to the provisions in Section 14-11 “Hazardous Waste and Contamination”, of the Standard Specifications, and these Special Provisions.

In accordance with Section 7104 of the State Public Contract Code, the Contractor shall promptly, and before the following conditions are disturbed, notify the City, in writing, of any: (i) material that the Contractor believes may be material that is hazardous waste, as defined in Section 25117 of the Health and Safety Code, that is required to be removed to a Class I, Class II, or Class III disposal site in accordance with provisions of existing law; (ii) Subsurface or latent physical conditions at the site differing from those indicated; or (iii) unknown physical conditions at the site of any unusual nature, different materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract. The City shall promptly investigate the conditions, and if it finds that the conditions do materially so differ, or do involve hazardous waste, and cause a decrease or increase in the Contractor's cost of, or the time required for, performance of any part of the Work shall issue a change order under the procedures described herein. In the event that a dispute arises between the City and the Contractor whether the conditions materially differ, or involve hazardous waste, or cause a decrease or increase in the Contractor's cost of, or time required for, performance of any part of the Work, the Contractor shall not be excused from any scheduled completion date provided for herein, but shall proceed with all Work to be performed hereunder. The Contractor shall retain any and all rights provided either by contract or by law which pertain to the resolution of disputes and protests between the City and Contractor.

Measurement and Payment

Notification and initial coordination with the City shall be considered as included in the various bid items and no separate payment will be made. If hazardous waste or contaminated material is found that requires disposal, a change order for the additional work will be issued in accordance with this contract.

4.0 PRESERVATION OF PROPERTY

General

Attention is directed to the provisions in Section 5-1.36 “Property and Facility Preservation”, of the Standard Specifications, and these Special Provisions.

The Contractor shall make a thorough investigation of the job site and size equipment accordingly. The Contractor shall select equipment to avoid damaging existing facilities, which include, but are not limited to: street paving, pipes, traffic controls, sidewalks, driveways, plants and trees, landscaping, curbs and gutters, retaining walls, drainage facilities, fencing etc. The Contractor shall restore any damage to the existing facilities to the satisfaction of the City or owner. Restoration costs shall be the sole responsibility of the Contractor and shall be at no cost to the City or Owner.

Measurement and Payment

Full compensation for complying with the above provisions shall be considered as included in the contract price for the various bid items and no separate payment will be made.

5.0 MOBILIZATION/DEMobilIZATION

General

Mobilization and Demobilization shall consist of preparatory work and operations including, but not limited to, those necessary for the movement of personnel, equipment, supplies and incidentals to the project site; for the establishment of all offices, buildings and other facilities necessary for work on the project; and for all other work and operations which must be performed or costs incurred prior to beginning work

on the various contract items on the project site. Also included are final site cleanup, removal of all unused construction waste and demobilization of equipment from the site.

Measurement and Payment

Payment for Mobilization shall be made on a lump sum basis. This work covers all Contractor costs and effort associated with mobilizing and demobilizing equipment, materials, and labor to the project site. Items covered by this include, but are not limited to, bonds, insurance, contracting and administrative costs, costs associated with temporary facilities and utilities, and project maintenance and warranty. Payment for mobilization will be paid for as “Mobilization.” Partial Payments will be made in accordance with the following:

Percent of Original Contract Amount Earned	Total Amount Paid
5%	50% of the amount bid for mobilization/demobilization, or 5 percent of the original contract amount, whichever is lesser
10%	75% of the amount bid for mobilization/demobilization, or 7.5 percent of the original contract amount, whichever is lesser
20%	95% of the amount bid for mobilization/demobilization, or 9.5 percent of the original contract amount, whichever is lesser
50%	100% of the amount bid for mobilization/demobilization, or 10 percent of the original contract amount, whichever is lesser

6.0 CONSTRUCTION AREA SIGNS

General

Stationary mounted construction area signs shall be furnished, installed at locations shown on the plans, maintained, and removed when no longer required in accordance with the provisions in Section 12, “Temporary Traffic Control,” of the Standard Specifications and these Special Provisions. In addition, attention is directed to Sections 7-1.03 “Public Convenience”, 7-1.04 “Public Safety” of the Standard Specifications, in so far as they may apply, and the following Special Provisions.

All stationary-mounted construction area signs shall be provided by the Contractor, and shall remain the Contractor’s property after the completion of the contract.

Materials

Sign substrates for stationary-mounted construction area signs shall comply Section 12-3.11B(1) and 12-3.11B(2) of the Standard Specifications. The base material of construction area signs shall be aluminum sheeting.

Construction

All excavations required to install construction area signs shall be performed by hand methods without the use of power equipment, except that power equipment may be used if it is determined there are no utility facilities in the area of the proposed post holes.

The provisions in this section will not relieve the Contractor from their responsibility to provide such additional devices or take such measures as may be necessary to comply with the provisions in Section 7-1.04, “Public Safety,” of the Standard Specifications.

Measurement and Payment

Stationary-Mounted Construction Area Signs as shown on the plans, except those signs required for detours, lane closures and road closures and unless otherwise specified, will be paid for on the lump sum basis. The contract price shall include full compensation for furnishing all labor, materials, tools,

equipment, and incidentals, and for doing all the work involved in furnishing construction area signs, erecting or placing, maintaining (including covering and uncovering as needed) and, when no longer required, removing construction area signs at the locations shown on the plans. Payment for stationary mounted construction area signs shall be paid for as "Construction Area Signs."

7.0 TEMPORARY TRAFFIC CONTROL

General

The Contractor shall provide temporary traffic control in accordance to the Stage Construction and Traffic Handling Plans and the current California Manual on Uniform Traffic Control Devices (MUTCD). Contractor shall furnish, erect, maintain and remove all necessary temporary traffic control signs and devices, and shall provide all necessary labor during the length of this contract.

The applicable sections of Section 7-1.03 "Public Convenience", Section 7-1.04 "Public Safety", and Section 12, "Temporary Traffic Control", and Section 12-1.03 "Flagging Costs" regarding flagging costs are further revised to provide that all flaggers shall be provided by the Contractor at his expense. Flaggers shall be properly equipped and trained in accordance with "Instructions to Flaggers," published by the California Department of Transportation. Flaggers are expected to be required for the project.

If the Contractor proposes to deviate from the Stage Construction and Traffic Control Plans, Contractor shall be responsible for developing and submitting to the City of Fortuna a Traffic Control Plan for review and approval prior to commencement of construction activity.

Materials

Portable construction area signs shall comply Section 12-3.11B(1) and 12-3.11B(3) of the Standard Specifications.

Construction

Maintaining Traffic

Public traffic shall be maintained on public roadways adjacent to the work, except during short temporary delays (5 minutes per hour maximum closure) when proper signage and flagmen are provided as necessary to complete the work. Any road closures shall be approved in advance by the Engineer.

Contractor shall expedite the passage of public and private traffic through and around the work except as specified above. The Contractor shall furnish and install signs, detours, lights, flares, barricades, and shall furnish flagmen and other facilities for the convenience and direction of public traffic.

Work takes place in the vicinity of two hospitals, including emergency room facilities. Contractor shall take extreme care to sequence and execute construction in such a manner as to maintain access to the hospital facilities at all time and to accommodate emergency vehicles. The Contractor shall be prepared to remove closures and provide emergency vehicle access at all times. The Contractor will not be entitled to compensation for the delays of work resulting from a closure needing to be opened in order to provide emergency vehicle access.

The contractor is responsible for site security and safety throughout the project and shall maintain appropriate barricades and other features as needed to protect the work site and public safety.

All temporary signs and warning devices, including warning signs placed beyond the limit of work, shall be provided by the Contractor and shall become the Contractors property after completion of the contract.

During the contract period, the Contractor shall coordinate their activities daily with the City of Fortuna and make every effort to minimize the disruption of normal traffic and parking. Contractor shall provide for temporary traffic control for pedestrian access around the work being performed. Alternative routes shall

be provided for pedestrians when work affects existing facilities (e.g. sidewalks, curb ramps, etc.). Multiple curb ramps at single intersection shall not be demolished and/or removed unless an alternative route (detour) is provided.

The Contractor shall post temporary NO PARKING signs as described in the "GENERAL" section of these Special Provisions. Written notice shall be approved by the City prior to any posting. It shall be the responsibility of the Contractor to maintain signs and barricades overnight and on weekends and until the completion of the contract. It will be the responsibility of the Contractor to arrange for the towing and removal of any vehicles which have not been removed by the owner and which interfere with any operations

At the end of any working day when work operations have obscured existing traffic striping, the striping shall be restored via reflective painting, markers or other interim materials subject to the approval of the City of Fortuna.

At the end of each day's work, and at other times when construction operations are suspended, all equipment and other obstructions shall be removed from that portion of roadway open for use by public traffic.

If any component in the traffic control system is displaced, or ceases to operate or function as specified, from any cause, during the progress of the work, the Contractor shall immediately repair said component to its original condition or replace said component and shall restore the component to its original location.

Public Convenience

Contractor shall conduct operation as to offer the least possible obstruction and inconvenience to the public, and he shall have under construction no greater amount of work than he can prosecute properly with due respect to the rights of the public. The contractor shall notify all affected parties a minimum of two weeks prior to any road or driveway closures.

Personal vehicles of the Contractor's employees shall not be parked on the traveled way or shoulders including sections closed to public traffic.

During approved lane closure using flaggers, all side streets within the closure area shall have flaggers to control traffic. The use of stationary signs to control traffic on open side streets within the closure are shall not be permitted.

Detours

Under no circumstances shall traffic on any street be held up more than ten minutes per hour at any one time. The contractor may coordinate with property and business owners to schedule work so that longer delays do not adversely affect residents or business owners to their satisfaction. In addition, Contractor shall give personal notice to all affected property owners as specified above under Public Convenience. Before closing any street to through traffic, Contractor shall obtain prior approval from the Engineer 7 calendar days in advance of closure. Contractor shall at all times provide access to public facilities such as hospitals, etc. and make provisions for passage of emergency vehicles. Pedestrian detours shall follow the requirements of accessible pedestrian routes per the California MUTCD.

Measurement and Payment

Measurement and payment for this item shall be on a lump sum basis. The contract price shall include full compensation for furnishing all labor (including flagging costs), materials, tools, equipment, and incidentals, and for doing all the work involved including but not limited to: notifications, placing, removing, storing, maintaining, moving to new locations, replacing, and disposing of the components of the traffic control system as shown on the plans, including portable construction area signs, as specified in the Standard Specifications and these Special Provisions, and as directed by the City's Representative. Payment for temporary traffic control shall be paid for as "Temporary Traffic Control System." Partial Payments will be made therefore in accordance with the following:

Percent of Original Contract Amount Earned	Allowable Percentage of Lump Sum Price for the Item
<5%	5%
5%	10%
10%	25%
25%	50%
50%	75%
75%	90%
100%	100% (Contract Acceptance)

Stationary-mounted construction area signs are measured and paid separately under “Construction Area Signs.”

8.0 CONSTRUCTION LAYOUT

General

This work shall consist of furnishing and setting construction stakes and marks by the Contractor to establish the lines and grades required for the completion of the work as shown on the plans and as specified in the Standard Specifications and these Special Provisions.

Construction

The layout of work shall be made by the Contractor based on the dimensions provided in the plans, with minor deviations to account for variation with existing conditions required conforms. Computer Aided Design (CAD) files will not be provided by the City.

Elevations shall be established based on the existing conditions, with respect to the relative grades and dimensions identified in the typical sections, details and/or current code requirements. Supplemental grading information will be available and provided to the contractor upon request, and if deemed necessary by the Engineer.

Contractor shall be required to establish design stationing along the centerline of Redwood Way at fifty (50) foot increments using spray paint on roadway pavement to allow for the City’s Representative to review Contractors layout and track paving quantities. Contractor shall layout and set stakes for areas of pavement widening and new concrete (curbs, sidewalks, etc.) at sufficient intervals (as determined by the Engineer). All layout and grades shall be reviewed by the City’s Representative prior to the placement of concrete.

The City will mark the areas of asphalt concrete pavement replacement (full-depth and digouts).

Measurement and Payment

Full compensation for complying with the above provisions shall be considered as included in the contract price for the various bid items and no separate payment will be made.

9.0 MATERIALS TESTING AND QUALITY CONTROL

General

The City will retain a consultant to perform independent materials testing. Contractor shall schedule all tests required by the Contract Documents in time to avoid any delay to the progress of the Work. Contractor shall provide timely notice to all necessary parties as specified in the Contract Documents. The Owner shall bear the initial cost of testing to be performed by independent testing consultants

retained by the City. However, Contractor shall be responsible for the costs of any subsequent tests which are required to substantiate compliance with the Contract Documents, and any associated remediation costs. Prior to any removal, reconstruction or rework of any work item already incorporated into the project, the Contractor shall first obtain the approval of the City to the Contractor's proposed methods for removal, reconstruction, or rework.

In addition, if any portion of the work, which is subject to testing, is covered or concealed by Contractor prior to testing, Contractor shall bear the cost of making that portion of the Work available for the testing required by the Contract Documents, and any associated repair or remediation costs.

All materials, equipment, and workmanship used in the Work shall be subject to inspection by Owner's Inspector at all times and locations during construction and/or fabrication. All manufacturers' application or installation instructions shall be provided to the Inspector at least ten (10) calendar days prior to the first such application. Contractor shall, at all times, make the Work available for inspection. Any work that fails to comply with the requirements of the Contract Documents shall be promptly repaired, replaced, or corrected by Contractor, at Contractor's sole expense. In addition, if any portion of the Work is improperly covered or concealed by Contractor prior to inspection, Contractor shall bear the cost of making that portion of the Work available for inspection, and any associated repair or remediation costs.

If required off-site testing and/or inspection must be conducted at a location more than fifty (50) miles from the Project site, Contractor shall be responsible for the additional travel costs required for testing and/or inspection at such locations.

Contractor shall be solely responsible for any delay occasioned by remediation of noncompliant Work.

The Contractor shall be responsible for controlling the quality of the materials incorporated into the work and of the work performed, and shall cooperate with the Owner for sampling and testing requested by the City.

Testing Frequencies

The City's materials tester is expected to perform the following tests (subject to revision by the City):

Materials to be Tested	Frequency	Test Methods	Description of Test	Notes
Subgrade and Fill	1 test per 1000 sf or fraction thereof for every 16 inches of fill; 1 test per 100 lf or fraction thereof for pavement (HMA or concrete) subgrade.	CT 216/231	Relative Compaction and In-Place Density	A minimum of three test sites are required for every test.
Trench Backfill and Aggregates	1 test per 100 lf or fraction thereof for every 16 inches of trench backfill; 1 test per 1000 sf or fraction thereof for every 16 inches of flexible pavement subbase or base;	CT 216/231	Relative Compaction and In-Place Density	A minimum of three test sites are required for every test. <u>Testing not required for trenches in non-paved areas.</u>
Hot Mix Asphalt	1 Per 1,000 Tons or Part Thereof; Minimum 1 per day during production/placement of at least 500 tons per day.	CT 202	Aggregate Gradation (Sieve)	At Plant Per CT 125. Exact tonnage of sample location to be determined by Random Sampling Plans
		CT 217	Sand Equivalent	
	One per mix design	CT 382	Asphalt Binder Content	Loose Mix Behind Paver Per CT 125
	1 Per 1,000 Tons or part thereof; Minimum 1 per day during production/placement of at least 500 tons per day.	CT 375	Relative Compaction and In-Place Density	Random Locations Per CT 375. Compaction determined by Nuclear Density Device. Core testing may be required if compaction fails the nuclear test. Correlation between core densities and nuclear device may be required if compaction fails the nuclear test
	One per mix design	CT 366	Stabilometer Value	Loose Mix Behind Paver Per CT 125. Report the average of 3 tested briquettes from a single split source
Sample 1 min. per day for production over 500 tons per day;	Sample per Section 92	Asphalt Binder	No testing required unless warranted by concern; sample and store until completion of project.	
HMA Pavement	As necessary to confirm contract compliance.	12-foot Straightedge	Smoothness	No testing required unless warranted by concern.

Measurement and Payment

Full compensation for complying with the above provisions shall be considered as included in the contract price for the various bid items and no separate payment will be made.

When initial tests indicate non-compliance with the Contract Documents, all subsequent retesting occasioned by the non-compliance shall be performed by the same testing laboratory and the cost thereof shall be deducted from amounts owed to the Contactor.

10.0 WATER POLLUTION CONTROL & FINAL STABILIZATION

General

Attention is directed to Section 13 "Water Pollution Control" and Section 21 "Erosion Control" of the Standard Specifications and the following Special Provisions. The Contractor shall implement best management practices (BMPs) to protect waters from pollution with sediments, fuels, oils, and other harmful materials.

This work includes but is not limited to furnishing, constructing, and maintaining permanent and temporary erosion and sediment control measures in to the specifications, or as ordered by the Owner during the life of the contract. This work is necessary to control water pollution, soil erosion and siltation through the use of fiber rolls, silt fences, inlet protection, and other approved water pollution control devices or methods.

All maintenance and fueling required for heavy equipment and other vehicles shall be performed 100-feet away from a storm drainage inlet or drainage swale in a confined area such that there is no possibility of contaminants being discharged to the swale. Hazardous materials (fuels, lubricants, solvents, etc.) will not be stored within 100-feet of a drainage or water body. Any failure of equipment that results in water pollution is the responsibility of the Contractor. All fuel, oils, and other harmful materials will be cleaned up to the satisfaction of the Owner and at no additional cost to the Owner.

Materials

Sufficient erosion control supplies shall be available on-site at all times to deal with areas susceptible to erosion during rain events.

Seeds shall be of 76% Pure Live Seed (PLS) or better. Seed shall be in conformance with the California State Seed Law of the Department of Agriculture. Seed shall be of a quality that weed seed shall not exceed 0.5 percent of the aggregate PLS. Seed with a germination rate lower than the minimum rate shown may be used if authorized. Seed mix shall be approved by the Owner prior to application and shall be a mix similar to the surrounding area.

Construction

The Contractor shall become fully informed of, and comply with the applicable provisions of Federal, State and local regulations that govern the Contractor's operations and storm water discharges from both the project site and areas of disturbance outside the project limits during construction.

At a minimum, the Contractor shall employ the following best management practices (bmps) as described in the current California Stormwater BMP handbook for construction (www.casqa.org):

- EC-1 Scheduling
- EC-2 Preservation of Existing Vegetation
- EC-4 Hydroseeding
- SE-7 Street Sweeping and Vacuuming
- SE-10 Storm Drain Inlet Protection
- WE-1 Wind Erosion Control
- NS-3 Paving and Grinding Operations
- NS-9 Vehicle Equipment and Fueling

NS-10 Vehicle & Equipment Maintenance
WM-1 Materials Delivery and Storage
WM-2 Material Use
WM-3 Stockpile Management
WM-4 Spill Prevention and Control
WM-5 Solid Waste Management
WM-8 Concrete Waste Management
WM-9 Sanitary/Septic Waste Management

All erosion and sediment control measures shall be maintained in accordance to their respective CASQA BMP fact sheet until disturbed areas are permanently stabilized. The BMP's identified above are a minimum best management practice anticipated for the project and may not cover all the situations that arise during construction due to unanticipated field conditions.

The Contractor shall inspect the site daily, identify deficiencies and provide additional erosion control measures as required to ensure that no sediment laden water exits the site, enters the existing stormwater system or enters sensitive areas. Adjustments may be made to the BMPs in the field, subject to approval of or at the direction of the City's representative. It will be the responsibility of the Contractor to fix any deficiencies indicated by the City or the City's representative to prevent erosion and control sediment.

The erosion and sediment control measures identified in this section are appropriate to minimize erosion and prevent sediment discharge in the event of summer rainstorms (April 15th through October 15th) in the event there is a delay in the construction schedule, BMPs and/or final stabilization measures (including seed mix and method of application) may need to be adjusted.

Minimize disturbance of existing vegetation unless necessary to complete the work. Make adequate preparations, including training & equipment, to contain spills of oil and other hazardous materials.

Provide covered waste receptacles for common solid wastes at convenient locations on the job site and provide regular collection of wastes. Provide sanitary facilities of sufficient number and size to accommodate construction crews and ensure adequate anchorage of such facilities to prevent them from being tipped by the weather or vandalism. Provide covered and secured storage areas for potentially toxic material. All hazardous material containers should be placed in secondary containment.

Vehicle and equipment maintenance shall be performed off-site whenever practical. Activities such as vehicle washing are to be carried out at an off-site facility wherein the water is discharged into a sanitary sewer. All sediment deposited on paved surfaces shall be swept at the end of each working day, as necessary or as directed by the City's representative.

Ensure that the construction site is prepared prior to the onset of any storm. Ensure appropriate BMPs are installed, and stockpiles covered and located at least 50 feet away from drainage channels and stormwater systems.

Prior to final acceptance, all disturbed areas and exposed soil shall be permanently stabilized using hydroseed and temporary sediment control measures shall be removed as directed. Apply hydroseed with hydraulic spray equipment that mixes fiber, tackifier, fertilizer, and seed materials at the following rates:

- Seed at 60 lb/ac
- Fiber at 2,000 lb/ac
- Tackifier at the manufacturer's instructed rate for the slope, soil, and wind conditions

Hydroseed shall be applied to form a uniform and continuous blanket over all disturbed areas, subject to the satisfaction of the City. After the final application, protect treated areas from damage from pedestrians, vehicles and equipment.

Unless arrangements for disturbance of areas outside the project limits are made by the City and made part of the contract, it is expressly agreed that the City assumes no responsibility to the Contractor or property owner whatsoever with respect to any arrangements made between the Contractor and property owner to allow disturbance of areas outside the project limits.

The Contractor shall be responsible for the costs and for any liability imposed by law as a result of the Contractor's failure to comply with the requirements set forth in this section "Water Pollution Control" including, but not limited to, compliance with Federal, State and local regulations. For the purposes of this paragraph, costs and liabilities include but are not limited to fines, penalties and damages whether assessed against the City or the Contractor, including those levied under the Federal Clean Water Act and the State Porter Cologne Water Quality Act.

If measures being taken by the Contractor are inadequate to control water pollution effectively, the Owner's Representative may direct the Contractor to revise the operations and the water pollution control measures. No further work shall be performed until the water pollution control measures are adequate as determined by the Owner's Representative.

Measurement and Payment

The contract lump sum price paid for Water Pollution Control and Final Stabilization includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work necessary, including implementing, monitoring, maintaining, and correcting water pollution control practices, final stabilization (hydroseeding) and doing all other work as shown on the plans, as specified in the Standard Specifications and these Special Provisions, and as directed by the City. Payment for water pollution control shall be paid for as "Water Pollution Control and Final Stabilization." Partial Payments will be made in accordance with the following:

Percent of Original Contract Amount Earned	Allowable Percentage of Lump Sum Price for the Item
5%	5%
10%	10%
25%	25%
50%	50%
75%	75%
100%	100% (Contract Acceptance)

11.0 DUST CONTROL

General

Dust control shall conform to the provisions in Section 14-11.04, "Dust Control," of the Standard Specifications and these Special Provisions.

Construction

The following on-site mitigation measures shall be implemented for the duration of clearing and grubbing, demolition, excavation, concrete and paving activities to control dust:

1. Trucks hauling dirt or other loose materials that exceed the top of the sides of the bed shall be covered.
2. A water truck shall be available as needed to prevent a dust nuisance or as directed by the City's Representative.

This list is not inclusive and Contractor is responsible and liable for controlling dust at all times from all activities in the project area.

Measurement and Payment

Full compensation for conforming to the provisions in this section, not otherwise provided for, shall be considered as included in prices paid for the various contract items of work involved and no additional compensation will be allowed therefor.

12.0 CLEARING AND GRUBBING

General

Clearing and grubbing shall conform to the provisions in Section 17-2, "Clearing and Grubbing," of the Standard Specifications. Site clearing, grubbing, and stripping should be conducted during dry-weather conditions only, unless approved in advance by the City.

Construction

Clearing and grubbing shall include, but not be limited to, the removal from the areas of work all weeds, trees, blading soil to expose edge of pavement, debris, concrete/asphalt rubble, vegetation including roots and stumps as necessary to accommodate construction operations, or as directed by the City's Representative. In addition, minor clearing of trash and debris may be necessary for within the limits of work.

Vegetation and organic material should be cleared and stripped of the upper 4-inches containing organic matter. Actual stripping depth may be determined by the City's Representative in the field at the time of stripping. The strippings shall be removed from the site and disposed of by the Contractor.

Measurement and Payment

The lump sum price paid for Clearing and Grubbing shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals necessary to perform the work as stated herein and shown on the plans including but not limited to removal and disposal of trash, blading soil, concrete rubble, vegetation, trees, sod, roots, weeds and other debris, pruning of existing vegetation as specified herein and as directed by the City's Representative. Payment for clearing and grubbing shall be paid for as "Clearing and Grubbing."

13.0 DEMOLITION OF EXISTING FACILITIES

General

The work performed in connection with various existing facilities shall conform to the provisions in Section 15, "Existing Facilities," of the Standard Specifications and these Special Provisions.

Construction

Prior to removing concrete and hot mix asphalt surfacing, all utility covers shall be marked and identified to avoid causing damage to the lid or frame. Contractor will be responsible for maintaining any temporary HMA fill material over these facilities until the final paving surface is installed.

Sawcut or grind the existing hot mix asphalt pavement where old pavement is to tie into the new pavement.

If asphalt concrete has not been placed to the level of existing pavement before the pavement is to be opened to public traffic a temporary asphalt concrete taper shall be constructed. Asphalt concrete for temporary tapers shall be placed to the level of the existing pavement and tapered on a slope of 1:200 (Vertical: Horizontal) or flatter to the level of the planed area.

All material removed shall be considered the property of the Contractor and shall be removed and disposed of in accordance all applicable laws at the Contractor's expense.

The material planed or removed from the roadway surface, including material deposited in existing gutters or on the adjacent traveled way, shall be disposed of in accordance with the Standard Specifications and applicable regulations. Before disposing material on non-City owned property, the Contractor shall obtain any required legal permissions from property City.

The Contractor shall take all necessary measures to avoid the dispersion of dust. Attention is directed to Subsection 14-9.03, "Dust Control," of the Standard Specifications and these Special Provisions.

Existing concrete structures, drainage inlets, pipe culverts, waterlines, signs, posts, striping, markings, pavement markers, and other miscellaneous items where specified on the plans shall be removed and disposed or salvaged, in accordance with the provisions of Section 15 of the Standard Specifications.

All material removed shall be considered the property of the Contractor and shall be removed and disposed of in accordance all applicable laws at the Contractor's expense. Demolished materials shall be disposed of outside the right of way in accordance with the Standard Specifications and applicable regulations. Before disposing material on non-City owned property, the Contractor shall obtain any required legal permissions from property City.

The Contractor shall restore at their expense all landscaping including sod, irrigation lines, miscellaneous concrete and/or other item of work to preconstruction status, in like kind or better, damaged by their operations.

Measurement and Payment

Measurement and payment for demolition of existing facilities shall include furnishing all labor, materials, tools, equipment and incidentals for doing all the work involved in removing, disposing and salvaging concrete structures, drainage inlets, pipe culverts, waterlines, water valves, signs, posts, striping, markings, pavement markers, and other miscellaneous items where specified on the plans including necessary sawcut, as shown on the plans, as specified herein and in the Standard Specifications and as directed by the City's Representative. Payment for miscellaneous demolition and removal items as described above shall be paid for on a lump sum basis as "Miscellaneous Demolition and Removal."

14.0 EARTHWORK

General

Earthwork shall conform to the provisions in Section 19-2 "Roadway Excavation" and Section 19-6 "Embankment Construction" of Section 19 "Earthwork," of the Standard Specifications and these special provisions. Earthwork activities should be conducted during dry-weather conditions only.

Materials

Embankment material shall be from jobsite excavations or import borrow. Imported borrow, if needed, shall comply with Section 19-7 "Borrow Material" of the Standard Specifications.

Imported topsoil (sidewalk backfill) shall consist of fertile, friable soil of loamy character that contains organic matter in amounts natural to the region and be capable of sustaining healthy plant life. Imported topsoil must be free from deleterious substances such as litter, refuse, toxic waste, stones larger than ½ inch in size, coarse sand, heavy or stiff clay, brush, sticks, grasses, roots, weeds, and other substances detrimental to plant, animal, and human health.

Construction

Earthwork consist of all excavation (cut) and embankment (fill) necessary for the grading and construction of curbs, gutters, sidewalks, driveways, curb ramps, roads, staging area connections, slope rounding, benching, and ditches regardless of the nature or characteristics of material encountered during construction. Work also includes the removal of existing sub-base and base as well as subgrade preparation.

The upper 6 inches of subgrade shall be scarified, moisture conditioned, and recompacted to a minimum of 95 percent relative compaction beneath HMA and concrete surfaces (curbs, sidewalks and driveways). All other areas shall meet a minimum of 90 percent relative compaction.

In addition to required testing, the City's Representative may require the Contractor to demonstrate compliance with subgrade requirements by proof rolling (in addition to compaction testing), which shall be conducted with a fully loaded 10 yard dump truck with a minimum rear axle load of 8 tons or equivalent. The subgrade surface should provide a firm and unyielding surface under the load of the dump truck. Unsuitable soils identified during proof rolling shall be removed and replaced in accordance with this section.

Embankment (fill) construction includes:

1. Preparing areas to receive embankment material
2. Placing and compacting embankment material including:
 - a. Suitable material within roadway areas where unsuitable material has been removed
 - b. Material in holes, pits, and other depressions within the roadway and trail areas

All embankment fill material shall be compacted to a minimum of 90 percent except for the upper 6 inches beneath a concrete or HMA surface. This material shall be compacted to a minimum of 95 percent. Fill should be placed in loose lifts (less than approximately 8-inches-thick) on a prepared subgrade.

Unrestrained cutslopes should be sloped at 2:1 (Horizontal:Vertical) or flatter.

Before disposing of any excess material, the Contractor shall obtain any required legal permissions from property owner, and a disposal permit (if required by jurisdiction).

Curbs (excluding warning curbs), sidewalks, and curb ramps shall be backfilled to within 2 inches of finished walking surface grade. The top 3 inches of backfill material shall be compacted import topsoil. Topsoil shall be hydroseeded per these Special Provisions.

During wet weather periods, sequence construction in a manner to minimize impact on open earthwork and compaction operations.

Measurement and Payment

The lump sum price paid shall be considered full compensation for furnishing all labor, materials (including import borrow and import topsoil), tools, equipment, transportation, and incidentals; and for performing placement, compaction, and all of the work involved as detailed in the Standard Specifications, these Special Provisions, and the plans. Payment of excavation and embankment shall be paid for as "Earthwork."

15.0 AGGREGATE BASE

General

This work shall consist of furnishing, grading, and compacting aggregate base for new structural pavement section on the prepared surface or sub-grade to the lines, grades, and thickness where called for in the plans and these Special Provisions.

Materials

Class 2 Aggregate base shall conform to Section 26-1.02 of the Standard Specifications.

Construction

Grading shall comply with the requirements of Section 19, "Earthwork", of the Standard Specifications, and these Special Provisions. During any grading operations, the Contractor is specifically directed to "Preservation of Property" of these Special Provisions. The Contractor shall protect any items, facilities, or improvements, as necessary, in order to avoid causing damage.

Measurement and Payment

Measurement and payment for Class 2 Aggregate Base shall be measured and paid for by the cubic yard furnished and compacted in-place, based on the lines and grades shown on the plans. Payment for aggregate base within the roadway asphalt paving sections shall be paid for as "Class II Aggregate Base" and quantities shall be final pay quantities stated in the Bid Schedule. No additional allowance will be made unless the dimensions as shown on the plans are changed by the City's Representative.

Aggregate base used for drain inlets, trench backfill, minor concrete items (curbs, gutters, sidewalks, curb ramps, etc.), and other structures will not be paid directly but will be considered paid under their respective contract items.

The above contract unit cost shall be considered full compensation for furnishing all labor, materials, tools, equipment, transportation, and incidentals; and for performing placement, compaction, and all of the work involved as detailed in the Standard Specifications, these Special Provisions, and the plans.

16.0 SUBGRDE ENHANCEMENT GEOTEXTILE

General

This item shall consist of a providing subgrade enhancement geotextile for new pavements sections where shown on the plans.

Materials

Subgrade enhancement geotextile shall be Class B1 in accordance to Section 96-1.02O of the Standard Specifications, or a biaxial geogrid in accordance to Section 96-102P of the Standard Specifications.

Construction

Install in accordance to Section 19-10 of the Standard Specifications.

Measurement and Payment

Measurement and Payment for the subgrade enhancement geotextile shall be made on a square yard basis furnished and installed in accordance and these specifications. The payment quantity for subgrade enhancement geotextile is the area measured parallel to the surface, not including the additional quantity used for overlaps. The price shall be full compensation for furnishing all materials, for all preparation, delivery and application of these materials, and for all labor, equipment, tools, and incidentals necessary to complete this item. Payment for subgrade enhancement geotextile shall be paid for as "Subgrade Enhancement Geotextile."

17.0 STORM DRAIN STRUCTURES

General

This work shall consist of furnishing and installing new drainage inlet, and converting drainage inlet to junction box where called for in the plans and these Special Provisions.

Materials

Prior to ordering storm drainage inlets, catch basins or pipes, Contractor shall pothole to verify depth and location of existing underground utilities which may affect the depth and location of new storm drainage facilities.

Storm Drain Inlets shall be precast concrete, with minimum 4-inch thick walls, and 6-inch thick bottom or as specified on the plans. Storm Drain Inlets shall conform to the provisions of Section 70 "Miscellaneous Drainage Facilities" and these Special Provisions. Flat grates for Storm Drain Inlets, unless notes otherwise on the plans, shall be galvanized steel, ADA compliant, Bicycle proof, with H-20 loading.

Construction

Excavation and embankment operations shall comply with the requirements of Section 19, "Earthwork", of the Standard Specifications. During any excavation and backfilling operations, the Contractor is specifically directed to "Preservation of Property" of these Special Provisions. The Contractor shall protect any items, facilities, or improvements, as necessary, in order to avoid causing damage.

Place bedding material at trench bottom, level materials in continuous layer. No pipe shall be laid until the trench subgrade and bedding have been inspected and approved. Laying of lines shall begin at the lowest point in the direction of flow. All piping, fittings, and accessories shall be assembled per manufacturer's recommendations. Pipe deflections shall be kept to a minimum, any deflection in piping shall be per manufacturer's requirements. Before lowering pipe into the trench, the pipe shall be inspected. Cracked, chipped, broken, or otherwise defective pipe will be rejected and removed from the job site. Where sewer lines are being crossed, pipelines of 20 foot lengths shall be used with the length centered to provide 10 feet of distance from the sewer line to the nearest joint.

Drainage inlets and other structures shall be placed as shown on the plans. Drainage inlet units shall be installed on a minimum 6" pad of level class II aggregate base. Wall sides to be plumb. Establish elevations and pipe inverts for inlets and outlets as indicated on plans. All penetrations and joints shall be grouted smooth. The catch basin rim elevations shall be installed within the tolerance of +0.00' and -0.10' from the rim elevations shown on the plans. The finish grade around the catch basin inlet must slope to drain storm water into the catch basin, refer to the grading plan. No depressions resulting in the ponding of water will be permitted adjacent to the catch basin grate.

Protect drainage inlet, junction box, pipe, and aggregate cover from damage or displacement until backfilling operation is in progress. Take care not to damage or displace installed pipe and joints during construction of pipe supports, backfilling, testing, and other operations. Repair or replace pipe that is damaged or displaced from construction operations.

Connect new drainage inlet to existing storm drain pipe at the locations shown on the plans. Remove only enough material from the existing pipe as necessary to accommodate the new drainage inlet. Grout gap around pipe penetration to form a smooth and watertight seal.

Modify existing structures as called for on the plans.

Measurement and Payment

Measurement and payment for drainage inlet and modifications to existing storm drain inlet and junction boxes shall be paid on a unit cost basis as identified in the Bid Schedule and specified below:

- Storm drain inlets will be measured and paid on a unit basis for each assembly installed, complete and in place. Payment for new storm drain inlet shall be paid for as "Drainage Inlet (Type G1)."
- Storm drain inlet modifications will be measured and paid for on a unit basis for each drainage inlet modified, complete and in place. Payment for drainage inlet modifications shall be paid for as "Convert DI to Junction Box."

The above contract unit cost shall be considered full compensation for laying out the drainage inlet, and modifying existing storm drain inlets and junction boxes, excavation, subgrade preparation, bedding, backfill, aggregate base, compaction, concrete, connection of piping, frames and grates, and site cleanup. This item covers all labor, materials, tools, equipment, transportation, and incidentals; and other expenses to provide a finished product and all of the work involved as detailed in the Standard Specifications, these Special Provisions, and the plans.

18.0 MINOR CONCRETE

General

Minor Concrete shall conform to the provisions of Section 51-7 "Minor Structures", Section 90-2 "Minor Concrete", Section 73 "Concrete Curbs and Sidewalks", Section 52 "Reinforcement", all of the Standard Specifications, and applicable portions of these Special Provisions.

Concrete curbs, gutters, curb ramps, and sidewalks shall conform to Section 73 "Concrete Curbs and Sidewalks" of the Caltrans Standard Specifications.

Materials

Concrete shall be minor concrete conform to the provisions of Section 90-2 of the Standard Specifications and these Special Provisions.

Admixtures shall comply with the provisions of Section 90-1.02E of the Standard Specifications.

Reinforcement steel shall conform to the provisions in Section 52, "Reinforcement," of the Standard Specifications and these Special Provisions.

Class 2 aggregate base shall conform to Section 26-1.02 of the Standards Specifications.

Drilling and bonding of reinforcement into existing concrete shall conform to the provisions in Section 51-1.03E(3), "Drill and Bond Dowels" of the Standard Specifications and these Special Provisions.

Construction

The Contractor shall protect existing facilities from damage, and discoloration from concrete splash. Adjacent concrete facilities shall be covered during concrete placement to prevent concrete splash and excess concrete from staining the adjacent concrete. After initial placement, strikeoff and finishing, the protection shall be removed and the adjacent concrete cleaned.

After the subgrade is prepared, moisture conditioned, and compacted to the relative compaction shown in the plans, the Contractor shall continuously maintain the subgrade in a uniform condition at the moisture content obtained during subgrade compaction until the concrete is placed.

When new concrete pavement (concrete curbs, gutters, sidewalks, curb ramps, and concrete pavement) adjoins existing pavement, drill and dowel rebar as shown on the plans, but not less than #4's at 24-inches on-center.

The maximum variation from design elevation shall not exceed +/- 0.02 feet. In some instances, particularly in critical drainage areas, tolerances may be reduced to zero.

Concrete facilities shall be installed to maintain or provide positive drainage. The ponding of water in excess of 1/8" will not be allowed. Concrete placed that results in the ponding of water in excess of 1/8" shall be removed and replaced at Contractors expense. At City's request, Contractor shall provide and apply sufficient water to concrete pavement to determine whether pavement provides adequate surface drainage.

Adding water to the surface of the concrete to assist in finishing operations shall not be permitted.

Before final finishing is completed and before the concrete has taken its initial set, the edges shall be carefully finished with the radius shown on the plans or a radius to match the existing construction. Apply medium broom finish transverse to centerline or direction of travel. Final surface shall be slip resistant.

Concrete shall be thoroughly consolidated against and along the faces of all forms and adjacent concrete. After the forms are removed, excess concrete below the form surface shall be removed to be flush with the form face.

The Contractor shall always have materials available to protect the surface of the fresh concrete against rain. These materials shall consist of burlap, curing paper, or plastic sheeting. If plastic sheeting is used, it shall not be allowed to contact finished concrete surfaces.

Concrete shall be cured by protecting it against loss of moisture, rapid temperature change, and mechanical injury. The concrete shall be allowed to cure for 72 hours prior to placing adjacent HMA.

After the concrete is placed, cured, and the forms have been removed, the Contractor shall clean the site of all concrete and forming debris. Any gaps remaining between the new curbs, gutters, driveways, etc., shall be filled with full depth HMA. The total thickness of the restored pavement shall match that of the existing pavement.

Concrete smoothness test may be required at City's sole discretion. Test and correct both high and low points as determined by a straightedge. A 12-foot straightedge shall be used to determine deficiencies parallel to the direction of travel and shall not exceed 3/8 of an inch. A 4-foot straightedge shall be used to determine deficiencies perpendicular to the direction of travel and shall not exceed 1/4 of an inch. The smoothness test results shall be independent of any grade requirements. Acceptance of smoothness test does not necessarily guarantee final acceptance.

The City may also test slope conformance with the plans and CBC. Finished slopes will be tested with a 2-foot long digital level. Any work found to not be in conformance with the plans or CBC, shall be replaced at Contractor's expense.

The Contractor shall also protect the concrete against damage from traffic and vandalism. If the concrete is damaged or vandalized, the Contractor shall make the necessary repairs at its own expense. The repair procedure for damaged or vandalized concrete shall be approved in advance by the City's Representative. Grinding the surface of vandalized concrete will not be considered an approved method of repair.

Curbs (excluding warning curbs), sidewalks, and curb ramps shall be backfilled to within 2 inches of finished walking surface grade. The top 3 inches of backfill material shall be compacted import topsoil. Topsoil shall be hydroseeded per these Special Provisions.

Measurement and Payment

Measurement and payment for minor concrete shall be paid on a unit cost basis as identified in the Bid Schedule and specified below:

- Curbs, sidewalk retaining curbs (excluding curb ramp retaining or warning curbs), and curb and gutter will be measured and paid on a lineal foot basis measured along the top or flowline of curb. Drop curbs and gutter pans adjacent to curb ramps will be measured and paid as curbs/gutters. Payment shall include incidental items associated with curbs including but, not limited to HMA edge patching (between sawcut and curb).
- Sidewalks, curb ramps (including retaining and warning curbs), and 6" concrete pavement will be measured and paid on the square foot basis.

All work shall be performed as shown on the plans and described here. The price paid shall be considered full compensation for furnishing all labor, materials and equipment necessary to complete the work, including but not limited to: layout of forms, earthwork, aggregate base grading and compaction, concrete and concrete placement and finishing, curing of concrete, striping of forms, site and area cleanup, disposal of waste material and waste concrete, and all other work necessary for completion of minor concrete work. No additional compensation will be allowed therefor.

19.0 DETECTABLE WARNING SURFACES

General

Detectable warning surface shall conform to section 73-1.02B of the Standard Specifications, applicable portions of these Special Provisions, and the requirements established by the Department of General Services, Division of State Architect.

Material

Detectable warning surfaces shall be by Armor-Tile, ADA Solutions, Armorcast Products, or approved equal. The manufacturer shall provide a written 5-year warranty for prefabricated detectable warning surfaces, guaranteeing replacement when there is defect in the dome shape, color fastness, sound-on-cane acoustic quality, resilience, or attachment. Any detectable warning surface equivalent specification will be submitted in writing for approval to the City's Representative.

Detectable warning surfaces shall be cast-in-place.

The color of detectable warning surfaces shall be Federal Yellow.

Detectable warning mats shall be used at the full width, to the maximum extent possible using the largest standard size available for each specific location. The contractor shall limit the number of cuts or splices necessary and shall only splice mats as needed to conform to the shape of the curb ramp or crossing. If a mat must be cut and joined, the splice shall be flush, gap-free and shall maintain the dome spacing as specified on the plans.

Construction

Install detectable warning surface in accordance with the manufacturer's written recommendations. Detectable warning surfaces shall be installed at a 1.5% maximum slope, and shall be installed to maintain or provide positive drainage. The ponding of water in excess of 1/8" will not be allowed. Detectable warning surfaces placed that results in the ponding of water in excess of 1/8" shall be removed and replaced at Contractors expense. At City's request, Contractor shall provide and apply sufficient water to concrete pavement to determine whether installed mat provides adequate surface drainage.

Measurement and Payment

Measurement of Detectable Warning Surface will be measured on a square foot basis for detectable warning surfaces installed complete and in place. The contract price paid per square foot for detectable warning surface shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all of the work involved installing detectable warning surfaces new concrete, complete and in place, as shown on the plans, in accordance with the manufacturer's recommendations, and as directed by the City's Representative.

Payment for excess quantities or waste will not be made. Payment for detectable warning surfaces shall be paid for as "Detectable Warning Surface" and quantities shall be final pay quantities stated in the Bid Schedule. No additional allowance will be made unless the dimensions as shown on the plans are changed by the City's Representative.

20.0 REPLACE ASPHALT CONCRETE SURFACING

General

This work shall consist of removing existing asphalt concrete surfacing and necessary underlying base material and replacing the removed material with new asphalt concrete as identified in the field and in conformance with these Special Provisions. The exact limits of asphalt concrete surfacing to be removed and replaced will be determined by the Engineer. Work shall be in accordance to Section 39-3.02 "Replace Asphalt Concrete Surfacing" of the Caltrans Standard Specifications and these special provisions.

Materials

3/4 inch, Type A HMA mix (Caltrans approved) shall be used and shall not include crumb rubber unless modified by the City's Representative. Provide the City with a mix design approved by Caltrans District 1 materials laboratory within the least 12 months.

The asphalt binder grade shall be PG 64-16 conforming to Section 92, "Asphalts", of the State Standard Specifications.

Tack coat shall be emulsified asphalt Grade RS-1, SS-1, or SS-1h and shall conform to Section 94, "Asphaltic Emulsions", of the State Standard Specifications.

Construction

The limits of the asphalt concrete to be removed shall be in neat, straight lines and as indicated in the field or as determined by the Engineer. The dimensions of the areas to be replaced vary. Areas to be removed will have a minimum width of 4 feet and will be defined in 2 foot increments (e.g. removal widths of 4ft, 6ft, 8ft, etc.) up to the full width of the roadway. Pavement grinder shall be capable of grinding to the minimum width of 4 feet.

Before removing asphalt concrete, outline the replacement area and cut neat lines with a saw or grind to full depth of the existing asphalt concrete. Do not damage asphalt concrete and base remaining in place.

The depth of the material removed shall be a minimum of 4 inches. The exposed surface will be inspected by the Engineer to verify that is firm and unyielding. If the Engineer determines that the surface is yielding, an additional 4 inch lift of asphalt and/or aggregate base shall be removed and inspected again. The process shall continue until the exposed surface is deemed acceptable by the Engineer. Where replace asphalt concrete surfacing is shown, remove the full depth of the existing asphalt concrete surfacing and replace with HMA. The Engineer determines the exact limits of asphalt concrete surfacing to be replaced.

Replace asphalt concrete in a lane before the lane is specified to be opened to traffic.

Prior to placing asphalt on the exposed surface, the surface shall be proof rolled and free of any loose debris (including any remaining layers of asphalt that are less than 1" thick). A tack coat shall be applied to the approved surface and coated along all edges. Following the tack coat, asphalt concrete shall be placed and compacted up to the level of the original surface in lifts no greater than 4 inches thick. Testing in-between lifts may be required as determined by the Engineer.

The Contractor shall take particular care to only remove material to the limits specified and without damage to the areas that are to remain. Damage to areas that are to remain in place shall be repaired to a condition satisfactory to the Engineer. Any additional material removed and replaced outside the specified limits (as a result of damage or Contractors of means and methods) shall be at the Contractor's expense.

If you excavate the base beyond the specified plane, replace it with HMA.

Place HMA using method compaction as specified in section 39-2.01C(2)(c).

Removed materials shall be disposed of on non-City property. Contractor shall follow the requirements in Section 5-1.20B(4) "Contractor-Property owner Agreement" of the Standard Specifications.

Measurement and Payment

Asphalt concrete surface replacement will be measured by the cubic yard. The volume to be paid for will be calculated based on the dimensions measured in the field by the engineer. The contract price paid per cubic yard for replace asphalt concrete surfacing shall include full compensation for furnishing all labor, materials (including asphalt concrete), tools, equipment, and incidentals, and for doing all the work involved in removing existing asphalt concrete and necessary base, disposing of material and replacing asphalt concrete surfacing, complete in place, as shown on the plans, as specified in these specifications, and as directed by the Engineer. Payment for asphalt concrete surface replacement shall be paid for as "Replace Asphalt Concrete Surfacing".

21.0 COLD PLANE ASPHALT CONCRETE

General

Existing asphalt concrete pavement shall be cold planed at the locations and to the dimensions shown on the plans and shall conform to the provisions in Section 15 "Existing Facilities."

Cold planing shall include all work necessary to remove existing asphalt to a predetermined depth as indicated on the drawings or these specifications. The work includes, but is not limited to, removal of the existing pavement on existing gutters, removal of pavement to limits indicated on the plans, conform grinds and cleaning and disposal of debris. Full depth grinding shall also be performed as indicated on the plans.

Planing asphalt concrete pavement shall be performed by the cold planing method. Planing of the asphalt concrete pavement shall not be done by the heater planing method.

The machine used for planing shall have performed satisfactorily on similar work and shall meet the following requirements herein.

The planing machine shall be specifically designed and built for the planing of bituminous pavements without the addition of heat. Cold planing machines shall be equipped with a cutter head not less than 30 inches in width and shall be operated so that no fumes, dust or smoke will be produced.

The machine shall be capable of removing the paving material next to curbs or gutters and be designed such that the operator thereof can at all times observe the planning operation without leaving the controls.

Construction

Prior to cold planing, on streets to have a uniform depth of the existing surface removed, all utility covers shall be lowered such that the cutting teeth of the planing machine passes over the adjusted lid without causing damage to the lid or frame. Contractor will be responsible for maintaining any temporary asphalt fill material over these facilities until the final paving surface is installed. The Contractor shall clearly mark or reference lowered utility covers in case emergency access is required by the agency responsible for operation of the utility system.

The depth, width, and shape of the cut shall be as shown on the typical cross sections or as designated by the City's Representative. The final cut shall result in a uniform surface conforming to the typical cross sections. The outside lines of the planed area shall be neat and uniform. Planing asphalt concrete pavement operations shall be performed without damage to the surfacing to remain in place.

Planed widths of pavement shall be continuous except for intersections at cross streets where the planing shall be carried around the corners and through the conform lines. Following planing operations, a drop-off of more than 0.15-foot will not be allowed between adjacent lanes open to public traffic.

Pavement to be cold planed may contain existing pavement fabric.

Where transverse joints are planed in the pavement at conform lines no drop-off shall remain between the existing pavement and the planed area when the pavement is opened to public traffic. If asphalt concrete has not been placed to the level of existing pavement before the pavement is to be opened to public traffic a temporary asphalt concrete taper shall be constructed. Asphalt concrete for temporary tapers shall be placed to the level of the existing pavement and tapered on a slope of 1:200 (Vertical: Horizontal) or flatter to the level of the planed area.

During the cold planing operation, the Contractor shall vacuum sweep the roadway with mechanical equipment and remove all loosened material from the project site until completion of the removal work. In addition to removing the cold planned asphalt concrete, the Contractor shall remove any slurry seal or asphalt concrete which is adhered to the top of the adjacent gutter or cross gutter.

The material planed from the roadway surface, including material deposited in existing gutters or on the adjacent traveled way, shall be disposed of in accordance with the Standard Specifications and applicable regulations. Before disposing material on non-City property, the Contractor shall follow the requirements in Section 5-1.20B(4) "Contractor-Property owner Agreement." Removal operations of cold planed material shall be concurrent with planing operations and follow within 50 feet of the planer, unless otherwise directed by the City's Representative.

The Contractor shall take all necessary measures to avoid the dispersion of dust. Attention is directed to Subsection 14-9.03, "Dust Control," of the Standard Specifications and these Special Provisions.

Asphalt concrete for temporary tapers shall be commercial quality and may be spread and compacted by any method that will produce a smooth riding surface. Temporary asphalt concrete tapers shall be completely removed, including the removal of loose material from the underlying surface, before placing the permanent surfacing. The removed material shall be disposed of in accordance with the Standard Specifications and applicable regulations. Before disposing material on non-City property, the Contractor shall follow the requirements in Section 5-1.20B(4) "Contractor-Property owner Agreement."

Operations shall be scheduled so that not more than 7 calendar days shall elapse between the time when transverse joints are planed in the pavement at the conform lines and the permanent surfacing is placed at the conform lines.

Measurement and Payment

Cold plane asphalt concrete pavement to the depth shown on the plans will be measured based on a square yard basis. The quantity to be paid for will be the actual area of surface cold planed irrespective of the number of passes required to obtain the depth shown on the plans. The contract price paid per square yard for cold plane asphalt concrete pavement shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in cold planing asphalt concrete surfacing and disposing of planed material, including removing and disposing of existing pavement markings and pavement markers, and furnishing the asphalt concrete for constructing, maintaining, removing, and disposing of temporary asphalt concrete tapers, as specified in the Standard Specifications and these Special Provisions and as directed by the City's Representative. Payment for cold planing asphalt concrete shall be paid for as "Cold Plane Asphalt Concrete – Conform Grinding."

22.0 HOT MIX ASPHALT

General

This work includes producing and placing Hot Mix Asphalt (HMA), in accordance with Section 39 of the Standard Specifications, these Special Provisions, and the plans. Work to be performed under this Section covers all labor, materials, tools, equipment, transportation and incidentals necessary to construct HMA pavements. This shall include dike, leveling courses, overlays, and top courses, as shown on the plans and these specifications.

Replace asphalt concrete pavement shall conform to Section 39-3.02 "Replace Asphalt Concrete Surfacing" of the Caltrans Standard Specifications.

Material

All HMA materials shall be as specified in Section 39, "Hot Mix Asphalt", of the State Standard Specifications; these Special Provisions; and the plans and typical sections.

3/8 inch, Type A HMA mix shall be used for leveling course.

1/2 inch, Type A HMA mix shall be used for overlays and top course.

1/2 inch or 3/4 inch, Type A HMA may be used for base courses only (3/4" shall not be used for top course or overlay.

HMA mix shall not include crumb rubber unless modified by the City's Representative. Provide the City with a mix design approved by Caltrans District 1 materials laboratory within the least 12 months.

The asphalt binder grade shall be PG 64-16 conforming to Section 92, "Asphalts", of the State Standard Specifications.

Tack coat shall be emulsified asphalt Grade RS-1, SS-1, or SS-1h and shall conform to Section 94, "Asphaltic Emulsions", of the State Standard Specifications.

Each delivery ticket shall include information on the material type, binder type, oil content, and the mix design number. Material delivered to the project without such annotations shall be subject to rejection.

Construction

A minimum 2 days prior to paving operations, the paving foreman shall attend a meeting with the Owner's construction management team to review Contractor's planned paving operations, including traffic control.

Prior to paving, Contractor shall mark all existing utility boxes using an approved marker. Spread and compact HMA in accordance with Section 39 of the Standard Specifications and these Special Provisions, to the thickness specified on the plans.

HMA pavement shall be installed to maintain or provide positive drainage. The ponding of water in excess of 1/8" will not be allowed. HMA pavement placed that results in the ponding of water in excess of 1/8" shall be removed and replaced at Contractor's expense. At City's request, Contractor shall provide and apply sufficient water to pavement to determine whether pavement provides adequate surface drainage.

Provide tack coat to all vertical surfaces (curbs, gutters, construction joints existing pavements, etc.) against which new HMA paving is placed. Failure to provide tack coat as required may result in a reduction of payment made for HMA.

Taper the new HMA surfacing to match the existing pavement section at tie-in points and to provide for a smooth transition as directed by the City's Representative.

Smoothness may be tested by the City using a 12-foot straightedge, and shall conform to Section 39 of the Standard Specifications and these special provisions.

Measurement and Payment

The various bid items for Hot Mix Asphalt will be measured by the Ton, as determined from certified weigh tickets delivered to and signed by the City's Representative on site. Placing Hot Mix Asphalt Dike will be measured and paid on the lineal foot basis.

HMA will be paid for at the contract price for HMA furnished and placed per the lines and grades shown on the plans, and shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in constructing HMA pavement, complete in place, as shown on the plans and as specified in the State Standard Specifications and these Special Provisions, and as directed by the City's Representative and no additional compensation will be allowed therefor.

No direct payment for HMA patches against new concrete will be made. No payment will be made for the correction of deficiencies in construction. No payment will be made for over-run quantities unless pre-approved by City's Representative. The collection and signing of weight tickets shall not either constitute or construe acceptance or approval of over-run quantities.

No payment will be made for the correction of deficiencies in construction. No payment will be made for over-run quantities unless pre-approved by City's Representative. The collection and signing of weight tickets shall not either constitute or construe acceptance or approval of over-run quantities.

23.0 SHOULDER BACKING

General

This work shall consist of furnishing, grading, and compacting aggregate base and construction shoulder backing adjacent to the edge of the new pavement surface where called for in the plans and these Special Provisions. Shoulder backing shall conform to the provisions in Section 19-9, "Shoulder Backing," of the Standard Specifications and these Special Provisions.

Materials

Shoulder backing material shall conform to Section 19-9 of the Standard Specifications. Class 2 Aggregate Base is also acceptable for shoulder backing material.

Construction

Grading shall comply with the requirements of Section 19, "Earthwork", of the Standard Specifications. During any grading operations, the Contractor is specifically directed to 5-1.36A "Property and Facility Preservation." The Contractor shall protect any items, facilities, or improvements, as necessary, in order to avoid causing damage.

Measurement and Payment

"Shoulder Backing" will be paid for by the linear foot measured along the edge of the roadway where the aggregate base abuts the new pavement. The above contract unit cost shall be considered full compensation for furnishing all labor, materials, tools, equipment, transportation, and incidentals; and for performing placement, compaction, and all of the work involved as detailed in the Standard Specifications, these Special Provisions, and the plans and typical sections. No additional compensation will be allowed therefor. Payment for shoulder backing shall be paid for as "Shoulder Backing".

24.0 ADJUST WATER BOX, MANHOLE COVER, MONUMENT COVER AND UTILITY VALVE COVER TO GRADE

General

This work shall consist of raising or adjusting existing manhole covers, monument covers, and utility valve covers to the finished grade of the resurfaced asphalt pavement or new concrete and shall conform to the

provisions in Section 15 "Existing Facilities" of the Standard Specifications, these Special Provisions, the plans, and as directed by the City's Representative.

Materials

Contractor shall provide new water valve covers and monument covers for all to be adjusted. Salvage existing valve covers to the City if requested.

New materials shall be in accordance with local standards:

1. Water Valve: G-05, marked "Water"
2. Monument: G-05, marked "Monument"

Concrete used to adjust utility, manhole, and monument covers to grade shall conform to Minor Concrete, of these Special Provisions.

Construction

Unless specifically allowed by the City's Representative, grade rings shall not be used to adjust utility covers.

The Contractor shall properly locate and mark all existing facilities to be raised in advance of paving operation. The Contractor shall adjust all boxes in advance of concrete operations.

The surface of the adjusted facilities shall be true to the new pavement or concrete surface to within one-eighth (1/8") inch deviation. This tolerance shall apply in a single direction only, either up or down. In addition, the adjusted facility shall not vary to the high tolerance on one side and the low tolerance on the other (i.e., the total aggregate tolerance on both sides shall be limited to the 1/8"-inch variation). This variation shall apply to the adjacent patch paving around the facility as well such that neither the paving nor facility vary by more than the stated tolerances.

Measurement and Payment

Measurement and payment for adjusting water box, manhole covers, monument covers, and utility valve covers shall be paid on a unit basis for each unit adjusted and as specified below:

- Payment for adjusting utility covers to grade shall be paid for as "Adjust Utility Valve Cover to Grade."
- Payment for adjusting monument covers to grade shall be paid for as "Adjust Monument Cover to Grade."
- Payment for adjusting manhole covers to grade shall be paid for as "Adjust Manhole Cover to Grade."
- Payment for adjusting water box to grade shall be paid for as "Adjust Water Box to Grade."

The above contract unit cost shall be considered full compensation for furnishing all labor, materials, tools, equipment, transportation, and incidentals; and for performing all of the work involved as detailed in the Standard Specifications, these Special Provisions, and the plans. No additional compensation will be allowed therefor.

25.0 ROADSIDE SIGNS

General

This work shall consist of resetting existing roadside signs (panels only) on a new post and furnishing new roadside sign and post as identified on the plans. Roadside signs shall conform to the Provisions in Sections 82-2, "Signs Panels" and 82-3, "Roadside Signs", of the Standard Specifications and these Special Provisions.

Materials

All roadside signs shall be mounted on a removable metal post with sleeve and anchor in accordance with the Plans. Posts, sleeves and anchors shall be manufactured from galvanized 12 gauge steel conforming to ASTM A653, G90, structural quality, Grade 50, Class 1. Corner welds shall be zinc coated after scarfing operation.

Sign panels shall conform to Section 82-2, "Signs Panels", of the Standard Specifications and the California MUTCD, current Edition.

Construction

Excavate holes to dimensions shown on Plans. Cover post bottom and perforation below ground with duct tape, and place posts in the holes. Back fill around post with minor concrete. Dispose of surplus excavation material offsite.

The line between the center of the top of a post and the center of the post at ground level must not deviate from a plumb line by more than 0.02 foot in 10 feet.

Attached sign panels using manufacturers recommended hardware and procedures. Sign panels shall be securely attached with no excessive movement (no wobbling/shaking of sign panels will be permitted).

Reset existing sign panels on new sign post with anchor sleeves per the plans.

Measurement and Payment

Relocate Roadside Signs shall be measured and paid on a per unit basis for each sign (one or multiple panels) and post system installed complete and in place. The contract price shall include full compensation for furnishing all labor, tools, equipment, and incidentals, and for doing all of the work involved in furnishing and installation complete and in place, including but not limited to: excavation, perforated square steel post with anchor sleeve, installing new or existing sign panel, concrete foundation, disposal of excess excavation material, cleanup and all work as described by the plans and the Standard Specifications, these Special Provisions, and as directed by the City's Representative. Payment for roadside signs shall be paid for as "Relocate Roadside Sign(s), 1-Post."

26.0 TRAFFIC STRIPE, PAVEMENT MARKINGS AND PAVEMENT MARKERS

General

Thermoplastic traffic stripes (traffic lines) and pavement markings shall be applied in conformance with the provisions in Section 84-2, "Traffic Stripes and Pavement Markings," of the Standard Specifications and these Special Provisions.

Pavement markers shall be placed in conformance with the provisions in Section 81-3, "Pavement Markers," of the Standard Specifications and these Special Provisions. Retroreflective pavement markers shall be marked as abrasion resistant on the body of the markers

Material

Thermoplastic material shall be free of lead and chromium, and shall conform to the requirements in State Specification PTH-02ALKYD. Retroreflectivity of the thermoplastic traffic stripes and pavement markings shall conform to the requirements in ASTM Designation: D 6359-99. White thermoplastic traffic stripes and pavement markings shall have a minimum initial retroreflectivity of 250 mcd m lx. Yellow thermoplastic traffic stripes and pavement markings shall have a minimum initial retroreflectivity of 150 mcd m lx.

Preformed melt down thermoplastic striping and markings will not be allowed.

Glass beads comply with section 84-2.02D of the Standard Specifications.

Paint shall comply with section 84-2.02C of the Standard Specifications.

Raised and reflective pavement markers shall comply with Section 81-3 of the Standard Specifications. The specific type to be used shall be consistent with the type generally in use within the local jurisdiction unless directed otherwise by the City's Representative.

Construction

All construction shall conform to the respective provisions of the Standard Specifications, manufacturer's installation requirements, and these Special Provisions. Where striping joins existing striping, as shown on the plans, the Contractor shall begin and end the transition from the existing striping pattern into or from the new striping pattern a sufficient distance to ensure continuity of the striping pattern. Traffic striping and pavement markings shall be free of runs, bubbles, craters, drag marks, stretch marks, and debris.

Thermoplastic traffic stripes and pavement markings shall be applied in one (1) coat.

Measurement and Payment

Measurement and payment for traffic striping and pavement markings shall be made at the contract unit price as shown in the Bid Schedule and as specified below, and shall be full compensation furnishing all labor, materials and equipment necessary to complete the work, including but not limited to: establishing alignment for stripes and layout work, placement of temporary tabs, preparation of surface, placing traffic striping, pavement markings, pavement markers, coordination with the City's Representative, cleanup, and all other work necessary for completion of traffic stripe and pavement markings..

Measurement and payment for thermoplastic traffic stripes shall be made on a linear foot basis measured along the center of each individual stripe type including gaps or dashes. Payment for traffic stripes shall be paid for under the respective payment items for "6" Thermoplastic Traffic Stripe" and "8" Thermoplastic Traffic Stripe."

Measurement and payment for thermoplastic pavement markings (including stripes > 8-inches wide) shall be made on the square foot basis for each marking installed as shown on the plans. Quantities will be determined based on the dimensions shown in the Standard Plans. Payment for thermoplastic pavement markings shall be paid for as "Thermoplastic Pavement Markings."

Measurement and payment for pavement markers shall be made on the per unit basis for each marker installed in accordance to the plans and the Standard Plans. Payment for pavement marker shall be paid for as "Pavement Marker (Retroreflective)."

27.0 ENHANCED PEDESTRIAN CROSSING WARNING SYSTEM

General

The Contractor shall furnish and install a fully functional, wireless solar powered sign RRFB signs system, complete and in place, consisting of a solar power control unit, solar panels and batteries, an aluminum control unit/service equipment enclosure, RRFB light bars, activation mechanisms, post, poles, foundations, and related equipment as necessary for a complete operational system.

Material

General

Design	Two piece system: light bar(s) and solar engine
Color	Black or yellow
Signal head	Powder coated aluminum
Compliance	FHWA MUTCD compliant, FCC EMC Class A verified

System Warranty:	5-year system warranty (excludes vandalism)
Activation Period	20 seconds (confirm with City at time of setup)
Conduit	Sch. 40 PVC electrical conduit
Conductor	Stranded THW polyvinyl chloride coated
Foundation	Minor concrete in accordance to the Section 90-2 of the 2018 Standard Specifications but with not less than six sacks of cement per cubic yard and with a minimum 28-day compressive strength of 3000 psi.
Sidewalk/Curb	Minor concrete in accordance to the Section 90-2 of the 2018 Standard Specifications

Mounting

Square Post	Perforated square post; hot dipped galvanized steel conforming to ASTM A653 designation G90
Hardware	Stainless steel

Power Management

Housing	Top of pole self-contained control cabinet and solar panels; NEMA 3R type aluminum
Rated Usage	300 cycles per day, 25 second activation
Solar Panel	20 watt min.; sized for rated usage and location; <u>provide PV system summary</u>
Battery	12 V DC; field replaceable; non-proprietary
Batter Capacity:	Minimum of 30 days at rated usage (without charging)
Battery Warranty	3-year
Solar Panel Warranty	10-year

RRFB Light Bar

Vehicle LED	3" x 7"; two arrays per side of light bar, amber color
Tell-tale LED	1/2" x 1 3/4" (min.); two per lightbar; amber color
Flash patterns	MUTCD RRFB pulsing pattern
Operation	Pedestrian push button
Auto brightness	Auto brightness for nighttime conditions (no daytime dimming)
LED Pivot	20° off center

Communication

Type	Wireless spread spectrum radio, 902-928 MHz
Range	900 feet (min.)
Network addresses	16 unique addresses to avoid interference between multiple crosswalk locations
Push buttons	Bulldog; powder coated aluminum body, 303 or 316 stainless steel button, ADA compliant, MUTCD compliant; pressure activated

Furnish Certificates of Compliance for all materials.

Construction

All excavated materials from the installation of foundations and other appurtenances shall be removed from the work area as they are generated.

Conductor splices shall be insulated by "Method B" or, at the Contractor's option, splices of conductors shall be insulated with heat shrink tubing of the appropriate size after thoroughly painting the spliced conductors with electrical insulating coating.

In addition to the requirements for splices in detector circuits, the open end of cable jackets or tubing shall be sealed in a manner similar to the splicing requirements to prevent the entrance of water.

Measurement and Payment

Enhanced pedestrian crossing systems shall be paid for at the contract unit price on a unit basis for each enhanced sign system installed on a single post. The price shall include full compensation for furnishing all labor, materials, tools and equipment to construct the system complete and in place, including but not limited to all excavation and backfill, poles, posts, foundations, conduit, conductors, control cabinet, RRFB light bar, mounting hardware, solar and electrical components, batteries, wireless transmitters and receivers, pedestrian push buttons, and sidewalk/curb repair, as shown on the plans and as specified herein, and no additional compensation will be allowed.

Payment for enhanced pedestrian crossing system shall be paid for at the contract unit price shown on the Bid Schedule and will not be paid until the contractor had demonstrated that the system is functioning properly and fully operational.

28.0 FINAL CLEAN-UP**General**

Before final inspection of the work, the Contractor shall clean the work and all ground occupied in connection with the work, of all rubbish, excess materials (including liquid asphalt), and equipment. The roads and driveways shall be thoroughly swept clean of all dirt, dust and foreign material.

All parts of the work shall be left in neat and presentable condition. All existing landscaped and unpaved areas which are disturbed by construction or earthwork operations shall be returned to original existing conditions.

Measurement and Payment

Payment for clean-up in general, shall be considered as included in the unit bid price for other contract items and no additional payment shall be made.

GHD Inc.

718 Third Street

Eureka, CA 95501 USA

T: 1 707 443 8326 F: 707 444 8330 E: eureka@ghd.com

© GHD Inc. 2021

This document is and shall remain the property of GHD. The document may only be used for the purpose for which it was commissioned and in accordance with the Terms of Engagement for the commission. Unauthorized use of this document in any form whatsoever is prohibited.

www.ghd.com

