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# SPECIAL PROVISIONS – SECTION ‘B’

## 1. GENERAL

The Contractor shall take all reasonable precautions to restrict operations to the least area of work possible and to minimize interference with traffic along the County roads, and shall not disturb private property beyond the areas of work.

The Contractor shall provide access to private properties at all times, or ensure alternate detours and access, along with all necessary signage is in place.

The Contractor shall maintain continuous access to the United States Postal Service and emergency services. The Contractor shall notify the local postmaster and emergency services at least 48 hours before work will commence.

Personal vehicles of the Contractor's employees shall not be parked on the traveled way or shoulders, including any section closed to public traffic. Temporary "NO- STOPPING," "NO PARKING," and "TOW-AWAY" signs shall be posted by the Contractor upon authorization of the County.

Weekend work shall be requested the Wednesday before the weekend and approved in advance by the Engineer.

The Contractor shall provide to the Engineer the names, address and telephone numbers of at least two emergency contacts for the duration of the contract.

The Standard Specifications referred to in these "Section B" Special Provisions shall be the 2018 California Department of Transportation (Caltrans) Standard Specifications Book, including the 2018 Revised Standard Specifications, updated 10/15/2021.

## 2. GENERAL REQUIREMENTS

A. LAYOUT OF WORK – The Contractor shall lay out all work from the references given and as shown on the plans, set the necessary markers and stakes and shall be responsible for the correctness of the work.

B. TRAFFIC CONTROL PLAN – The Contractor shall prepare the Temporary Traffic Control Plan (TTCP) for Engineers review and approval. The Stage Construction and Traffic Handling Plan included in the bid documents shall act as a template. The TTCP shall be submitted to the Engineers at the preconstruction meeting and at the minimum shall include number and location of all Construction Area Signs, Temporary Traffic Control Signs including Portable Changeable Message Signs, number of flaggers, pilot cars, etc.

C. SAFETY DATA SHEETS (SDS) – The Contractor shall provide SDS for each product used on site upon request by the Engineer.

D. PROTECTION OF EXISTING FACILITIES AND PROPERTY – Protection of existing facilities shall conform to Section 5-1.36, "Property and Facility Preservation," of the Standard Specifications and these Special Provisions.

   The Contractor shall notify Underground Service Alert (USA) for marking the locations of existing underground facilities at least two (2) working days, but not more than 14 calendar days, prior to performing any excavation or other work close to any underground pipeline, conduit, duct, wire or other structure.

Regional notification centers include but are not limited to the following:

| Notification Center | Telephone Number |
|---|---|
| Underground Service Alert - Northern California (USA) | 1-800-642-2444 |
| | Or 811 |

The Contractor shall immediately notify the County Engineer of any facilities found that may interfere with work to be performed. The Contractor shall take all necessary measures to avoid injury to existing surface and underground utility facilities in and near the site of the work. If damage should occur to the existing facilities, the utility company and the County shall be notified immediately and repairs acceptable to the utility company shall be made at the Contractor's expense.

Existing trees, shrubs, and other plants, that are injured or damaged by reason of the Contractor's operations, shall be replaced by the Contractor.

Full compensation for conforming to the requirements of this section shall be considered as included in the contract prices paid for the various contract items of work and no additional compensation will be allowed.

E. DAMAGES – The Contractor shall be responsible for any damages to existing facilities, utilities and roads due to causes attributable to the work, and all such damaged facilities, utilities and roads shall be repaired when directed by the Engineer and as required to place them in as good as condition as existed before commencement of the work.

F. OWNER NOTIFICATION – The Contractor shall notify all property owners and businesses affected by the project's work with door hangers at least 48 hours before work is to begin. The notice shall be in writing, placed on doors, and shall indicate the Contractor's name and phone number, type of work, day(s) and time when work will occur. Notice shall be reviewed and approved by the Engineer prior to being sent.

Full compensation for conforming to the requirements of this section shall be considered as included in the contract prices paid for the various contract items of work and no additional compensation will be allowed.

G. EMERGENCY SERVICE PROVIDERS NOTIFICATIONS – The Contractor shall furnish the name and phone number of a representative that can be contacted in the event of an emergency. Said information shall be reported to the County Sheriff dispatcher, and updated as required to provide 24-hour phone access.

Full compensation for conforming to the requirements of this section shall be considered as included in the contract prices paid for the various contract items of work and no additional compensation will be allowed.

H. PUBLIC SAFETY – The Contractor shall at all times conduct his work in accordance with Construction Safety Orders of the Division of Industrial Safety, State of California, to insure the least possible obstruction to traffic and inconvenience to the general public, and adequate protection of persons and property in the vicinity of the work.

No access way shall be closed to the public without first obtaining permission from the Engineer

The Contractor shall furnish, erect and maintain all lights, signs, barricades and barriers necessary to give adequate warning to the public at all times and shall provide such guards as may be necessary to prevent accidents and avoid damage and injury.

Should the Contractor fail to provide public safety as specified or if, in the opinion of the Engineer, the warning devices furnished by the Contractor are not adequate, the County may place any warning lights or barricades or take any necessary action to protect or warn the public of any dangerous condition connected with the Contractor's operations and the Contractor shall be liable to the County for all costs incurred plus 100%.

Nothing in this section shall be construed to impose tort liability on the County or Engineer. Full compensation for conforming to the requirements of this section shall be considered as included in the contract prices paid for the various contract items of work and no additional compensation will be allowed.

I. WATER FOR CONSTRUCTION AND DUST CONTROL – Construction and testing water shall conform to Section 17, "Watering," of the Standard Specifications and these Special Provisions.

Water for construction activities shall be provided by the Contractor. The Contractor shall contain all water within the limits of the project and prevent discharge to adjacent wetland, ditches, creeks and other facilities.

Full compensation for conforming to the requirements of this section shall be considered as included in the contract prices paid for the various contract items of work and no additional compensation will be allowed.

J. EXISTING UTILITIES – The Contractor shall notify all utility companies and request field location markings of existing facilities prior to commencing construction. Where potential conflict with existing underground utilities may constitute a safety hazard or interfere with the progress of work, such facilities shall be hand-excavated to determine their precise location. Contractor shall be liable for damages to all utilities whether so located and marked or not.

It is not the intent of the Plans to show the exact location or extent of existing underground utilities or structures, and the Engineer assumes no responsibility therefor.

It is the Contractor's responsibility to verify all existing utility locations and notify the Engineer in case of conflict.

Full compensation for conforming to the requirements of this section shall be considered as included in the contract prices paid for the various contract items of work and no additional compensation will be allowed.

K. COOPERATION – The Contractor shall cooperate with the occupants of the existing facilities adjacent to the project and coordinate the work in such a manner as to minimize the disruption to the existing facilities.

Full compensation for conforming to the requirements of this section shall be considered as included in the contract prices paid for the various contract items of work and no additional compensation will be allowed.

L. SAFETY – The Contractor shall comply with all the applicable provisions of the United States Department of Labor Occupational Safety and Health Act (OSHA), State of California Division of Industrial Safety, Title 8, Safety Orders (Cal-OSHA) and any other applicable codes and regulations.

If, in the opinion of the Engineer, any operation or piece of equipment that is observed by the Engineer appears to be unsafe, the Engineer may immediately halt that portion of the work until the hazard is corrected to the satisfaction of the Engineer and no time extension or additional compensation shall be granted for the time lost due to said halting of the work.

M. CONSTRUCTION LIMITATIONS – The Contractor will be expected to conduct his operations in a manner which creates minimum damage to the natural vegetation and landscaping, paving and gravel areas. Care shall be exercised to avoid hazards that may cause injury to persons, animals or property either during working hours or after work hours, which will include dust control, backfilling trenches or placement of steel plates and temporary fencing as required. Equipment will be restricted to the immediate area of construction and trenches will be backfilled as soon as possible.

Receptacles for construction residue, including oil, cleaning fluids and litter, will be covered. Such residues will be disposed of in a proper manner.

Mufflers and/or baffles will be required on all construction equipment.

Construction activity within the existing right-of-way will be scheduled to minimize traffic inconvenience and safety hazards to motorists, pedestrians and cyclists.

N. CLEAN UP – Clean up shall be performed to prevent accidents to personnel, protect all work in place, and to effect completion of the project in an orderly manner. Excess debris shall be removed from the work area immediately so as not to clutter the existing facilities. Access to all other properties within the project area shall be unobstructed and passable between the hours of 3:00 p.m. and 6:00 a.m. weekdays, on weekends and holidays, and whenever work is not actively in progress where feasible.

O. EQUIPMENT – Standard construction equipment shall be used and shall be maintained in a safe and satisfactory condition at all times and in compliance with the latest provisions of the CAL/OSHA regulations. All trucks and other heavy equipment shall be well maintained and in proper working order and in compliance with all applicable laws and regulations.

P. WORKING HOURS REQUIREMENTS – Normal work week shall be Monday through Friday 7:00 am to 3:00 pm except for Big Ranch, and Buhman where work is permitted until 5: 00 pm; unless otherwise approved by the Engineer. No work shall be performed on a County Holiday.

Q. SCOPE – Contractor shall take into account all costs associated with the improvements, as shown on the plans and discussed in the technical specifications, when preparing the bid and shall take into account the working hour restrictions.

## 3. ORDER OF WORK

Order of work shall conform to these Special Provisions.

The Contractor shall prepare and submit a work plan and schedule in accordance with Section 8, "Prosecution and Progress," of the Standard Specifications and in a form provided by, or acceptable to, the Engineer and submit information describing the Contractor's proposed procedures and methods of operation.

No work may begin under the contract until the schedule and description of proposed procedures and methods of operation material have been approved by the Engineer. Time required for review and approval of these items shall not constitute a basis for time extension.

The Contractor shall verify the location of all existing utilities.

No work may begin under the contract until traffic control and construction signage is implemented.

The Contractor shall order work to minimize obstruction to adjacent property owner and inconvenience to the traveling public. The contractor will coordinate with the County and establish traffic control and implement work in a manner which provides the greatest possible access to the property owners adjacent to the work area.

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.

## 4. MOBILIZATION

Mobilization shall conform to these Special Provisions Section 14 and shall include but not limited to bonds, insurance, construction fencing, office trailers, temporary sheds, temporary utilities, temporary facilities, equipment and supplies, mobilization and demobilization, and all preparatory work prior to the commencement of productive work at the site required under this contract.

Full compensation for conforming to the provisions of this section shall be considered as included in the contract lump sum price. No additional compensation will be allowed therefore.

## 5. SUBMITTALS

Attention is directed to Section 5-1.23 "Submittals," of the Standard Specifications and these Special Provisions. The Contractor shall submit products or materials list, specifications and schedule at the pre-construction meeting. The Contractor shall submit for the Engineer's approval, six cut sheets for all of the products and materials to be used for all work on the project, or an electronic submittal. The cut sheets submitted by the contractor shall clearly describe how the proposed products or materials meet the specifications of the products and materials requested in the project specifications.

Submit at Contractor's expense, in six (6) sets, Schedule of Shop Drawing and Sample Submittals, Safety Plans, Progress Schedule, Product Data, Shop Drawings, Samples, Substitution Requests, Quality Control Plan, Operations and Maintenance Manuals, Warranties, and Project Record Documents, and all other submittals required by the Contract Documents.

Submit these submittals to Engineer, for review and approval in accordance with accepted schedule of Shop Drawings and Samples submittals. All Shop Drawing, Samples and product data submittals shall be submitted to and approved by the Engineer prior to ordering of material or commencement of work. The Engineer shall be given adequate time for review of submittals.

## 6. CONSTRUCTION AREA SIGNS

Construction area signs will be provided by the Contractor. Contractor shall coordinate with the Engineer on construction area signs and submit for Engineer's review and approval at the pre-construction meeting.

In addition to the stationary traffic control and construction area signs, at a minimum 8 Portable Changeable Message Signs (PCMS) shall be installed. One on each end of the construction area of each base bid road. Each bid alternate if accepted shall have 2 PCMS boards. The PCMS shall be installed two weeks prior to any lane restriction operation to warn the local traffic of upcoming construction activities.

Contractor to provide 8 "Measure T" signs for the base bid, and an additional 2 for each accepted bid alternates.

Full Compensation for Construction Area Signs will be included in the Contract Lump Sum paid for "Traffic Control" and no additional compensation will be allowed therefore.

## 7. MAINTAINING TRAFFIC

Maintaining traffic shall conform to the provisions of Section 7-1.03 "Public Convenience", Section 7-1.04 "Public Safety" and Section 12 "Temporary Traffic Control" of the Standard Specifications and these Special Provisions. The Contractor shall prepare a Temporary Traffic Control Plan in compliance with Standard Specifications and these Special Provisions and submit for Engineer's review and approval at the pre-construction meeting.

**The Contractor shall install all construction area signs and traffic controls prior to start of work. The PCMS shall be installed two weeks prior to any lane restriction operation.** Construction area signs shall be furnished, installed, maintained, and removed when no longer required by the County.

**Once grinding begins, all areas ground must be filled by the end of the working day. Traffic will not be allowed to drive on ground out areas until they have been filled. It is anticipated that a pilot car will be necessary to direct traffic when the work area spans driveways or intersections.**

One lane shall be kept open to public traffic at all times, except where full closures are expressly allowed by the County outlined in these specifications. Lane closure will require 72 hours' notice to the Engineer and 48 hours' notice to the property owners. Full closures require a 5 working day notice to the County and 72 hours to the affected properties. The full width of the usable roadway shall be available to public traffic when work is not actively in progress.

The Contractor shall coordinate and give adequate warning to the public at all times and shall provide such guards necessary to prevent accidents and avoid damage and injury.

Construction staging and traffic handling shall be done in a way that minimizes public inconvenience. The stage construction plans and narrative in these specifications can be used as an outline but does not relieve the burden on the contractor to fully develop staging and traffic handling plans for approval. The plans and specifications have been laid out with the following stages:

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 work, the Contractor shall immediately notify the Engineer and remedy the situation. Full Compensation for Maintaining Traffic will be included in the Contract Lump Sum paid for "Traffic Control" and no additional compensation will be allowed therefore.

## 8. TRAFFIC CONTROL SYSTEMS FOR LANE CLOSURES

Traffic Control will be provided by the Contractor. A traffic control system shall consist of closing traffic lanes in accordance the provisions of Section 12, "Temporary Traffic Control", of the Standard Specifications.

The Contractor shall provide such additional devices or take such measures as may be necessary to comply with Section 7-1.04, "Public Safety," of the Standard Specifications.

It is anticipated that a pilot car will be necessary to direct traffic when the work areas spans driveways

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 work, the Contractor shall immediately notify the Engineer and remedy the situation.

Full Compensation for Traffic Control Systems for Lane Closures will be included in the Contract Lump Sum paid for "Traffic Control" and no additional compensation will be allowed therefore.

## 9. STORM WATER POLLUTION PREVENTION MEASURES

Contractor shall comply with all Storm Water Pollution Prevention requirements as required by the Regional Water Quality Control Board and Napa County. The Contractor shall implement water quality control measures to effectively handle storm water run-off both during and after construction. The contractor shall utilize best management practices as outlined in the CA Storm Water Handbook for construction. This can be found at www.cabmphandbooks.com.

Full compensation for conforming to the provisions of this section shall be considered as included in the contract unit price paid for this item of work and paid as such.

## 10. PRESERVATION OF PROPERTY

Preservation of property shall conform to the provisions of Section 5-1.36, "Property and Facility Preservation," of the Standard Specifications and of these Special Provisions. Attention is directed to Section 10, "Mobilization".

The Contractor shall examine the site and have full knowledge of the conditions and difficulties to be met. No variations or allowance from the contract sum will be made because of lack of knowledge.

The Contractor shall provide the necessary safeguards, shall exercise caution against injury or defacement of existing improvements and plantings and shall be responsible for the damage resulting from operations. Repair or replacement of such damage shall be at no cost to the County.

Existing trees, shrubs, and other plants, that are injured or damaged by reason of the Contractor's operations, shall be replaced by the Contractor.

A **monument Search** is required for each monument shown on the plans in their approximate location. The monument search shall be performed by a licensed surveyor and either file a record of survey if the monument is found by a license surveyor, and if the monument is not found, a licensed surveyor shall sign a letter stating that the monument could not be found.

For each monument found a **monument recovery** shall be performed. The monument recovery shall include installing a new monument according to the details in the plan set and filing a post record survey with the county.

Other existing survey monuments encountered shall be protected, treated, and recorded by a licensed surveyor, per plan. Existing survey benchmarks are assumed to be set in existing wells, or outside the limits of paving and grinding, therefore, shall be undisturbed during construction, and no pre- or post- corner record required. Verification of benchmark location shall be by a licensed surveyor.

**Attachment "B"** is provided in these Special Provisions for existing information related to monuments and benchmarks.

No vehicles, construction equipment, materials or facilities shall be parked, stockpiled or located along the right of way or adjacent private property. No storage or dumping of oil, gasoline, chemicals or other substances potentially harmful to trees shall occur within the right of way or adjacent private property.

Full compensation for **"Monument Search"** shall include full compensation for furnishing all labor, materials, tools, equipment, changeable message signs, and incidentals and for performing all the work involved as shown on the plans and as specified in these Special Provisions, the Standard Specifications, and as directed by the Engineer and no additional compensation will be allowed.

Full compensation for **"Monument Recovery"** shall include full compensation for furnishing all labor, materials, tools, equipment, changeable message signs, and incidentals and for performing all the work involved as shown on the plans and as specified in these Special Provisions, the Standard Specifications, and as directed by the Engineer and no additional compensation will be allowed.

## 11. DUST CONTROL

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

During the performance of the work called for under these Specifications, or any operations appurtenant thereto, the Contractor shall furnish all labor, equipment and means required, and as often as necessary, to prevent his operations from producing dust in amounts damaging to property or causing a nuisance to persons living nearby or occupying buildings in the vicinity.

Full compensation for conforming to the requirements of this section shall be considered as included in the contract prices paid for the various contract items of work and no separate payment will be made for work performed or material used to control dust resulting from the Contractor's performance of the work, either inside or outside the right of way.

## 12. DISPOSAL OF SURPLUS MATERIAL

Disposal of materials shall conform to section "Miscellaneous Provisions" and "General Requirements" of these Special Provisions.

The Contractor shall load, haul from the site of work and properly dispose of all surplus excavated material including, but not limited to, rock, concrete, soil, and miscellaneous debris prior to the beginning of any earthwork, the Contractor shall make all arrangements for disposal of the surplus material at offsite locations and shall file with the owner the written consent of the owner of the property upon which disposal of surplus material is intended.

Full compensation for Disposal of Surplus Material shall be considered as included in the contract prices paid for the various contract items of work and no additional compensation will be allowed.

# **SPECIAL PROVISIONS – SECTION 'C'**

TECHNICAL SPECIFICATIONS

# 1 SUMMARY OF WORK

## PART I – GENERAL

### 1.01 DESCRIPTION

A component in one contract part applies as appearing in each. The Plans and Specifications are complementary, describe, and provide for complete work. The work to be done under the Contract shall comply with all requirements of the Plans and Specifications, the Standard Specifications, and the Standard Plans unless modified in writing by the Engineer. In case of conflict, the stricter or more conservative specification, as determined by the Engineer, shall apply.

The work to be done under the Contract, shall comply with:

A. The project plans (Plans) and Special Provisions (Specifications).

B. The State of California Department of Transportation (Caltrans) 2018 Revised Standard Specifications, last updated October 15, 2021.

C. Caltrans 2018 Standard Specifications (Standard Specifications).

D. Caltrans 2018 Standard Plans (Standard Plans).

E. Caltrans 2018 Revised Standard Plans, last updated October 15, 2021.

F. 2021 Napa County Road and Street Standards.

G. Caltrans 2014 CA Manual on Uniform Traffic Control Devices (CAMUTCD), revision 6.

H. Napa County Public Works Department (County) Standards, Specifications, and Details.

### 1.02 SUMMARY OF WORK

This project is to rehabilitate roads in Napa County with pavement spot replacements and then to cover the entire road with a chip seal.

General work at the project site will consist of:

A. Mobilization.

B. Staging Area Setup.

C. Construction Area Signs per CAMUTCD Standards and Special Provisions.

D. Temporary Traffic Control per CAMUTCD Standards and Special Provisions.

E. Clearing and Grubbing and Sweeping that can include and is not limited to tree trimming and removal of brush along the shoulder of the road.

F. Utility coordination.

G. Asphalt Grinding

H. Asphalt patching

I. Asphalt Overlays

J. Signing

K. Striping

L. Cape seal

M. Crack sealing topeka fines

N. Base work and auxiliary work shown on the Plans and as directed by the Engineer.

O. Final cleanup.

P. Project closeout.

The summary of work contained as part of the base bid for the 2022 Napa County seal projects, contain the following scope:

A. Asphalt digouts, ground three (3) inches and varying in width and length (as painted on the roads), for areas of pavement exhibiting major stress and damage within the County limits, approximately 9.0 miles of road.

B. Repairs will include a HMA levelling course (all digouts), paving fabric (areas labeled with an "F" on Old Sonoma and Buhman), and a HMA wearing course, and minor cracks, not included in the digout areas, shall be sealed with Topeka fines in accordance with Sections 37 "Bituminous Seals", 39 "Hot Mix Asphalt", and 96 "Geosynthetics".

C. Deer Park Bid alternate shall receive a 1.75" Asphalt grindout and 1.5" replacement or a 2.75" grind out and a 2.5" replacement with a paving fabric.

1.03 SEQUENCE AND SCHEDULE REQUIREMENTS

A. Construction is anticipated to begin in July or August 2022 and be completed by October 1st, 2022.

1.04 DEFINITIONS

A. County: Napa County Public Works Department

B. Engineer: Director of County Public Works or their designee

C. Scope of Work: The scope of work as depicted on the Plans with reference to the Standard Plans, the Standard Specifications, County Standards, and these Special Provisions.

1.05 USE OF PROJECT SITE

A. The Contractor shall limit the Contractor's operations to the grading limits shown on the Plans or as approved in writing by the Engineer.

B. Contractor shall submit the construction vehicle and equipment access route(s) to the project site to the Engineer for approval.

C. Staging Area

1. The Contractor shall submit a Construction Staging Plan to be approved by the Engineer.

2. The Contractor shall restore the site at the Contractor's own cost prior to demobilization. Failure to restore the site to the property owner's satisfaction will result in delay in release of final payments until the issue has been resolved.

3. Staging Area will be allowed within the public Right-of-Way, at a location approved by the Engineer.

D. See Section 10 "Mobilization" of these Special Provisions for further requirements for protection of existing property.

1.06 COORDINATION

A. Coordination of work shall conform to Section 9 "Coordination of Work" of the Special Provisions.

B. The Contractor is responsible for coordinating with utility agencies for utility standby and any utility relocation.

1.07 PERMITS OBTAINED BY THE COUNTY

A. No permit required.

1.08 PERMITS OBTAINED BY THE CONTRACTOR

A. All other permits as required for Contractor's Operation.

**PART 2 – PRODUCTS – NOT USED**

**PART 3 – EXECUTION – NOT USED**

**PART 4 – MEASUREMENT AND PAYMENT**

A. Full compensation for complying with the provisions of this Section shall be considered as included in the Contract price for the various bid items, and no separate payment will be made.

## 2 QUALITY CONTROL

**PART 1 – GENERAL**

1.01 DESCRIPTION

A. The Contractor is responsible for Quality Control.

B. The Contractor is responsible for the quality of the work including materials and workmanship performed by the subcontractors.

C. The Contractor will cooperate and coordinate with the County for Quality Assurance testing performed by the County.

D. The County performing Quality Assurance inspections and testing does not relieve the Contractor from the responsibility of performing all Quality Control testing required to deliver a quality product.

E. Quality Control includes all tasks required to deliver a coordinated and complete project that is in compliance with the intent of the Contract Documents.

**PART 2 – PRODUCTS - NOT USED**

**PART 3 – EXECUTION**

3.01 SITE INVESTIGATION AND CONTROL

A. The Contractor shall verify all dimensions in the field and shall check all field conditions continuously during construction. The Contractor shall be solely responsible for any inaccuracies built into the Work. The Contractor shall inspect related and appurtenant work and shall report in writing to the Engineer, any conditions which will prevent proper completion of the Work. Any required removal, repair, or replacement caused by unsuitable conditions shall be done by the Contractor at its sole cost and expense.

3.02 INSPECTION OF WORK

A. The Work shall be conducted under the general observation of the Engineer and shall be subject to inspection by the County and other agencies having jurisdiction over the project to assure strict compliance with the requirements of the Contract Documents.

B. The authorized representative of the Engineer on the project site shall be acting directly and through various inspectors at the site. The presence of the inspectors, however, shall not relieve the Contractor of his responsibility for the proper execution of the Work in accordance with all requirements of the contract documents. Compliance is a duty of the Contractor and shall not be avoided by any act or omission on the part of an inspector.

C. All materials and articles furnished by the Contractor shall be subject to inspection. No material or articles shall be used in the Work until it has been inspected and accepted by the Engineer or by the County.

D. Source Inspection: Some material shall be subject to inspection by the Engineer or his authorized representative at the place of production.

E. The presence of the Engineer at the place of production shall not relieve the Contractor of the responsibility for furnishing products, materials, and equipment that comply with all requirements of the contract documents.

3.03 SAMPLING AND TESTING

A. Unless otherwise specified in these Special Provisions all sampling and testing shall be in accordance with the methods prescribed in the current standards of the ASTM or other specified published standards, as applicable to the class and nature of the article or materials considered. The County reserves the right to use any generally accepted system of sampling and testing which, in the opinion of the Engineer, will assure the County that the quality of the workmanship is in full accord with the contract documents.

B. Any waiver by the County of any specific testing or other quality assurance measures, whether or not such waiver is accompanied by a guarantee of substantial performance as a relief from the specified testing or other quality assurance requirements as originally specified, and whether or not such guarantee is accompanied by a "performance bond" to assure execution of any necessary corrective or remedial Work, shall not be construed as a waiver of any prescriptive or performance requirements of the contract documents. "Performance bond" as used in this section is a separate bond in addition to the Contract Performance Bond required in the General Conditions.

C. Notwithstanding the existence of waiver, and in addition to any testing and inspection performed by any other inspector on behalf of the County or any other public agency having jurisdictions over the project, the Engineer shall have the right to make independent investigations and tests, and failure of any portion of the Work to meet any of the requirements of the contract documents shall be reasonable cause for the Engineer to require the removal or correction and reconstruction of any such work in accordance with the General Conditions.

3.04 TIME OF INSPECTIONS AND TESTS

A. Samples and test specimens required under the contract documents shall be furnished by the Contractor and prepared for testing in time for the completion of the necessary tests and analyses before the subject materials or articles are to be used.

B. The County will perform field compaction testing. The Contractor shall furnish all required test specimens at its own expense. Except as otherwise provided in the contract documents, performance of the required initial test will be by the County and all costs will be borne by the County except that the cost of any test (retesting) after the initial test shall be borne by the Contractor. The County performing Quality Assurance testing does not relieve the Contractor from his responsibility of performing all required Quality Control testing to deliver a quality project.

C. The Contractor at the Contractor's own expense shall perform field testing for utilities that may be affected by the Work. The Contractor shall coordinate and schedule witnessing of field testing with the County and any other agency having jurisdiction over the project. The Contractor shall notify the Engineer no less than 48 hours in advance of beginning field testing.

D. Whenever the Contractor is ready to backfill, bury, cast in concrete, hide, or otherwise cover or make inaccessible any work under the Contract, the Contractor shall notify the Engineer no less than 48 hours in advance of beginning any work of backfilling, burying, casting in concrete, hiding, covering, or making inaccessible any portion of the Work to be inspected so that required inspections can be performed.

E. Failure by the Contractor to notify the Engineer at least 48 hours in advance of any inspection or field testing shall be reasonable cause for the Engineer to require sufficient delay in the Contractor's schedule to allow time for such inspections and any remedial or corrective work required. All costs of such delays, including its impact or effect upon the Work, shall be borne by the Contractor.

3.05 DEFECTIVE AND NONCOMPLIANT WORK

A. Attention is directed to Section 5-1.30 Noncompliant and Unauthorized work and Section 5-1.39 Damage Repair and Restoration of the Standard Specifications.

B. Per Section 5-1.30 Noncompliant and Unauthorized work of the Standard Specifications, the contractor shall correct or remove and replace work that does not comply with the Contract at contractor's cost. County will reduce payment for non-compliant work left in place until the work has been corrected. If the contractor fails to comply promptly with an order under section 5-1.30, the County may correct, remove, or replace noncompliant or unauthorized work. The County will deduct the cost of this work from the contract.

C. Per Section 5-1.39 Damage Repair and Restoration of the Standard Specifications, before Contract acceptance, the contractor shall restore damaged work to the same state of completion as before the damage. The County does not adjust payment for repair or restoration that the Engineer determines was caused by the contractor's failure to construct the work under the Contract or protect the work.

D. The contractor shall submit a repair or restoration work plan and scheduled for the approval of the Engineer prior to proceeding with work. The submittal must comply with the requirements in Section 4 Submittal Procedures of this Special Provisions.

**PART 4 - MEASUREMENT AND PAYMENT**

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

# 3 PROJECT MEETINGS

## PART 1 - GENERAL

1.01 SUMMARY

A. This section includes:

1. Contractor participation in a preconstruction conference.
2. Administration of progress meetings.

1.02 PRECONSTRUCTION CONFERENCES

A. The Engineer will administer a preconstruction conference for the purpose of executing County-Contractor agreements and will provide clarification of County and Contractor responsibilities in the use of the Work site and for review of administrative procedures, contract documents, standards, correspondence, and submittal requirements.

1. Personnel present at this meeting are the Engineer, inspector, design consultants, environmental consultant, quality assurance team, archeologist, County representatives, and representatives of other agencies, the Contractor, job superintendent, and the major subcontractors and their foremen or superintendents who will be working on the site.
2. The Contractor shall be prepared to discuss timing, procedures for smooth job progress, items requiring clarification, distribution of documents, and correspondence with the Engineer and other County representatives.

1.03 PROGRESS MEETINGS

A. The Engineer shall schedule and administer project meetings throughout progress of the Work at weekly intervals and other meetings as needed throughout construction.

1. The Engineer shall prepare an agenda with copies for participants and record minutes, and distribute copies within three (3) days to the Contractor, and to the project team. Those affected by decisions made at the meetings may also be notified.
2. Attendance: Contractor's job superintendent, major subcontractors and suppliers, design consultants, environmental consultant, quality assurance team, archeologist, other representatives of the County and other agencies as appropriate to address topics for each meeting.
3. Suggested Agenda: Review of Work progress, status of progress schedule and adjustments, material order and delivery schedules, submittals, maintenance of quality standards, pending changes and substitutions, and other items affecting progress of the Work.

B. The Engineer shall prepare and distribute meeting minutes to the project team and other attendees as requested following each meeting after the minutes have been reviewed and approved by the Engineer. Meeting minutes shall include a running list of action items for the Contractor. The contents of minutes do not constitute a part of the contract documents. Contract requirements can only be amended by change order.

1.04 ENVIRONMENTAL EDUCATION MEETINGS

A. Each time workers and/or subcontractors come onto the jobsite for the first time the Contractor shall convene a meeting prior to them commencing any work.

B. Required attendance includes jobsite superintendents, foremen, and workers.

C. Discussions shall include wildlife identification and permit requirements for environmental protection.

**PART 2 – PRODUCTS - NOT USED**

**PART 3 – EXECUTION - NOT USED**

**PART 4 - MEASUREMENT AND PAYMENT**

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

# 4 SUBMITTAL PROCEDURES

## PART 1 - GENERAL

1.01 SUMMARY

A. This section includes: Administrative and procedural requirements for submitting shop drawings, product data, samples, and other submittals.

1.02 DEFINITIONS

A. Action Submittals: Written and graphic information that requires the Engineer's responsive action.

B. Informational Submittals: Written information that does not require the Engineer's responsive action. Submittals may be rejected for not complying with requirements.

1.03 SUBMITTAL PROCEDURES

A. General:

1. The minimum required submittals are included in Attachment A.
2. The Contractor shall submit six (6) sets of each required submittal.
3. Electronic copies of CAD Drawings of the contract drawings will be provided by the Engineer for the Contractor's use in preparing submittals upon the Contractor's written request.

B. Coordination: The Contractor shall coordinate preparation and processing of submittals with the performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
3. The Engineer reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
4. The Contractor shall be responsible for the timely submittal of all project submittals including project submittals for work to be done by subcontractors. The Contractor shall not be entitled to project delays resulting from late, inaccurate, or incomplete submittals.

C. Submittals Schedule: The Contractor shall comply with the construction schedule for time requirements for scheduled performance of related construction activities.

D. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows: Time for review shall commence on the Engineer's receipt of the submittal. No extension of the contract time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

1. Initial Review: Allow five (5) days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. The Engineer will advise the Contractor when a submittal being processed must be delayed for coordination.
2. Intermediate Review: If an intermediate submittal is necessary, process it in same manner as an initial submittal.
3. Resubmittal Review: Allow five (5) days for review of each resubmittal.

E. Identification: Affix a permanent label or title block on each submittal for identification.

1. Indicate the name of the firm or the entity that prepared each submittal on label or title block.
2. Provide a space approximately six (6) inches by eight (8) inches on the label or adjacent to the title block to record the Contractor's review and approval markings and actions taken by the Engineer.
3. Include the following information on label for processing and recording action taken:
    a. Project name.
    b. Date.
    c. Name and address of the Engineer.
    d. Name and address of the Contractor.
    e. Name and address of subcontractor.
    f. Name and address of supplier.
    g. Name of manufacturer.
    h. Submittal number or other unique identifier, including revision identifier. Submittal number shall use Standard Specification section number followed by a decimal point and then a sequential number (e.g., 06100.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 06100.01.A).
    i. Number and title of appropriate Standard Specification section.
    j. Drawing number and detail references, as appropriate.
    k. Location(s) where product is to be installed, as appropriate.
    l. Other necessary identification.

F. Deviations: Highlight, encircle, or otherwise specifically identify deviations from the contract documents on submittals.

G. Additional Copies: Unless additional copies are required for final submittal, and unless the Engineer observes noncompliance with provisions in the contract documents, initial submittal may serve as final submittal.

H. Transmittal: Package each submittal individually and appropriately for transmittal and handling and submit directly to the Engineer. Transmit each submittal using a transmittal form.

1. Transmittal Form: Use standardized form approved by the Engineer.
2. On an attached separate sheet, prepared on the Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by the Engineer on previous submittals, and deviations from requirements in the contract documents, including minor variations and limitations. Include the same label information as is affixed to the related submittal.

I. Resubmittals: Make resubmittals in the same form and number of copies as the initial submittal.

1. Note date and content of previous submittal.
2. Note date and content of revision in label or title block and clearly indicate extent of revision.
3. Resubmit submittals until they are marked "Approved", or "Approved as Noted".

J. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, and installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

K. Use for Construction: Use only final submittals with mark indicating approval by the Engineer.

**PART 2 - PRODUCTS**

2.01 ACTION SUBMITTALS

A. General: Prepare and submit action submittals required by individual Standard Specification sections.

B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:
    a. Manufacturer's written recommendations.
    b. Manufacturer's product specifications.
    c. Manufacturer's installation instructions.
    d. Standard color charts.
    e. Manufacturer's catalog cuts.
    f. Mill reports.
    g. Standard product operation and maintenance manuals.
    h. Compliance with specified referenced standards.

i. Testing by recognized testing agency.

j. Application of testing agency labels and seals.

k. Notation of coordination requirements.

4. Submit product data before or concurrent with samples.

5. Number of Copies: Submit six (6) copies of product data, unless otherwise indicated. The Engineer will return two (2) copies to the Contractor. Mark up and retain one (1) returned copy as a project record document.

C. Shop Drawings: Prepare project-specific information, drawn accurately to scale.

1. Preparation: Fully illustrate requirements in the contract documents. Include the following information, as applicable:

a. Dimensions.

b. Identification of products.

c. Fabrication and installation drawings.

d. Roughing-in and setting diagrams.

e. Schedules.

f. Design calculations.

g. Compliance with specified standards.

h. Notation of coordination requirements.

i. Notation of dimensions established by field measurement.

j. Seal and signature of professional engineer if specified.

2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit shop drawings on sheets at least 8-1/2 inches by 11 inches but no larger than 30 inches by 40 inches.

3. Number of Copies: Submit six (6) opaque (bond) copies of each submittal unless otherwise indicated. The Engineer will return two (2) copies to the Contractor. Mark up and retain one (1) returned copy as a project record document.

D. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:

1. Name, address, and telephone number of entity performing subcontract or supplying products.

2. Number and title of related Standard Specification section(s) covered by subcontract.

3. Drawing number and detail references, as appropriate, covered by subcontract.

4. Number of Copies: Submit three (3) copies of subcontractor list, unless otherwise indicated. The Engineer will return two (2) copies to the Contractor. Mark up and retain one (1) returned copy as a project record document.

2.02 INFORMATIONAL SUBMITTALS

A. General: Prepare and submit informational submittals required by Standard Specification sections.

1. Number of Copies: Submit three (3) copies of each submittal unless otherwise indicated. The Engineer will not return the copies.

2. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.

3. Test and Inspection Reports: Comply with requirements specified in Standard Specification Section 6 – Control of Materials.

B. Contractor's Construction Schedule: Comply with requirements specified in the General Conditions.

C. Qualification Data: Prepare written information that demonstrates the capabilities and the experience of firms and persons. Include lists of completed projects with project names and addresses, names and addresses of engineers and owners, and other information specified.

D. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the contract documents. Submit record of Welding Procedure Specification (WPS) and Procedure Qualification Record (PQR) on AWS forms. Include names of firms and personnel certified.

E. Product and Material Certificates: Prepare written statements on manufacturer's letterhead certifying that product or material complies with requirements in the contract documents.

F. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the contract documents.

G. Schedule of values: Prepare a schedule of values breakdown for all lump sum items of work and submit it at the pre-construction meeting.

**PART 3 - EXECUTION**

3.01 CONTRACTOR'S REVIEW

A. Review each submittal and check for coordination with other Work of the contract and for compliance with the contract documents. Note corrections and field dimensions. Mark with approval stamp before submitting to the Engineer.

1. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of the Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the contract documents.

3.02 ENGINEER'S ACTION

A. General: The Engineer will not review submittals that do not bear the Contractor's approval stamp and will return them without action.

B. Action Submittals: The Engineer will review each submittal, make marks to indicate corrections or modifications required, and return it. The Engineer will stamp each submittal with an action stamp and will mark the stamp appropriately to indicate action taken.

C. Informational Submittals: The Engineer will review each submittal and will return it if it does not comply with requirements. If the submittal does meet the requirements the submittal will not be returned. The Engineer will forward each submittal to an appropriate party.

D. Partial submittals are not acceptable, will be considered nonresponsive, and will be returned without review.

E. Submittals not required by the contract documents may not be reviewed and may be discarded.

**PART 4 - MEASUREMENT AND PAYMENT**

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

# 5 MEASUREMENT AND PAYMENT

## PART 1 – MEASUREMENT AND PAYMENT

1.01 WORK INCLUDED

A. This specification section describes contract requirements for the measurement and payment for work performed under this Contract.

B. Payment for each Contract bid item includes full compensation for all labor, equipment, tools, supplies and incidentals necessary to complete the work.

1.02 MEASUREMENT AND PAYMENT

A. Lump Sum Bid Items:

1. Payment items for the work of this Contract for which contract lump sum payments will be made are listed in the Bid Schedule and described below. All costs for items of work, which are not specifically mentioned in a particular lump sum payment item, shall be included in the listed lump sum item most closely associated with the work involved. The lump sum price and payment made for each item listed shall constitute full compensation for furnishing all labor, materials, and equipment, and performing any associated Contractor quality control, environmental protection, meeting safety requirements, tests and reports, and for performing all work required for which separate payment is not otherwise provided.

2. Before the Contractor's first progress pay request on this project, the Contractor shall provide the Engineer with a Schedule of Values (Lump Sum Breakdown) for each Lump Sum bid item shown on Bid Schedule. The Schedule of Values shall be a well-balanced detailed breakdown of work items consisting of estimated quantities, unit prices, material, and equipment costs the Contractor allocates for the work covered under each lump sum bid item.

3. Such Schedule of Values shall not be unbalanced and will be subject to approval by the Engineer and will be used to compute progress payments for lump sum bid item work. The Contractor shall provide proof of costs to justify the submitted Schedule of Values if requested by the Engineer.

4. Where Contract change orders are issued increasing or decreasing the scope of the work and cost the Contractor shall prepare revisions to the Schedule of Values, where necessary, for approval by the Engineer. The revised Schedule of Values will be used for subsequent progress payments.

B. Unit Price Bid Items:

1. Items of work listed in the Bid Schedule that are Unit Price bid items shall be measured for payment as set forth under the description of each relative bid item.

2. All measurements for payment purposes shall be made by the Engineer unless noted otherwise by the Engineer.

C. Waiver Certificate

1. CALIFORNIA LIEN WAIVER AND RELEASE UPON PROGRESS PAYMENT
    a. The Contractor shall submit a Conditional Waiver and Release on Progress Payment form with each progress payment request.
2. CALIFORNIA LIEN WAIVER AND RELEASE UPON FINAL PAYMENT
    a. The Contractor shall submit a Conditional Waiver and Release on Final Payment form with final payment request.

1.03 DESCRIPTION OF BID ITEMS

The Bid Schedule bid items are presented to indicate major categories of the work for purposes of comparative bid analysis, payment, breakdown for monthly progress payments, and final payment to the Contractor under the Contract. The Bid Schedule is not intended to be exclusive descriptions of work categories and the Contractor shall determine and include in its pricing all materials, labor, equipment, and operations necessary to complete each bid item of work, as shown and specified, and all costs of compliance with all applicable regulations of public agencies having jurisdiction, including, but not limited to, the health and safety requirements of the California Division of Industrial safety and the Occupational Safety and Health Administration of the U.S. Department of Labor (OSHA).

**PART 2 – PRODUCTS - NOT USED**

**PART 3 – EXECUTION - NOT USED**

**PART 4 - MEASUREMENT AND PAYMENT**

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

# 6 CONTROL OF MATERIALS

## PART 1 - GENERAL

1.01 SUMMARY

A. The section includes: Requirements for installation, maintenance, and removal of temporary utilities, facilities, controls, construction signs, traffic control, and construction aids during construction.

1.02 TEMPORARY UTILITIES

A. General: The Contractor shall provide all necessary temporary utilities required during construction, including all necessary temporary meters, equipment, wiring, piping, fixtures, and connections. The Contractor shall remove the same when they are no longer necessary and at the completion of the Project.

1.03 CONSTRUCTION FACILITIES

A. Contractor's Field Office: At the Contractor's option, the Contractor may provide and maintain a temporary job office on the site for the Contractor's use. The location of the office shall not interfere with the Work nor with traffic on public roadways

B. Temporary Storage for Tools, Materials, and Equipment: It is the Contractor's responsibility to provide temporary storage sheds or other enclosed temporary structures as required or as deemed necessary by the Contractor to protect material and equipment stored on site. The Contractor shall remove the same when they are no longer necessary and at the completion of Work.

C. Temporary Sanitary Facilities: It is the Contractor's responsibility to provide and maintain adequate toilets, washing facilities, and drinking facilities for workers. Such items shall comply with all governing health and sanitation requirements. The Contractor shall remove the same at the completion of the Work.

1.04 TRAFFIC CONTROL, TEMPORARY BARRIERS AND ENCLOSURES

A. General Protection: Provide all temporary barricades, fences, caution signs, and warning lights as required for the safety of persons. Operate warning lights during hours from dusk to dawn each day. Take whatever care is necessary to avoid damage to adjacent buildings and property, public rights-of-way, and facilities or utilities to remain, whether on the Work site or adjacent to it, and be liable for any damage thereto or interruption of service due to Contractor's operations.

B. Temporary Fences and Barricades: Provide and maintain all temporary site fences, tree protection fencing, and barricades as required for the Work, and remove the same upon the completion of the Work.

C. Prior to start of work the Contractor shall submit Traffic Control Plans for all project phases for the Engineer's review and approval. Plans shall include all necessary measures to control public traffic and construction traffic entering, exiting, and traveling adjacent to the Work site.

D. No road closure is allowed at any time.

E. Contractor shall keep access to all private properties at all time.

1.05 SITE MAINTENANCE

A. Cleaning During Construction:

1. Control accumulation of waste materials and rubbish; periodically dispose of legally off-site.

2. Clean interior areas prior to start of finish work, maintain areas free of dust and other contaminants during finishing operations.

1.06 PROJECT IDENTIFICATION

A. Project Signs: Provide a project job sign, maximum 30 square feet in size, of wood painted with lettering by a professional sign painter. The content of the sign will be as determined by the County. Obtain approval for location of the sign from the County before installing. Remove the sign on completion of the Work and dispose of legally off the site. Allow no other signs to be displayed.

1.07 REMOVAL

A. Remove temporary facilities, fencing, materials, equipment, services, and construction prior to Substantial Completion inspection.

B. Clean and repair damage caused by installation or use of temporary facilities. Remove temporary underground lines and installations; grade site as indicated on the Plans. Restore existing facilities used during construction to the original condition when first installed unless specified otherwise by the Engineer.

**PART 2 - PRODUCTS**

2.01 MATERIALS

A. Temporary materials and equipment may be new or used, but shall be adequate in capacity for the required usage, shall not create unsafe conditions, and shall not violate requirements of applicable codes and standards.

B. Hazardous or Flammable Chemicals: Use and store hazardous or flammable chemical liquids or gases brought into the Project site in acceptable containers conforming to requirements of OSHA. Use such materials in a manner that will prevent their accidental release into other areas. Do not discard such materials on the jobsite. Remove empty containers from the Work sites immediately and dispose of in the proper manner.

**PART 3 – EXECUTION - NOT USED**

**PART 4 - MEASUREMENT AND PAYMENT**

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

# 7 CONSTRUCTION SURVEYING

## PART I - GENERAL

### 1.01 DESCRIPTION

A. This section describes the lines, grades, and survey control to be established and maintained by the Contractor, and also describes the survey requirements to be performed by the Contractor.

B. The Contractor shall furnish all labor, equipment, and materials necessary to provide construction surveying and staking for the project as shown on the contract documents.

C. All surveying shall be done by, or under the direction of, a land surveyor licensed in the State of California.

D. It is the Contractor's responsibility to verify the accuracy of all survey controls and stakes set in the field. Provide immediate notification of apparent errors in the initial staking or in the furnished data.

E. Preserve all initial reference and control points. After beginning construction replace all destroyed or disturbed initial reference or control points necessary to the work.

F. Before surveying or staking discuss and coordinate with the Engineer.

G. Include staking activities in the construction schedule submitted. Include the dates and sequence of each staking activity.

H. The County, at its discretion, may perform random survey verification for the project. The Contractor shall give the County 48 hours notice prior to setting controls and stakes in the field. Once controls and stakes are set in the field the Contractor shall give the County 48 hours notice to perform survey verification.

I. The County's survey verification of the project shall not relieve the Contractor of the responsibility for the proper execution of the Work in accordance with all requirements of the contract documents. Compliance is a duty of the Contractor and shall not be avoided by acts or omissions by the County.

### 1.02 STAKING OUT OF WORK

A. Lines and Grades: The Contractor is responsible for providing all staking and surveying needed to achieve all lines, grades and dimensions shown on Plans. Stakes and markers shall be provided as necessary to control the work and assure construction is in conformance with the contract documents and as otherwise directed by the Engineer. The Contractor shall anticipate the site conditions (e.g. wetlands, vandalism etc.) when developing its approach to maintaining construction staking.

B. Equipment and Personnel: The Contractor's instruments and other survey equipment shall be accurate, suitable for the surveys required in accordance with recognized professional standards, and in proper condition and adjustment at all times. Surveys shall be performed under the direct supervision of a land surveyor licensed in the State of California.

C. The Contractor shall use established survey benchmark data as shown on the Plans to layout the Work.

D. Use by Owner: The County may use line and grade points and markers established by the Contractor. The Contractor's surveys are a part of the Work and may be checked by the County. The Contractor shall be responsible for any lines, grades, or measurements which do not comply with specified or proper tolerances, or which are otherwise defective, and for any resultant defects in the work. The Contractor will be required to conduct resurveys or check surveys to correct errors indicated by review of the field notebooks.

E. Surveys for Layout and Performance: The Contractor shall perform all surveys for layout and performance of the work, shall reduce the field notes, and make all calculations and drawings necessary to carry out such work.

F. When the specifications or the Engineer requires Bid Schedule items of work to be measured by surveying methods, the Contractor shall perform the surveys. All such surveys, including control surveys for establishing the measurement reference lines, shall be performed in the presence of the County. The County may independently reduce the field notes and calculate quantities to verify the Contractor's payment request. The County reserves the right to conduct an independent survey to determine quantities. The cost of the independent survey will be at the County's expense.

1.03 GENERAL SURVEY REQUIREMENTS

A. The following requirements apply to surveys performed by the Contractor.

1. Licensed Surveyor: All surveys, computations and supporting drawings shall be prepared at the Contractor's expense by a Licensed Surveyor in the State of California.

2. For survey transects, elevations shall be taken at breaks in slope and at intervals not greater than ten (10) feet. Elevations shall extend at least ten (10) feet beyond the limits of earthwork (excavation and fill). Surveyed grade points shall be converted to elevations relative to NAVD 88 and shall be provided to the nearest one-tenth (1/10) of a foot. Survey transects shall be taken at locations that are representative of existing grade.

3. Survey sections shall be taken at the minimum intervals as stated below. The interval between sections may be reduced if, through surveys, earthwork is consistently found to be out of compliance with design requirements.

4. Subsequent surveys shall re-occupy the same lines so the surveys and quantities can be compared.

**PART 2 – PRODUCTS - NOT USED**

**PART 3 – EXECUTION**

3.01 CONSTRUCTION SURVEYING AND STAKING REQUIREMENTS

A. Perform all survey, staking, recording of data, and calculations as necessary to construct the project from the initial layout to final completion. Reset stakes as many times as necessary to construct the work.

B. Before surveying or staking, discuss and coordinate the following with the Engineer:

1. Surveying and staking methods.
2. Stake marking.
3. Grade control for courses of material.
4. Referencing.
5. Structure control.
6. Any other procedures and controls necessary for the work.

C. Perform all surveying, staking, and recording of data essential for establishing the layout and control of the following, as applicable:

1. Roadway alignment, profile and superelevations.
2. Curb and dike.
3. Guardrail.
4. Signs, delineators, object markers, and pavement markings.
5. Limits of grading and excavations.
6. Grade beams and piles.
7. Slope.
8. Storm drain culverts, miscellaneous drainage facilities and ditches.
9. Other features and limits of work to control and complete the Work.

D. Control work for construction staking: The Construction Surveyor shall set horizontal and vertical control points to complete the construction staking. Prior to any construction staking, existing survey monuments and pipes shown on the plans shall be surveyed to verify the distances and basis of bearings shown.

1. Survey and establish controls within the tolerances shown in Table 1 in these Special Provisions.
2. Prepare field notes in an approved format. Furnish all survey notes at least weekly. All field notes and supporting documentation become the property of the County upon completion of the work.
3. Start work only after staking for the affected work is accepted.
4. The construction survey and staking work may be spot-checked for accuracy, and unacceptable portions of work may be rejected. Resurvey rejected work and correct work that is not within the tolerances specified in Table 1.

5. Acceptance of the construction staking does not relieve the Contractor of responsibility for correcting errors discovered during the work and for bearing all additional costs associated with the error.

6. Remove and dispose of all flagging, lath, stakes, and other staking material after the project is complete.

E. Control points. Relocate initial horizontal and vertical control points in conflict with construction to areas that will not be disturbed by construction operations. Furnish the coordinates and elevations for the relocated points before the initial points are disturbed.

F. Clearing and Grubbing Stakes. Clearing and grubbing stakes will be set prior to the beginning of construction work. The boundary of the area(s) to be cleared and grubbed shall be staked or flagged at a maximum interval of 200 feet, closer if needed, to clearly mark the limits of work. Set clearing and grubbing limits on both sides of centerline at roadway cross-section locations.

G. Rough Grade Stakes. Cuts and fills will be given to the nearest tenth (0.1) of a foot. Horizontal location will be given to the nearest tenth (0.10) of a foot.

1. Slope Stakes. Slope stakes will be set at five (5) foot offsets to the toe-of-slope, at angle points, and at midpoints when the horizontal distance exceeds sixty (60) feet. The cut or fill, and the horizontal distance to hinge point, will be given for each slope.

2. Daylight Stakes. Where design grade intersects natural grade and does not constitute a slope, a daylight stake will be set at approximately fifty (50) foot intervals.

3. Grade beams. Stakes for grade beams will be set five (5) feet from the face of wall, on approximately twenty-five (25) foot intervals unless otherwise specified by the Engineer. The stakes will be marked with an offset and a cut or fill to the design top of wall grade.

4. Curbs. Rough grade stakes for curbs will be set three (3) feet from the face of curb; ten (10) feet in areas with sidewalk, on approximately fifty (50) foot intervals on straight sections, twenty-five (25) foot intervals on curves and at grade breaks. Stakes will be marked with a cut or fill to the top of curb.

H. Finish Grade Stakes. Cuts or fills will be given to the nearest hundredth (0.01) of a foot. Set grade finishing stakes, for grade elevations and horizontal alignment, on centerline and on each shoulder at roadway cross-section locations. Set stakes at the top of subgrade and the top of each aggregate course. Set stakes in all ditches to be paved. The maximum longitudinal spacing between stakes is twenty-five (25) feet when the centerline curve radius is less than or equal to five hundred (500) feet. When the centerline curve radius is greater than five hundred (500) feet, the maximum longitudinal spacing between stakes is fifty (50) feet. The maximum transverse spacing between stakes is twenty (20) feet. Use brushes or guard stakes at each stake.

1. Roadway cross-sections. Take roadway cross-sections normal to centerline. When the centerline curve radius is less than or equal to 500 feet, take cross-sections at a maximum centerline spacing of 25 feet. When the centerline curve radius is greater than 500 feet, take cross-sections at a maximum centerline spacing of 50 feet. Take additional cross-sections at significant breaks in topography and at changes in the typical section. Along

each cross-section, measure and record points at breaks in topography, but no further apart than 20 feet. Measure and record points to at least the anticipated slope stake and reference locations. Reduce all cross-section distances to horizontal distances from centerline.

2. Centerline reestablishment. Reestablish centerline from instrument control points. The maximum spacing between centerline points is 25 feet when the centerline curve radius is less than or equal to 500 feet. When the centerline curve radius is greater than 500 feet, the maximum distance between centerline points is 50 feet.

3. Grade beams. Survey and record profile measurements along the face of the proposed wall and five (5) feet in front of the wall face. Every 25 feet along the length of the wall and at all major breaks in terrain take cross-sections within the limits shown on the plans. For each cross-section, measure and record points every 25 feet and at all major breaks in terrain. Set adequate references and horizontal and vertical control points.

4. Culverts. Stake culverts to fit field conditions. The location of culverts may differ from the Plans. Perform the following:

    a. Survey and record the ground profile along the culvert centerline.

    b. Determine the slope catch points at the inlet and outlet.

    c. Set reference points and record information necessary to determine culvert length and end treatments.

    d. Plot-to-scale the profile along the culvert centerline. Show the natural ground, the flow line, the roadway section, and the culvert including end treatments and other appurtenances. Show elevations, grade, culvert length, and degree of elbow.

    e. Submit the plotted field-design cross-section for approval of final culvert length and alignment.

    f. When the field design has been approved, set drainage structure survey stakes, reference stakes, and stake inlet and outlet ditches to make the structure functional.

    g. Stake or grade ditches to make the culvert functional.

5. Slope stakes and references. Set slope stakes and references on both sides of centerline at the cross-section locations. Establish slope stakes in the field as the actual point of intersection of the design roadway slope with the natural ground line. Set slope stake references outside the clearing limits. Include all reference point and slope stake information on the reference stakes. When initial references are provided, slope stakes may be set from these points with verification of the slope stake location with field measurements. Re-catch slope stakes on any section that does not match the staking report within the tolerances established in Table 1. Take roadway cross section data between centerline and the new slope stake location. Set additional references even when initial references are provided.

6. Permanent monuments and markers. Perform all survey and staking necessary to establish permanent monuments and markers.

I. Miscellaneous Items.

1. Curb Slashes. Curb cut slashes will be set on the top-of-curb, on the prolongation of the side property lines.

J. Construction Survey and Staking Tolerances:

**TABLE 1**

| Staking Phase | Horizontal | Vertical |
|---|---|---|
| Existing Government network control points | ±0.06 feet | ±0.035 feet × M (2) |
| Local supplemental control points set from existing Government network points | ±0.03 feet | ±0.01 feet × N (3) |
| Centerline points (4) — (PC), (PT), (POT), and (POC) including references | ±0.03 feet | ±0.03 feet |
| Other centerline points | ±0.16 feet | ±0.16 feet |
| Cross-section points and slope stakes (5) | ±0.16 feet | ±0.16 feet |
| Slope stake references (5) | ±0.16 feet | ±0.16 feet |
| Culverts, ditches, and minor drainage structures | ±0.16 feet | ±0.06 feet |
| Grade beams and curb and gutter | ±0.06 feet | ±0.03 feet |
| Bridge substructures | ±0.03 feet (6) | ±0.03 feet |
| Bridge superstructures | ±0.03 feet (6) | ±0.03 feet |
| Clearing and grubbing limits | ±2.00 feet | — |
| Roadway subgrade finish stakes (7) | ±0.16 feet | ±0.03 feet |
| Roadway finish grade stakes (7) | ±0.16 feet | ±0.03 feet |

1. At 95% confidence level. Tolerances are relative to existing Government network control points.
2. M is the distance in miles.
3. N is the number of instrument setups.
4. Centerline points: PC - Point of Curve, PT - Point of Tangent, POT - Point on Tangent, POC - Point on Curve.
5. Take the cross-sections normal to the centerline ±1 degree.
6. Bridge control is established as a local network and the tolerances are relative to that network.
7. Includes paved ditches.

**PART 4 - MEASUREMENT AND PAYMENT**

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

# 8 CLOSEOUT PROCEDURES

## PART 1 - GENERAL

1.01 SUMMARY

A. This section includes: Closeout procedures, final submittals, final cleaning and adjusting, project record documents, submittal of operation and maintenance data, and warranties and bonds.

1.02 SUBSTANTIAL COMPLETION

A. Substantial Completion means completion of all work in the contract documents, except maintenance of erosion control best management practices (BMPs) throughout the maintenance period.

B. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.

1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
2. Advise County of pending insurance changeover requirements.
3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
4. Obtain and submit releases permitting the County unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
5. Prepare and submit Project Record Documents, damage or settlement surveys, property surveys, and similar final record information.
6. Terminate and remove temporary facilities from Work site, along with mockups, construction tools, and similar elements.
7. Complete final cleaning requirements, including touchup painting.
8. Restore disturbed areas including staging areas and access routes within and to the site.

C. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, the Engineer will either proceed with inspection or notify the Contractor of unfulfilled requirements. The Engineer will prepare the Certificate of Substantial Completion after inspection or will notify the Contractor of items, either on the Contractor's list or additional items identified by the Engineer that must be completed or corrected before the certificate will be issued.

1. Re-inspection: Request re-inspection when the work identified in previous inspections as incomplete is completed or corrected.
2. Results of completed inspection will form the basis of requirements for Final Completion.

1.03 FINAL COMPLETION

A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, the Contractor shall complete the following:

1. Submit a final Application for Payment according to Section 5 – Measurement and Payment Procedures.

2. Submit certified copy of the Engineer's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by the Engineer. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.

3. Instruct County personnel in operation, adjustment, and maintenance of products, equipment, and systems. Provide services of skilled and competent supervisory personnel to instruct County personnel in the operation and maintenance of all operating equipment and systems provided as part of the Contract.

B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, the Engineer will either proceed with inspection or notify the Contractor of unfulfilled requirements. The Engineer will prepare a final Certificate for Payment after inspection or will notify the Contractor of construction that must be completed or corrected before the certificate will be issued.

1. Re-inspection: Request re-inspection when the work identified in previous inspections as incomplete, is completed or corrected.

1.04 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Preparation: Submit three copies of list. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by the Contractor that are outside the limits of construction.

1. Organize items applying to each work area.

2. Include the following information at the top of each page:

a. Project name.

b. Date.

c. Name of the Engineer.

d. Name of the Contractor.

e. Page number.

1.05 PROJECT RECORD DOCUMENTS

A. Maintain on the site one set of the following Record Documents to record actual revisions to the Work.

1. Plans.

2. Specifications.
3. Addenda.
4. Change Orders and other Modifications to the Contract.
5. Reviewed shop drawings and product data.

B. Store Record Documents separate from documents used for construction. Record information concurrent with construction progress.

C. Record Drawings: Do not permanently conceal any work until required information has been recorded. Legibly mark each item to record actual construction including:

1. Measured elevations of all improvements.
2. Measured horizontal and vertical locations of all improvements including but not necessarily limited to: grade beams, guard rails, pedestrian railing, ditches, and drains and drainage systems.
3. Field changes of dimension and detail.
4. Details not on original Plans.
5. Deviations from sizes, locations, and other changes to installation as shown on the contract documents.
6. Established locations of underground work, points of connection with existing utilities, changes in direction of underground lines, locations of valves, manholes, etc.
7. Locations of all items not concealed that the Contractor elects to alter or modify from the contract documents contingent upon the approval of the Engineer for the alteration or modification.

D. Specifications: Legibly mark and record at each Product section a description of actual Products installed, including the following:

1. Manufacturer's name and product model and number.
2. Product substitutions or alternates utilized.
3. Changes made by Addenda and Modifications with corresponding Addenda or Modification number.

E. Submit all Record Documents to the Engineer with claim for Substantial Completion inspection. Submit documents with a transmittal letter containing date, Project title, the Contractor's name and address, list of documents, and signature of the Contractor.

F. The Engineer will return Contract Drawings and Record Documents to the Contractor. The Contractor shall transfer all as-built information onto a set of reproducible prints for the County’s use.

G. The County will not make Final Payment to the Contractor until the Record Documents are provided by the Contractor.

1.06 WARRANTIES AND BONDS

A. Provide duplicate notarized copies. Execute and assemble documents from the Contractor's submittals and documents executed by subcontractors, suppliers, and manufacturers. Provide table of contents and assemble in a D three ring binder(s) with durable plastic cover. Submit three (3) sets.

B. Submit warranties and bonds prior to final Application for Payment.

1. For equipment put into use with the County's permission during construction, submit within ten (10) days after first operation.

2. On request of the County, for designated portions of the Work, submit within ten (10) days of commencement of warranty.

3. For items of Work delayed beyond date of Substantial Completion, provide updated submittal within ten (10) days after acceptance, listing date of acceptance as start of warranty period.

C. The General Conditions of the Contract Documents cover the Contractor's responsibility to remedy defects due to faulty workmanship and materials which appear within one (1) year from the Date of Acceptance. Warranties for more than one (1) year, where indicated in the various sections of the contract documents, shall be in the form of a warranty written on the letterhead of the Contractor, subcontractor, or supplier doing the work or supplying the item to be warranted, as follows:

WARRANTY FOR THE **NAPA COUNTY 2022 ROAD SEAL PROJECTS, RDS 22-14**

We hereby warrant that the_____ which we have installed in NAPA COUNTY, CALIFORNIA for NAPA COUNTY, has been done in accordance with the Drawings and Specifications, and that the work, as installed, will fulfill the requirements of the warranty included in the Specifications. We agree to repair or replace any or all of our work, together with any other and adjacent work which may be displaced by so doing, that may prove to be defective in its workmanship or material within a period of ___ years from the Date of Acceptance of the above named Project, without any expenses whatsoever to the Owner, ordinary wear and tear and unusual abuse or neglect excepted.

In the event of our failure to comply with the above-mentioned conditions within a reasonable time, but in no event longer than thirty (30) days after being notified in writing by the Owner, we, collectively or separately, do hereby authorize the Owner to proceed to have said defects repaired and made good at our expense, and we will honor and pay the costs and charges therefore upon demand.

Signed

Subcontractor/Supplier Date

Countersigned

Contractor Date

**PART 2 – PRODUCTS**

2.01 MATERIALS

A. Cleaning Agents and Equipment: As recommended by the manufacturer or fabricator of the surface to be cleaned.

1. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

**PART 3 - EXECUTION**

3.01 FINAL CLEANING

A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

B. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for the Work or for a portion of Work:

1. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.

2. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.

3. Pave all access roads to and within the site that are materially damaged from pre-project conditions.

4. Remove tools, construction equipment, machinery, and surplus material from Project site.

C. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the County and private property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Work site and dispose of lawfully.

D. Remove tools, surplus materials, equipment, temporary buildings, sheds, and construction facilities from the site.

**PART 4 - MEASUREMENT AND PAYMENT**

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

# 9 COORDINATION OF WORK

## PART I - GENERAL

1.01 DESCRIPTION

A. The Contractor shall coordinate work with work to be performed by others, which may include, but may not be not limited to:

1. Utility coordination.
2. Environmental survey and monitoring.
3. Quality Assurance: Survey Verification, QSD Inspections, Geotechnical Observations, Special Inspections, Material Testing, etc.
4. All other coordination that arises during the duration of the project.

## PART 2 – PRODUCTS - NOT USED

## PART 3 – EXECUTION - NOT USED

## PART 4 – MEASUREMENT AND PAYMENT

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

## 10 MOBILIZATION

**PART I – GENERAL**

1.02 DESCRIPTION

A. Mobilization shall conform to Section 10 "Mobilization" of the Standard Specifications and these Special Provisions.

B. Paving work is expected to occur during favorable weather conditions.

C. Mobilization shall consist of the following work:

1. Bonds and Insurance.
2. Mobilization of materials and equipment to the site.
3. Provide all temporary facilities and construction utilities.
4. Obtaining any necessary permits.
5. Coordination and any other items required to complete the construction not otherwise measured and paid for.
6. Demobilization of all of materials and equipment from the site.
7. On-going and final site clean-up.

**PART 2 – PRODUCTS – NOT USED**

**PART 3 – EXECUTION**

3.01 MOBILIZATION AND DEMOBILIZATION

A. The Contractor shall inspect the site to observe actual field conditions prior to bidding the project.

B. Mobilization shall also include finish work and operations, (demobilization) including, but not limited to, removal of personnel, equipment, supplies, and incidentals from the project site and clean-up of the project site. The Contractor shall not demobilize equipment from the site until the project is accepted as complete, unless directed otherwise in writing by the Engineer.

C. Mobilization shall also include preparation of all necessary permits, submittals, notifications and other documentation necessary for the performance of the work.

3.02 PERMITS AND REGULATIONS

A. The Contractor shall obtain all other permits required for the performance of the work.

B. The Contractor shall COMPLY with the SWRCB requirements.

C. The Contractor shall comply with all dust control requirements in Section 14-9.03, "Dust Control," of the Standard Specifications and comply with Bay Area Air Quality Management District (BAAQMD) guidelines.

D. The contractor shall comply with County's and Regional Water Quality Control Boards

Erosion and Sediment Control Best Management Practices (BMP).

E. Cultural and Prehistoric Resources - The Contractor shall (1) suspend work in the area and (2) notify the Engineer immediately, if evidence of any of the following are items encountered during performance of the Work:

1. Archaeological artifacts
2. Fossils
3. Human remains

3.03 PROTECTION OF EXISTING PROPERTY AND CONDITIONS

A. Protection of Work and Property:

1. Confine the storage of materials and workmen's operations to the limits established on the Contract Documents and by law, permits, and/or directions of the Engineer. Do not unreasonably encumber the premises with materials.
2. Contractor is responsible for the protection and preservation of all materials and equipment located on the construction site.
3. Provide watchman services as may be deemed necessary to safeguard properly all materials, tools, appliances, and work. The County will not assume any responsibility for the loss of or damage to materials, tools, appliances, or work arising from acts of theft, vandalism, malicious mischief, or other causes which may occur during or after working hours.
4. Contractor shall promptly comply with all reasonable requests of the Engineer to protect the site.
5. Repair or replace all work performed or materials, supplies, or equipment furnished which may be damaged or lost by any cause, to the satisfaction of the Engineer.

B. Contractor shall be responsible for all damage to all roads, existing vegetation, existing buildings, utilities, and other property and improvements resulting from the contractor's use and shall repair all damage resulting from such use to the satisfaction of the Engineer and at no cost to County.

C. Contractor's Staging Area: Store construction materials and equipment within boundaries of designated staging and storage areas approved by the Engineer.

D. Tree and Plant Protection:

1. Do not store materials or equipment, or operate or park equipment under the branches of any existing plant to remain except as actually required for construction in those areas.
2. Provide barricades, fences, or other barriers as necessary at the drip line to protect existing plants and trees from damage during construction.
3. Notify Engineer where Contractor feels grading or other construction called for by Contract Documents may damage existing plants/trees to remain.

4. If existing plants to remain are damaged during construction, Contractor shall replace such plants with others of the same species and size as those damaged or as directed by Engineer, at no cost to the County.

3.04 EXISTING UTILITIES

A. The Contractor shall identify, locate, and protect all existing utilities within the limits of work, including onsite and offsite access routes.

B. The location of existing utilities and underground facilities known to the County are shown in their approximate location based on information available at the time of preparing the Contract Documents. The actual location, size, type, and number of utilities and underground facilities may differ from that shown, and utilities or underground facilities present may be present that are not shown.

C. Obtain from the respective agencies the best available current information on location, identification and marking of existing utilities, piping, conduits, and other underground facilities before beginning any excavation. Call Underground Service Alert at 800-642-2444 for information at least 48 hours in advance of beginning work.

D. The Contractor will have to coordinate location, connection points for construction power, water, communication etc., with respective utility. Contractor shall be responsible to provide construction water. Previous Napa County projects have sourced recycled water from the Napa Sanitation District: https://www.napasan.com/

3.05 WORK HOURS

A. Construction activities shall be limited to the hours listed in Section A of the Special Provisions Monday through Friday unless otherwise authorized. Work shall not occur on weekends or holidays, except during emergency conditions, and at the Engineer's approval.

3.06 ACCESS TO THE PROJECT SITE

A. Access to the site is over public roads. Exercise care in the use of such roads and repair any damage to the satisfaction of the County or agency having jurisdiction over the road.

B. Under no circumstances shall the Contractor use any other private roads that are not designated for access.

C. Do not track mud onto private or public roads. The Contractor shall employ a street sweeper as needed to keep all paved surfaces free of tracked mud or dirt.

**PART 4 – MEASUREMENT AND PAYMENT**

A. The contract lump sum price paid under "Mobilization" shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in mobilization/demobilization as specified herein and conforming to the provisions of this section and no additional compensation will be allowed therefore.

## 12 TEMPORARY TRAFFIC CONTROL

### PART 1 - GENERAL

1.01 SUMMARY OF WORK

A. This section includes specifications for all Temporary Traffic Control required for the project and shall include and not be limited to: temporary traffic signal and lighting system, construction area signs, changeable message signs, flagging, placing and installing temporary traffic-handling equipment and devices, maintaining traffic, placing and installing temporary traffic control systems, and placing temporary pavement delineation.

B. Temporary Traffic Control shall conform to Section 12, “Temporary Traffic Control” of the Standard Specifications and these Special Provisions. Temporary Traffic Control must also comply with Part 6, "Temporary Traffic Control," of the *California MUTCD*.

C. The Contractor shall inspect the site to observe actual field conditions prior to bidding the project.

D. The Contractor shall furnish all labor, materials, and equipment necessary to complete the work as shown on the Plans and to maintain the temporary traffic control and signal system in full time operation for the duration of the construction work requiring single lane traffic control, as specified in these Special Provisions of the Specifications, and in strict accordance with the conditions of the Contract. All incidental work not shown on the Plans or specified herein which is necessary to complete the work necessary to provide and maintain the system described, or shown, shall be furnished and installed as part of this contract at no additional cost.

E. The Temporary Traffic Control System for lane closures is for closing traffic lanes with stationary lane closures on 2-lane, 2-way highways. The traffic control system for a lane closure must comply with, Section 12, "Temporary Traffic Control" of the Standard Specifications and these Special Provisions.

F. Type III Barricade shall conform to Section 12-3.02, “Barricades” of the Standard Specifications and these Special Provisions.

G. Construction Area Signs shall conform to Section 12-3.06, “Construction Area Signs” of the Standard Specifications and these Special Provisions.

H. Temporary Pavement Delineations shall conform Section 84-3, "Painted Traffic Stripes and Pavement Markings" of the Standard Specifications and these Special Provisions and shall include but not be limited to: Traffic Stripe (Tape), Temporary Pavement Marker (Tape), Channelizer (Surface Mounted), etc.

I. Temporary Railing (Type K) shall conform to Section 12-3.08, "Type K Temporary Railing" of the Standard Specifications.

J. Temporary Crash Cushion Module shall conform shall conform to Section 12-3.15, "Temporary Crash Cushion Module" of the Standard Specifications and these Special Provisions

1.02 SUBMITTALS

A. Prior to the commencement of work, and within ten (10) days following the notice to proceed, the Contractor shall submit:

1. Three (3) copies, in three-ring binders, of a complete list of equipment and materials to be furnished, including all substitutions proposed to the Engineer for approval.

2. Temporary Traffic Control Plan for Engineer's approval.

3. Shop drawings shall be submitted in a complete package as specified in Section 4 - Submittal Procedures. Partial submittals will not be considered.

1.03 WARRANTIES, GUARANTEES, AND INSTRUCTION SHEETS

A. The Contractor shall be responsible for all work and materials and/or equipment installed under these Plans and Specifications.

B. The Contractor shall repair or replace at his/her expense, any defective work, material, or equipment that may become evident during the operation of the temporary traffic signal system.

C. If any part (or parts) of the temporary traffic signal system fails while the temporary single lane traffic control system is in operation, the Contractor shall provide flaggers until such time as the temporary traffic signal system is operations.

**PART 2 – PRODUCTS**

2.01 MATERIALS

A. Temporary Traffic Signal System shall conform to these Special Provisions.

B. Type III Barricade shall conform to Section 12-3.02B, "Materials" of the Standard Specifications.

C. Construction Area Signs shall conform to Section 12-3.06B, "Materials" of the Standard Specifications.

D. Temporary Pavement Delineations shall conform to these Special Provisions. Painted traffic stripes used for temporary delineation must comply with Section 84-3, "Painted Traffic Stripes and Pavement Markings" of the Standard Specifications and these Special Provisions.

1. Temporary Centerline Delineation - Temporary pavement markers must be the same color as the centerline markers being replaced. Temporary pavement markers must be one of the temporary pavement markers on the Authorized Material List for short-term day or night use, 14 days or less, or long-term day or night use, 180 days or less.

2. Temporary Edge Line Delineation - Temporary, removable, construction-grade striping and pavement marking tape must be one of the types on the Authorized Material List. Apply temporary, removable, construction-grade striping and pavement marking tape under the manufacturer's instructions.

E. Temporary Railing (Type K) shall conform to Section 12-3.08B, "Materials" of the Standard Specifications.

F. Temporary Crash Cushion Module shall conform to Section 12-3.15B "Materials" of the Standard Specifications.

G. Two (2) Portable Changeable Message Signs shall be provided for the project. Signage shall be posted in the eastbound and westbound direction.

**PART 3 – EXECUTION**

3.01 INTERRUPTION OF EXISTING UTILITIES

A. The Contractor shall not cause any utility interruption, temporary relocation, or other modifications as needed to install or remove any traffic signal equipment. If applicable, plan and coordinate any utility interruption with the utility provider and the Engineer.

3.02 REGULATIONS AND CODE

A. All work and materials shall conform to the latest codes, rules and regulations of the following:

1. State codes and ordinances
2. Local City and/or County ordinances
3. National Electrical Code
4. Uniform Building Code

B. Nothing in these Specifications is to be construed to permit work not conforming to the above; expense for compliance with the above shall be paid for by the Contractor. Whenever the Plans and Specifications require higher standards or larger sizes than those required by the Ordinances and Statutes, the Plans and Specifications shall take priority.

C. The Contractor shall have Special Dispensation from the California Occupational Safety and Health Administration to conduct operations no closer than six (6) feet, but within ten (10) feet, of a high voltage line prior to any work in these areas.

3.03 MAINTAINING TEMPORARY TRAFFIC CONTROL SYSTEM

A. Whenever components of the traffic control system are displaced or cease to operate or function as specified from any cause, immediately repair the components to the original condition or replace the components and restore the components to the original location.

B. For a stationary lane closure made only for the work period, remove the components of the traffic control system from the traveled way and shoulder, except for portable delineators placed along open trenches or excavation adjacent to the traveled way at the end of each work period.

C. The Contractor may store the components at selected central locations designated by the Engineer with the limits of the roadway.

## 3.04 TEMPORARY PAVEMENT DELINEATIONS

A. Painted traffic stripes used for temporary delineation must comply with Section 84-3, "Painted Traffic Stripes and Pavement Markings" of the Standard Specifications and these Special Provisions. The scope of work shall include: placing, applying, maintaining, and removing temporary pavement delineation.

B. Whenever work activities obliterate pavement delineation, place temporary or permanent pavement delineation before opening the traveled way to traffic. Place centerline pavement delineation for traveled ways open to traffic.

C. Establish the alignment for temporary pavement delineation, including required lines or markers. Surfaces to receive an application of paint or removable traffic tape must be dry and free of dirt and loose material. Do not apply temporary pavement delineation over existing pavement delineation or other temporary pavement delineation. Maintain temporary pavement delineation until it is superseded or you replace it with a new striping detail of temporary pavement delineation or permanent pavement delineation.

D. Place temporary pavement delineation on or adjacent to lanes open to traffic for a maximum of 14 days. Before the end of the 14 days, place the permanent pavement delineation. If the permanent pavement delineation is not placed within the 14 days, replace the temporary pavement markers with additional temporary pavement delineation equivalent to the striping detail specified for the permanent pavement delineation for the area. The Department does not pay for the additional temporary pavement delineation.

E. When the Engineer determines the temporary pavement delineation is no longer required for the direction of traffic, remove the markers, underlying adhesive, and removable traffic tape from the final layer of surfacing and from the existing pavement to remain in place. Remove temporary pavement delineation that conflicts with any subsequent or new traffic pattern for the area.

F. Temporary Lane Line and Centerline Delineation

1. Whenever lane lines or centerlines are obliterated, the minimum lane line and centerline delineation must consist of temporary pavement markers placed longitudinally at intervals not exceeding 24 feet. The temporary pavement markers must be temporary pavement markers on the Authorized Material List for short-term day or night use, 14 days or less, or long-term day or night use, 180 days or less. Place temporary pavement markers under the manufacturer's instructions. Cement the markers to the surfacing with the adhesive recommended by the manufacturer, except do not use epoxy adhesive to place pavement markers in areas where removal of the markers will be required.

2. For temporary lane line or centerline delineation consisting entirely of temporary pavement markers, place the markers longitudinally at intervals not exceeding 24 feet.

G. Temporary Edge Line Delineation

1. Whenever edge lines are obliterated on multilane roadways, freeways, and expressways, place edge line delineation for that area adjacent to lanes open to traffic consisting of one (1) solid, 4-inch wide traffic stripe tape of the same color as the stripe being replaced, two (2) traffic cones, three (3) portable delineators or channelizers placed longitudinally at intervals not exceeding 100 feet. You may apply temporary painted traffic stripe where removal of the 4-inch wide traffic stripe will not be required.

2. The Engineer determines the lateral offset for traffic cones, portable delineators, and channelizers used for temporary edge line delineation. If traffic cones or portable delineators are used for temporary pavement delineation for edge lines, maintain the cones or delineators during hours of the day when the cones or delineators are being used for temporary edge line delineation.

3. Channelizers used for temporary edge line delineation must be an orange surface-mounted type. Cement channelizer bases to the pavement as specified in Section 85 for cementing pavement markers to pavement except do not use epoxy adhesive to place channelizers on the top layer of the pavement. Channelizers must be one of the 36-inch, surface-mounted types on the Authorized Material List.

4. Remove the temporary edge line delineation when the Engineer determines it is no longer required for the direction of traffic.

3.05 TEMPORARY RAILING (TYPE K)

A. Temporary Railing (Type K) shall conform to Section 12-3.08C, "Construction" of the Standard Specifications

3.06 TEMPORARY CRASH CUSHION MODULE

A. Temporary Crash Cushion Module shall conform to Section 12-3.15C “Construction” of the Standard Specifications.

3.07 CONSTRUCTION AREA SIGNS

A. Construction Area Signs shall conform to Section 12-3.06C, “Construction” of the Standard Specifications.

**PART 4 – MEASUREMENT AND PAYMENT**

The contract lump sum price for “Traffic Control Base Bid” shall include full compensation for furnishing all labor, materials, tools, equipment, changeable message signs, and incidentals and for performing all the work involved as shown on the plans and as specified in these Special Provisions, the Standard Specifications, and as directed by the Engineer and no additional compensation will be allowed.

## 13 WATER POLLUTION CONTROL

### PART 1 – GENERAL

1.01 DESCRIPTION

A. These Special Provisions replace Section 13, "Water Pollution Control" of the Standard Specifications.

B. This section describes the following work:

1. Implementation of the Best Management Practices and Erosion Control Plan

2. Implementation of sediment and erosion control measures (1) during construction and (2) upon completion of construction.

1.02 PERMITS

RESERVED.

1.03 DEFINITIONS

A. Construction Period: Between the dates of Notice to Proceed and Substantial Completion of the Work.

B. Maintenance Period: Between the date of Substantial Completion and three (3) months from substantial completion.

C. Seeding: Application of seed by hydraulically applied methods. Used interchangeably with Hydro-mulching.

1.04 STORM WATER POLLUTION AND EROSION CONTROL PLAN

A. The Contractor shall select and implement additional BMPs that are appropriate for the site and the Contractor's actual methods of construction, access, and project phasing. The BMPs included in the Erosion Control Plan shall be selected in conformance with the SWRCB BMPs Construction Practice Handbook and the Napa County Grading Ordinance Chapter 16.28, Storm Water Management and Discharge Control.

B. The Contractor's erosion and sediment control measures shall comply with the newest SWRCB Construction Storm Water Program:
http://www.swrcb.ca.gov/water_issues/programs/stormwater/constpermits.shtml

1.05 NPDES GENERAL PERMIT COMPLIANCE

Not Required.

1.06 SEDIMENT AND EROSION CONTROL

A. The Contractor shall install and maintain erosion and sediment control measures as needed to mitigate the potential for sediment migration away from the work area and other open waters. The Contractor shall modify and enhance these measures to meet permitting requirements and/or as needed to mitigate sediment migration at no additional expense to the County.

B. Comply with specific measures for sediment and erosion control as required for compliance and as directed by the Engineer.

1.07 NON-STORM WATER CONTROL

A. The Contractor shall designate one (1) fueling and wash area within the staging areas. The Contractor shall only perform fueling, maintenance and emergency repair of vehicles and equipment within the designated fueling area or offsite.

B. The designated fueling and wash area shall be constructed to provide containment of any spills and to prevent any waste from contacting and penetrating the ground by use of methods such as berms and/or liners. The Contractor shall submit details of its fueling and wash area for Engineers approval.

C. Inspect all equipment for leaks immediately prior to the start of construction, and regularly thereafter until equipment is removed from the site. Equipment repair (other than emergency repairs) shall be performed offsite.

D. Any hazardous materials and/or hazardous substances that the Contractor deems necessary for performance of the work shall be stored, used and contained within the fueling and wash area. Dispose of all contaminated water, sludge, spill residue, or other hazardous compounds offsite at a lawfully permitted or authorized facility.

E. Clean up any accidental leaks or spills immediately and remove any contaminated soils or other materials offsite. Dispose offsite in accordance with all applicable laws. Contractor shall maintain onsite spill kits for emergency cleanup throughout the life of the project.

F. Immediately notify the Engineer in the event of any spill or release of any chemical in any physical form in the site during construction.

G. In case of any accidental spill, upon the Contractor's removal and cleanup of the designated fueling area, the Contractor will sample and analyze underlying soil for petroleum hydrocarbons and/or other chemical constituents as appropriate to determine if any contamination has occurred. The Contractor shall submit test results to the Engineer. The Contractor shall be solely responsible for all costs incurred in removing any contamination caused by its activities. This includes, but is not limited to, contamination caused by accidental spills or leaks, wheel tracking, water runoff, water run on, and erosion.

1.08 SUBMITTALS

A. Attention is directed to all of the provisions of Section 21, "Erosion Control," of the Standard Specifications and these Special Provisions.

1.09 QUALITY ASSURANCE

A. Contractor Qualifications: The Contractor shall demonstrate to the satisfaction of the Engineer that it is a qualified landscape Contractor with a valid California C-27 license and a minimum of five (5) years of experience whose work has resulted in successful establishment of native grass cover in disturbed wild land settings.

B. Attention is directed to all of the provisions of Section 21, "Erosion Control," of the Standard Specifications and these Special Provisions.

1.10 DELIVERY, HANDLING AND STORAGE

A. Attention is directed to all of the provisions of Section 21, "Erosion Control," of the Standard Specifications and these Special Provisions.

B. All commercially processed or packaged materials shall be delivered to the site in sealed bags or containers clearly marked to identify the item or materials.

C. The Contractor shall provide a storage yard with appropriate temporary security fencing at the staging area(s) shown on the contract documents or as designated by the Engineer, in which to secure and store equipment and associated construction materials used in this work.

D. Fabric Materials:

1. Each roll of fabric material shall be wrapped with a material covering that will protect them from damage due to shipment, direct sunlight and storage.

2. Handling of the materials on site shall utilize manufacturer-approved methods, such as forklifts, cables and slings. Materials shall be kept clean and free from damage prior to installation. Fabric materials shall be protected from direct sunlight, ultra-violet rays, and temperatures greater than 140 degrees Fahrenheit, mud, dirt, dust and debris during shipment and storage. To the extent possible, the fabric shall be maintained wrapped in a heavy duty protective coating.

1.11 WARRANTY

A. All work shall be done by an experienced contractor familiar with California native grasses and their horticulture and industry methods and standards for grass seeding. The Contractor shall employ modern equipment and state of the art methods and techniques. The Contractor shall have a minimum of five (5) years of applicable on the job experience with native grass seeding and weed control during native grassland establishment periods.

**PART 2 - PRODUCTS**

2.01 BEST MANAGEMENT PRACTICES (BMPs)

A. The following is a list of products for typical BMPs that the Contractor shall employ throughout the site for erosion and sediment control:

1. Silt Fence: Woven filter fabric, UV resistant silt fence. Wooden or steel posts three (3) feet high minimum (does not include embedment).

2. Straw/coir Fiber roll: 100% Biodegradable 10-inch minimum diameter straw or coir/straw fiber roll. North American Green Sediment STOP, or approved equivalent.

3. Check dams shall be installed as directed by the Engineer.

4. Attention is directed to all of the provisions of Section 21, "Erosion Control," of the Standard Specifications and these Special Provisions.

2.02 SEED

A. Attention is directed to all of the provisions of Section 21, "Erosion Control," of the Standard Specifications and these Special Provisions.

2.03 INOCULANTS

A. Attention is directed to all of the provisions of Section 21, "Erosion Control," of the Standard Specifications and these Special Provisions.

2.04 HYDRAULIC WOOD/STRAW FIBER MULCH

A. Attention is directed to all of the provisions of Section 21, "Erosion Control," of the Standard Specifications and these Special Provisions.

2.05 ORGANIC TACKIFIER

A. Attention is directed to all of the provisions of Section 21, "Erosion Control," of the Standard Specifications and these Special Provisions.

2.06 WATER

A. Attention is directed to all of the provisions of Section 21, "Erosion Control," of the Standard Specifications and these Special Provisions.

**PART 3 – EXECUTION**

3.01 GENERAL REQUIREMENTS

A. At a minimum, the Contractor shall install and maintain temporary erosion and sediment control measures in accordance with the Erosion Control Plan and manufacturer's recommendations, as shown on the Plans and as required by these Special Provisions. In case of a conflict, the more rigorous installation requirements, as determined by the Engineer, shall apply.

B. Implement additional measures as needed to control erosion from exposed soil surfaces and to reduce sediment runoff from the project site. These measures shall be implemented and maintained throughout the construction and maintenance periods.

C. During the construction period, the Contractor shall maintain onsite sufficient quantities of erosion and sediment control materials to be installed in the event that rain is forecast, and for rapid response to failures or emergencies. The Contractor shall consult the local weather forecast daily.

D. If rain is forecast during construction, the Contractor shall, at a minimum, secure all soil stockpiles by covering and/or installing a perimeter silt barrier.

E. All temporary erosion control measures shown on the Plans and additional measures deemed necessary for the maintenance period shall be installed at the time of substantial completion.

3.02 COIR/STRAW FIBER ROLLS

A. Coir/straw fiber rolls shall be installed in accordance with manufacturer's recommendations and as shown on the Plans.

B. Coir/straw fiber rolls shall be installed on all areas disturbed during construction, spaced as shown on the Plans, or closer, if needed for adequate erosion control. Risk level 2 projects require that linear sediment controls such as fiber rolls be installed at the toe of slope, face of slope and at grade breaks to comply with sheet flow lengths at a no more than 20-feet apart on slopes less than 25%.

C. Install all coir/straw fiber rolls subsequent to completion of fine grading in an area, and in all cases by October 15. Maintain coir/straw fiber rolls throughout the maintenance period. Following each rain event inspect coir fiber rolls, and replace anchoring stakes and/or coir fiber rolls as needed.

D. Install coir fiber roll in accordance with manufacturer's recommendations and the following requirements:

1. Embed the fiber roll a minimum of four (4) inches below grade. Install fiber rolls by excavating a four (4) inch deep by ten (10) inch wide trench, placing the fiber roll into the trench, and backfilling with soil or gravel, as needed for proper anchoring.

2. Stake the fiber roll at three (3) feet on center. Install additional stakes as needed to completely anchor the coir fiber roll.

3. Align coir fiber roll installations along elevation contours.

4. Turn last ten (10) feet of fiber roll at right angles in the upslope direction (in an "L" shape), to allow for capture and dispersion of surface runoff.

3.03 SILT FENCE

A. Silt Fences shall be used and installed as necessary during the project construction period as a temporary measure for sediment and erosion control.

B. At a minimum, install silt fences to enclose soil stockpiles if rain is forecast and at the active channel bank (wet edge) throughout floodplain grading operations.

C. Silt fence placement and removal shall be coordinated and approved by the Engineer.

D. Install silt fence in accordance with manufacturer's recommendations.

3.04 CHECK DAMS

A. 150 linear feet of check dams shall be installed after construction and as directed by the Engineer.

3.05 JUTE MAT

A. Jute mat shall be installed after construction in accordance with manufacturer's recommendations and as shown on the Plans.

3.06 MAINTENANCE

A. The Contractor shall regularly inspect, maintain and repair temporary erosion control measures throughout construction and the maintenance period. Inspect all temporary erosion control measures when rain is forecast, and immediately following rainfall events. Inspect graded areas after storm events.

B. Following each event, remove accumulated sediment, repair any damage and install any additional measures as needed. Follow all monitoring and reporting requirements per Section 14, "Environmental Protection" of these Special Provisions.

3.07 CLEANUP

A. Upon completion of the maintenance period, remove all materials, and dispose of properly at approved offsite facility. Regrade and restore natural drainage patterns at locations of disturbance and smooth grades and replace erosion control BMPs.

**PART 4 MEASUREMENT AND PAYMENT**

A. The contract lump sum price paid for "Erosion and Sediment Control (Construction/Post Construction Phase)" shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in this section as specified in this Special Provisions, as shown on the plans and as directed by the Engineer and no additional compensation will be allowed.

# 14 ENVIRONMENTAL STEWARDSHIP

## PART 1 - GENERAL

1.01 DESCRIPTION

A. This Technical Specifications replaces Section 14, "Environmental Stewardship" of the Standard Specifications

B. This section describes environmental protection measures to be applied throughout the duration of the Work, including the following:

1. Dust Control
2. Noise Control
3. Wildlife Protection
4. Cultural and Prehistoric Resources

C. General Requirements: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and ground contamination or pollution.

D. Work Windows

1. Ground-disturbing activities may not occur during rain.

1.02 PERMITS

A. Environmental document obtained for this project include specific requirements for sediment, erosion, water and pollution control, and wildlife protection which shall be adhered to at all times. See Section 10, "Mobilization" for permits obtained by the County, if any.

1.03 DUST CONTROL

A. During the performance of all Work under the contract documents, the Contractor shall employ conscientious and effective means of dust control. The Contractor shall assume responsibility for all damages, delays, government-imposed penalties or fines, and claims that result from the Contractor's dust control practices. Comply with Bay Area Air Quality Control District (BAAQCD) published guidelines.

B. Dust control activities will primarily be associated with soil excavation, backfill and compaction, hauling and transport loading operations; however, the Contractor's responsibility for dust control shall cover all the Contractor's operations and shall be continuous (even outside of business hours) throughout the duration of the Work.

C. At a minimum, the Contractor shall control dust using the following methods:

1. Limit vehicle speeds to 10 miles per hour (mph) on unpaved roads.
2. Water all active construction areas and access routes at least three (3) times daily during dry and dusty conditions.
3. Water exposed soil surfaces, soil stockpiles, or other dust generation sites, at the frequency necessary to prohibit dust generation.

4. Provide watering equipment capable of applying water to the point of dust generation.
5. Use the minimum practicable drop heights during transport vehicle loading.
6. Wash all equipment prior to delivery to the site, periodically during construction, and prior to leaving the Work site.
7. To the extent practicable, equipment shall be selected and operated in a manner that minimizes dust generation. All equipment shall be checked by a certified visible emissions evaluator.
8. Maintain equipment engines in good condition and properly tuned (in accordance with manufacturer's specifications).
9. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
10. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

D. Excessive Watering: Except as required by the Engineer, the Contractor shall not employ dust control methods that result in ponded water, erosion, or an increase of the water content of excavated soil by more than one (1) percent above the water content that existed when excavated.

E. Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

1.04 NOISE CONTROL

A. Comply with local noise ordinances. Avoid using tools and equipment that produce harmful noise. Restrict use of noisemaking tools and equipment to hours that will minimize complaints from residences or businesses located near the Work site. See Section B of these Special Provisions for work hours.

B. Internal combustion engines shall be equipped with a muffler of a type recommended by the manufacturer. Equipment and trucks used for construction shall utilize the best available noise control techniques (e.g. engine enclosures, acoustically-attenuating shields or shrouds, intake silencers, ducts, etc.).

C. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five (5) minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of the CCR). Signage shall be provided for construction workers at all access points.

D. Construction workers shall be cautioned on published risks associated with not using ear protection when around heavy equipment operations.

E. Stationary noise sources and staging areas shall be located as far from sensitive receptors as possible. Dewatering pumps and generators, if required to operate during the nighttime, will be placed so that the estimated noise level at the nearest residential receptor does not exceed 60 dBA. This can be achieved by locating the pump and generator at least 725 feet from the nearest receptor or incorporation of mufflers and noise barriers to reduce the noise levels.

F. Signs shall be posted at the construction site that include and describe permitted construction days and hours and a day and evening contact number for the job site. A complaint and enforcement manager shall be appointed to respond to and to track noise complaints.

1.05 WILDLIFE PROTECTION

A. Install orange construction fencing and signage designating construction limits. Restrict equipment and personnel access to environmental sensitive areas.

B. Disturbance or removal of vegetation outside of the designated construction area is not allowed.

C. The County's Biological Monitor (Biologist) will perform pre-construction surveys, inspection of construction limits and the locations of the environmental sensitive area fence, and provide environmental training, and monitoring and wildlife relocation if required as summarized in the table below.

D. Environmental Sensitive Area fence will be implemented and adjusted per the Biologist recommendations throughout the project.

E. The Contractor shall cooperate with the Biologist throughout construction and provide adequate notification to the County's Representative to allow sufficient time for required activities.

F. Contractor and Sub-Contractor shall participate in environmental training by the Biologist and sign training log.

1.06 MINIMUM WILDLIFE PROTECTION MEASURES

A. At a minimum, the Contractor shall comply with the following measures for wildlife protection:

1. Trash and waste material must be properly disposed of in trash receptacles that prevent the access or trapping of native animals. These containers shall be available and used at all times.

2. Trash shall be removed from the site daily.

3. All equipment such as buckets, and open holes, trenches or items that may potentially trap sensitive animals must be covered by the end of each workday. (If this is not possible, one or more escape ramps constructed of earth fill or wooden planks will be established in the hole at an angle no greater than 30 degrees).

4. Thoroughly inspect all holes or trenches for animals before filling. If at any time, wildlife is discovered trapped in a trench or pit, halt work and notify the County's representative immediately.

5. Storage of any pipes measuring four (4) inches or greater in diameter at the site will be avoided, or the ends of any such pipes will be sealed with tape as they are brought to the site. Visually check all sections of construction materials for the presence of wildlife sheltering within them prior to the pipe sections being placed and attached together, or shall have the ends capped while stored on site so as to prevent wildlife from entering. After attachment of the pipe sections to one another, whether installed or not, the exposed end(s) of the pipeline shall be capped at the end of each day during construction to prevent wildlife from entering and being trapped within the pipeline.

6. Allow any wildlife encountered during the course of construction to leave the construction area unharmed. All reasonable efforts shall be made to capture and move all stranded aquatic life observed in the removed material.
7. No cats or dogs or firearms (except for federal, state, or local law enforcement officers or security personnel) will be permitted onsite to avoid harassment, killing, or injuring of protected wildlife.
8. Erosion control fabric with plastic netting may not be used.
9. Lighting of the project site by artificial lighting during night time hours should be minimized to the maximum extent practicable.

1.07 CULTURAL AND PREHISTORIC RESOURCES

A. The Contractor shall (1) suspend work in the area and (2) notify the Engineer immediately, if evidence of any of the following are items encountered during performance of the Work:
    1. Archaeological artifacts
    2. Fossils
    3. Human remains

**PART 4 – MEASUREMENT AND PAYMENT**

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

## 15 EXISTING FACILITIES

### PART 1 - GENERAL

1.01 SUMMARY OF WORK

A. Removal of existing asphalt concrete pavement and cold planing shall conform to Section 15-1.03B, "Remove Concrete", and Section 39-3.04, "Cold Planing Asphalt Concrete Pavement" of the Standard Specifications and these Special Provisions. The areas to remove are painted with white paint.

B. Removal of existing roadway markings shall conform to Section 84-9.03B, "Remove Traffic Stripes and Pavement Markings" of the Standard Specifications and these Special Provisions.

C. Shoulder trenching for the Minor Concrete Barrier shall occur within the extents, as shown on the Plans, and shall protect existing facilities. Trenching shall occur outside the limits of driveway aprons in vicinity of the proposed Minor Concrete Barrier. The Contractor shall notify Underground Service Alert (USA) for marking the locations of existing underground facilities at least two (2) working days prior to starting work.

### PART 2 – PRODUCTS – NOT USED

### PART 3 – EXECUTION

3.01 SUMMARY

A. Existing asphalt concrete pavement, where marked with white paint on the roadway and on the Plans, is to be ground and removed within the limits of removal.

1. Existing asphalt concrete pavement to be removed may, at the contractor's option and if agreed to by the Engineer, be reused in the shoulder backing on Deer Park Road. The maximum size of pieces of asphalt concrete pavement used in the shoulder backing shall not exceed 1-1/2 inches.

### PART 4 – MEASUREMENT AND PAYMENT

A. The contract unit price paid for the "Asphalt Removal (X" Grind)" shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved as shown on the plans and as specified in the Standard Specifications and these Special Provisions, and as directed by the Engineer, and no additional compensation will be allowed. Ground areas are identified with white paint on the selected Roads.

B. Payments for off-haul, disposal, etc., shall be included in the various bid items and no additional compensation will be allowed.

## 16 TEMPORARY FACILITIES

### PART 1 – GENERAL

1.01 SUMMARY

A. This section includes requirements for installation, maintenance, and removal of temporary utilities, facilities, controls, construction signs, traffic control, and other construction materials utilized during construction. These Special Provisions replace Section 16, "Temporary Facilities" of the Standard Specifications.

1.02 TEMPORARY UTILITIES

A. General: The Contractor shall provide all necessary temporary utilities required during construction, including but not limited to all necessary temporary meters, equipment, wiring, piping, fixtures, and connections. The Contractor shall remove all temporary appurtenances when they are no longer necessary and at the completion of Work.

1.03 CONSTRUCTION FACILITIES

A. Contractor's Field Office: At the Contractor's option, the Contractor may provide and maintain a temporary job office on the site for the Contractor's use. The location of the office shall not interfere with the Work nor with traffic on public roadways.

B. Temporary Storage for Tools, Materials, and Equipment: It is the Contractor's responsibility to provide temporary storage sheds or other enclosed temporary structures as required or as deemed necessary by the Contractor to protect material and equipment stored on-site. The Contractor shall remove the tools, materials, and equipment when they are no longer necessary and at the completion of Work.

C. Temporary Sanitary Facilities: It is the Contractor's responsibility to provide and maintain adequate toilets, washing facilities, and drinking facilities for workers. Such items shall comply with all governing health and sanitary requirements. The Contractor shall remove the facilities at the completion of Work.

1.04 TRAFFIC CONTROL, TEMPORARY BARRIERS, AND ENCLOSURES

A. General Protection: Provide all temporary barricades, fences, caution signs, and warning lights as required for the safety of persons. Operate warning lights during hours from dusk to dawn each day. Take whatever care is necessary to avoid damage to adjacent buildings, property, public rights-of-way, and facilities or utilities to remain, whether on the Work site or adjacent to it, as Contractor is liable for any damage thereto or interruption of service due to Contractor's operations.

B. Temporary Fences and Barricades: Provide and maintain all temporary site fences, tree protection fencing, and barricades as required for the Work, and remove upon completion of Work.

C. Prior to the start of Work, the Contractor shall submit Traffic Control Plans for all project phases for the Engineer's review and approval. Plans shall include all necessary measures to control public traffic and construction traffic entering, exiting, and travelling adjacent to the Work site.

D. No road closure is allowed at any time.

E. Contractor shall keep access to all private properties at all times.

1.05 SITE MAINTENANCE

A. Cleaning During Construction:

1. Control accumulation of waste materials and rubbish; periodically dispose of legally off-site.

2. Clean interior areas prior to start of finish Work. Maintain areas free of dust and other contaminants during finishing operations.

1.06 PROJECT IDENTIFICATION

A. Project signs: Provide a project job sign, maximum 30 square feet in size, or wood painted with lettering by a professional sign painter. The content of the sign will be as determined by the County. Obtain approval for the location of the sign by the County prior to installation. Remove the sign upon completion of Work and dispose of legally off-site. Allow no other signs to be placed.

1.07 REMOVAL

A. Remove temporary facilities, fencing, materials, equipment, services, and construction prior to Substantial Completion inspection.

B. Clean and repair damage caused by installation or use of temporary facilities. Remove temporary underground lines and installations. Grade site as indication on Plans. Restore existing facilities used during construction to the original condition when first installed, unless specified otherwise by the Engineer.

**PART 2 - PRODUCTS**

2.01 MATERIALS

A. Temporary materials and equipment may be new or used, but shall be adequate in capacity for the required usage, shall not create unsafe conditions, and shall not violate requirements of applicable codes and standards.

B. Hazardous or Flammable Chemicals: Use and store hazardous or flammable chemical liquids or gases brought into the Project site in acceptable containers conforming to the requirements of OSHA. Use such materials in a manner that will prevent their accidental release into other areas. Do not discard such materials on the jobsite. Remove empty containers from the Work sites immediately and dispose of in the proper manner.

**PART 3 – EXECUTION – NOT USED**

**PART 4 MEASUREMENT AND PAYMENT**

Full compensation for Temporary Facilities shall be considered as being included in the cost of the contract items for which it is related and no additional compensation will be allowed.

# 17 CLEARING AND GRUBBING

## PART 1 - GENERAL

### 1.01 SUMMARY OF WORK

A. Clearing and Grubbing shall conform to the provisions in Section 17-2, "Clearing and Grubbing", of the latest version of the Standard Specifications and these Special Provisions.

B. The Work includes the following:

1. Removal of debris and minor demolition within the limits of Work.
2. Specific non-native vegetation removal practices within the project area.
3. Select trimming of tree limbs as needed for equipment access.
4. Legal disposal of removed vegetation and debris off-site.

C. The Contractor shall protect all native trees and all other native vegetation not slated for demolition. Prior to commencing construction, the Contractor shall install temporary fencing, flagging, or equivalent around the perimeter of all vegetated areas and/or individual trees to be preserved, including dead trees (i.e. "snags"), and any other on-site improvements. Prior to commencing Work, the Contractor shall review all tree and other protection fencing with the Engineer and field adjust the limits as directed by the Engineer.

D. The Contractor shall remove debris including timber, rock, concrete, rubble, trash, and other items which may exist within the limits of Work for this contract. Rocks and boulders may be reused in the Work as directed by the Engineer. The Contractor shall verify potential for reuse of these materials with the Engineer and prior to off-haul and disposal activities.

E. Unless shown to be removed or altered, existing improvements and facilities, utilities, adjacent property, trees, and plants are not to be removed and shall be protected from injury or damage.

## PART 2 – PRODUCTS – NOT USED

## PART 3 – EXECUTION

### 3.01 CONSTRUCTION

A. Work shall conform to Section 17-2, "Clearing and Grubbing" of the Standard Specifications and these Special Provisions.

### 3.02 CLEARING AND GRUBBING

A. Limit clearing to entire asphalt width of each roadway.

B. Areas shall be cleared and grubbed by removing obstructions, trees, shrubs, grass, and other vegetation.

**C. Prior to grinding the Contractor shall sweep the entire width of the roadway and trim all vegetation necessary to see and work on the entire roadway width.**

D. All existing vegetation, outside the areas to be cleared and grubbed, shall be protected from the Contractor's operations unless specifically shown on the Plans to be removed.

E. Nothing herein shall be construed as relieving the Contractor of his/her responsibility for final cleanup.

3.03 MINOR DEMOLITION AND DEBRIS REMOVAL

A. Remove any man-made structures to prevent interference with the work outlined within these specifications. Any demolition of unidentified structures by the Contractor not visible and accounted for during the initial bid walk shall be negotiated as extra work, subject to authorization by the Engineer.

B. Remove incidental debris encountered during vegetation removal and segregate and dispose of debris off-site. Vegetative matter is not debris. Any debris removal that meets any one of the following criteria shall be negotiated as extra work, subject to authorization by the Engineer.

1. Debris that requires special equipment for removal.

2. Hazardous debris that requires special off-site disposal per the County's direction.

C. Except for materials indicated to remain as the Owner's property, removed vegetation, debris, and other materials are the Contractor's property. Remove materials from site and dispose of in a legal manner.

**PART 4 MEASUREMENT AND PAYMENT**

The contract lump sum price paid for "Clearing and Grubbing and Sweeping" shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in this Section, Section 37 "Bituminous Seals", and as specified in these Special Provisions and as directed by the Engineer and no additional compensation will be allowed.

## 26 AGGREGATE BASES

### PART I - GENERAL

1.01 SUMMARY OF WORK

A. This section covers the permeable and non-permeable aggregate base for roadway sections, structure backfill, and shoulder backing, etc., unless modified by the Technical Specifications in the various items of work.

B. Aggregate bases shall conform to Section 26, "Aggregate Bases", of the Standard Specifications and these Special Provisions.

C. The work to be performed includes the preparation of the aggregate base course, the production, stockpiling, transporting, placing, compacting of the aggregate base course, and all other required incidental work.

1.02 SUBMITTALS

A. Contractor shall submit aggregate base source and certified laboratory test results to the Engineer for approval.

B. Contractor shall submit tickets for each load of aggregate.

### PART 2 – PRODUCTS

2.01 MATERIALS

A. Aggregate base shall be Class 2 with 3/4 inch maximum aggregate and conform to Section 26.1.02, "Materials" of the Standard Specifications and these Special Provisions.

### PART 3 – QUALITY ASSURANCE

3.01 CONSTRUCTION

A. Construction shall conform to Section 26-1.03, "Construction" of the Standard Specifications and these Special Provisions.

3.02 DELIVERY, STORAGE, AND HANDLING

A. On-Site Storage: Store aggregate-base material on-site covered or in a location where material will not be contaminated. Stockpiles of aggregate base shall be covered with plastic or geotextile, or protected with a linear sediment barrier at all times during the rainy season, and when precipitation is forecast during the non-rainy season.

3.03 EXAMINATION

A. The Contractor shall call for an inspection by the Engineer and obtain written acceptance of the prepared subgrade before proceeding with the placement of the aggregate base course.

B. The subgrade is to receive aggregate base course, immediately prior to spreading, shall conform to the compaction and elevation tolerances indicated and shall be free of standing water and loose materials.

3.04 PLACEMENT AND COMPACTION

A. Subgrade shall be prepared and compacted per Section 19, "Earthwork" and 26, "Aggregate Bases" of the Standard Specifications and the Technical Specifications.

B. Spreading and compactions of Aggregate base shall conform to Section 26, "Aggregate Bases" of the Standard Specifications. Compact each layer to at least 95% relative compaction under California Test 231.

**PART 4 – MEASUREMENT AND PAYMENT**

A. Full compensation for "Class 2 Aggregate Base" and "Shoulder Backing" shall be considered as being included in the cost of the contract items for which it is related and no additional compensation will be allowed.

## 37 BITUMINOUS SEALS

### PART 1 - GENERAL

1.01 SUMMARY OF WORK

A. Bituminous Seals shall conform to Section 37, "Bituminous Seals" of the Standard Specifications and these Special Provisions.

B. Crack Treatments shall conform to Section 37-6, "Crack Treatments" of the Standard Specifications and these Special Provisions.

1. Section 37-6.03, "Construction" include crack sealing all cracks, regardless of size, and no change orders shall be issued for cracks greater than one (1) inch, it is included in this scope of work.

C. The scope of work shall include and not be limited to:

1. Crack treatment shall occur after the grind and patch repairs, but before the application of the resurfacing layer. Cracks 1/2" wide and wider shall be filled before surface treatment is applied. Cracks shall be routed to a depth and width of 1/2" prior to sealing.

2. Crack sealing shall be performed after any required pavement repair or grinding operations and prior to placing flexible pavement coatings, pavement reinforcing fabric, or overlay.

3. Areas where pavement repair or grinding operations occurred shall be coated with a layer of fog seal before the application of resurfacing treatment.

4. The resurfacing treatment of a Single Cape Seal composed of a single layer of aggregate chips followed by an application of Microsurfacing treatment.

a. Microsurfacing is a mixture of polymer modified emulsion, mineral aggregate, mineral filler, water, and other additives, properly proportioned, mixed and spread on a paved surface in accordance with these specifications. The mix should be capable of being spread in variable thick cross sections (wedge, ruts, scratch course and surface), which, after initial traffic consolidation, resists compaction throughout the entire design tolerance range of bitumen content and variable thickness' to be encountered. The end product should maintain a friction resistant surface (high wet friction coefficient) in variable thick section throughout the service life of the microsurfacing. This mix is to be quick traffic system, meaning that it will be able to accept traffic after a short period of time. The amount of time will vary from job to job and must be evaluated on an individual job basis. This system shall be required to accept traffic on a one-half (1/2) inch thick surface within two hours after placement in +75° F temperature and 50% or less humidity.

B. Rejuvenating Seal Coat:

1. Seal coat is composed of a polymer modified rejuvenating asphaltic emulsion (PMRE) and scrubbing the emulsion with a scrub broom to fill cracks and voids within the pavement surface.

2. Applying PMRE and scrubbing the emulsion with a scrub broom as specified herein.

3. Applying aggregate, rolling the aggregate, sweeping and disposing of excess aggregate (as specified), and applying a polymer modified asphaltic emulsion (PME).

C. Surplus Material shall conform to Section 19-2.03B, "Surplus Material" of the Standard Specifications unless otherwise specified in these Special Provisions.

1.02 SUBMITTALS

A. Submit bituminous and chips material for the approval of the Engineer.

B. Submit SDS for each PMRE ingredient and the polymer modified rejuvenating asphaltic emulsion.

C. At least 10 days before starting seal coat application, submit the following test results:

1. PMRE test results for quality characteristics from supplier of the PMRE.

2. Rejuvenating agent test results for quality characteristics from the supplier of the PMRE.

3. Screening test results for the following:

a. Gradation per California Test 202

b. Los Angeles Rattler per California Test 211

c. Film stripping per California Test 302

d. Cleanness value per California Test 227

e. Percent crushed particles per California Test 205

4. Vialit Adhesion Test Result: For each delivery of PMRE to the job site, submit a certificate of compliance and a copy of the specified test results from the emulsion supplier. The Vialit test is available at the Caltrans METS Website.

D. Submit SDS for each microsurfacing ingredient and the microsurfacing mix design for the approval of the Engineer. The mix design report must include test results as specified in Section 37-3.01A(3), "Submittals" and "Quality Control" efforts must be adhered to as specified in Section 37-3.03A(4)(b).

E. Prior to disposal of excess material submit request in writing for approval of the Engineer.

1.03 CONSTRUCTION

A. If pavement resurfacing treatment affects access to residential property or commercial property, signs must be posted at 100-foot intervals. Signs must display the dates and hours that access will be restricted. Notify residences, businesses, and local agencies at least 24 hours before starting activities. The notice must contain:

1. Describe the work to be performed.

2. Detail streets and limits of activities.

3. Indicate dates and work hours.

4. Be authorized by Napa County Public Works.

B. Chip Seals shall conform to Section 37-2.01C, "Construction" of the Standard Specifications unless otherwise specified in these Special Provisions.

## 1.04 QUALITY ASSURANCE

A. Take samples of the PMRE under California Test 125.

B. Store samples in clear and airtight sealed containers. Samples taken must be placed in wide mouth plastic containers and taken in the presence of the Engineer. Samples must be stored at temperatures ranging from 40 to 120 degrees Fahrenheit until submitted for testing.

1. As specified in Section 37-3.01B(2), the job mix (target) gradation shall be within the gradation band for Type II gradation. After the target gradation has been submitted (this should be the gradation that the mix design is based on) then the percent passing each sieve shall not vary by more the stockpile tolerance shown in the above table for each individual sieve, and still remain within the gradation band. It is recommended that the percent passing shall be not go from the high end to the low end of the range for any two consecutive screens.

2. The aggregate will be accepted at the job location stockpile or when loading into the support units for delivery to the laydown machine. The stockpile shall be accepted based on five (5) gradation tests according to AASHTO T2 (ASTM D75). If the average of the five (5) tests are within the gradation tolerance, then the materials will be accepted. If the tests show the materials to be out, the contractor will be given the choice to either remove the materials or blend other aggregate with the stockpile material to bring into specifications. Materials used in blending must be the quality tested before blending and must be blended in a manner to produce a consistent gradation. If blending is used it will require that a new mix design be performed.

3. Screening shall be required at the stockpile prior to delivery to the paving machine, if there are any problems created by having oversize materials in the mix.

## 1.05 LABORATORY EVALUATION

A. General: Before the work commences, the Contractor shall submit a signed mix design covering the specific materials to be used on the project. The design will be performed by a laboratory which has experience in designing microsurfacing. After the mix design has been approved no substitution will be permitted without prior approval.

ISSA can provide a list of laboratories experienced in microsurfacing design.

B. Mix Design: At least ten (10) days prior to placement the contractor shall submit to the Engineer for approval a complete mix design prepared and certified by a laboratory. Compatibility of the aggregate, polymer modified emulsion, mineral filler, and other additives shall be verified by the mix design. The mix design shall be made with the same aggregate gradation the Contractor will provide on the project.

1. The mixing test is used to predict how long the material can be mixed in the machine before it begins to break. It is more for information to be used by the Contractor than for quality of the end product.

2. The mixing test and set time should be checked at the highest temperature expected during construction.

3. The mix design should report the quantitative effects of moisture content on the unit weight of the aggregate (bulking effect). The report must clearly show the proportions of aggregate,

mineral filler (min. and max.), additives usage and polymer modified asphalt emulsion based on the dry weight of the aggregate.

4. All component materials used in the mix design shall be representative of the materials proposed by the Contractor to be used on the project.

5. The percentage of each individual materials required shall be shown in the laboratory report. Adjustments may be required during construction, based on field conditions.

| | |
|---|---|
| Residual Asphalt | 5.5% to 10.5% by dry weight of aggregate |
| Miller Filler | 0.0% to 3% by dry weight of aggregate |
| Polymer Based Modifier | Minimum of 3% solids based on bitumen weight content |
| Additive | As needed |
| Water | As required to produce a proper mix consistency |

1.06 AMBIENT CONDITIONS

Apply PMRE and PME when the ambient air temperature and the pavement surface temperature is at least 50 degrees Fahrenheit and rising.

Do not apply PMRE or PME when weather forecasts predict the ambient air temperature will fall below 32 degrees Fahrenheit within 24 hours after application or rain is forecasted within 24 hours after application.

**PART 2 – PRODUCTS**

2.01 MATERIALS

A. Crack sealing material must be compatible with the PMRE used to resurface the road. Manufacturer is to provide, in writing, that the Crack Sealant is compatible with Chip Seal emulsion.

1. Material shall be "Topeka Fines", No. 4 HMA Type A/B PG 64-16, or approved alternate material.

B. Chip Seals shall conform to Section 37-2, "Chip Seals" of the Standard Specifications and these Special Provisions.

C. Materials for screenings shall conform to Section 37-2.03, "Polymer Modified Asphaltic Emulsion Chip Seals" of the Standard Specifications unless otherwise specified in these Special Provisions. Aggregate for screenings shall be washed at least once and must have the gradation as determined under California Test 202 in the following table:

**Polymer Modified Asphaltic Emulsion Seal Coat Screenings**

| | Percentage Passing | | | |
|---|---|---|---|---|
| Sieve Sizes | Coarse 1/2" Max | Medium 3/8″ Max | Medium Fine 5/16″ Max | Fine 1/4" Max |
| 3/4" | 100 | -- | -- | -- |
| 1/2" | 85 – 100 | 100 | -- | -- |
| 3/8″ | 0 – 30 | 85 – 100 | 100 | 100 |
| No. 4 | 0 – 5 | 0 – 15 | 0 – 50 | 60 – 85 |
| No. 8 | -- | 0 – 5 | 0 – 15 | 0 – 25 |
| No. 16 | -- | -- | 0 – 5 | 0 – 5 |
| No. 30 | -- | -- | 0 – 3 | 0 – 3 |
| No. 200 | 0 – 2 | 0 – 2 | 0 – 2 | 0 – 2 |

The cleanness value determined under California Test 227 must be 86.

D. Screenings must comply with the quality characteristic requirements shown in the following table:

| Quality Characteristics | Test Method | Requirements |
|---|---|---|
| Lost Angeles Rattle, %, max | California Test 211 | Section 37-2.01B |
| Film Stripping, %, max | California Test 302 | Section 37-2.01B |
| Cleanness Value, min | California Test 227 | 70 |
| Percentage of Crushed Particles, %, min | California Test 205 | 95 |

E. Polymer Modified Rejuvenating Asphaltic Emulsion (PMRE)

PMRE shall be made with a polymer rejuvenating agent, a latex polymer, and asphalt and shall meet the requirements for the quality characteristics shown in the following table:

**Polymer Modified Rejuvenating Asphaltic Emulsion (PMRE)[1]**

| Quality Characteristic | Test Method | Requirements |
|---|---|---|
| Tests on Emulsion | | |
| Viscosity @ 122°F (SFS) | ASTM D244 | 50 – 400 |
| Residue, w%, min | ASTM D244 | 65 |
| pH | ASTM E70 | 2.0 – 5.0 |
| Sieve, w%, max | ASTM D244 | 0.1 |
| Oil Distillate, w%, max | ASTM D244 | 0.5 |
| Test on Residue (AASHTO T59)[2] | | |
| Viscosity @ 140°F, (P), max | ASTM D2171[3] | 5,000 |
| Penetration @ 39.2°F, min | ASTM D5 | 40 |
| Elastic Recovery on Residue by Distillation, %, min[4] | AASHTO T59, T301[2,3] | 60 |
| Modified Torsional Recovery, %, min[4] | California Test 332[5] | 45 |
| Test on Rejuvenating Agent | | |
| Flash Point, COC, °F | ASTM D92 | > 380 |
| Viscosity @ 140°F, CST | ASTM D92 | 50 – 175 |
| Flash Point, F, COC, min | ASTM D2170 | 380 |
| Saturate, % by weight, max | ASTM D2007 | 30 |
| Asphaltenes, max | ASTM D2007 | 1.0 |
| Test on Rejuvenating Agent RTFOT Residue | | |
| Weight Change, %, max | ASTM D2872 | 6.5 |
| Viscosity Ratio, max | ASTM D2170 | 3 |

[1] Specification from Telfer Pavement Technologies, LLC – PMRE for Chip and Scrub Seals.

[2] Exception to AASHTO T59: Bring the temperature on the lower thermometer slowly to 350°F ± 10°F. Maintain at this temperature for 20 minutes. Complete total distillation in 60 ± 5 minutes from first application of heat.

[3] Elastic Recovery @ 10°C (50°F): Hourglass sides, pull to 20 cm, hold 5 minutes then cut, let site 1 hour.

[4] Choose either Elastic Recovery or Torsional Recovery as a test.

[5] Torsional Recovery shall include the first 30 seconds.

F. Cape Seal (Single Chip Seal with Microsurfacing):

1. Screening shall conform to the grading of Coarse 3/8 inch for the single application.
2. Aggregate for microsurfacing shall be Type II, see the table below.

**Microsurfacing Aggregate Grading**

| | Percentage Passing by Aggregate Type | | |
|---|---|---|---|
| Sieve Sizes | I | II | III |
| 3/8″ | -- | 100 | 100 |
| No. 4 | 100 | 94 – 100 | 70 – 90 |

| | | | |
|---|---|---|---|
| No. 8 | 90 – 100 | 65 – 90 | 45 – 70 |
| No. 16 | 60 – 90 | 40 – 70 | 28 – 50 |
| No. 30 | 40 – 65 | 25 - 50 | 19 – 34 |
| No. 200 | 10 - 20 | 5 - 15 | 5 – 15 |

3. Microsurfacing quality control shall be as specified in Section 37-3.03A(4)(b) of the Standard Specifications.
4. After the single chip seal is applied and cures, microsurfacing shall be applied to the road surface. Microsurfacing shall conform to the provisions in Section 37-3, "Micro-Surfacings" and shall meet the requirements for "Aggregate Gradation" in Section 37-3.01B(2), "Micro-surfacing Mix Design Requirements" in Section 37-3.03B(5), "Micro-surfacing Emulsions" in Section 37-3.03B(2), and these Special Provisions.
5. Aggregate:
    a. Mineral aggregate used shall be of the type and grade specified for the particular use of the microsurfacing. The aggregate shall be a manufactured crushed stone such as granite, slag, limestone, chert, or other high quality aggregate, or combination thereof. To assure the material is totally crushed, 100% of the parent aggregate will be larger the largest stone in the gradation to be used. AGGREGATE IS TO BE BLACK, no gray or brown aggregate shall be allowed.
6. Mineral Filler:
    a. Mineral filler, if required, shall be any recognized brand of non-air entrained Portland cement or hydrated lime that is free from lumps. It may be accepted upon visual inspection. The type and amount of mineral filler needed shall be determined by a laboratory mix design and will be considered as part of the aggregate gradation. An increase or decrease of less than one percent (1%) may be permitted when the microsurfacing is being placed, if it is found to be necessary for better consistency or set time.
7. Water:
    a. The water shall be potable or recycled, if approved by the Engineer, and free of harmful soluble salts or reactive chemicals and any other contaminates.
8. Additives:
    a. Additives may be added to the emulsion mix or any of the component materials to provide the control of the quick-traffic properties. They must be included as part of the mix design and be compatible with other components of the mix.

**PART 3 – EXECUTION**

3.01 SEQUENCE OF WORK

A. Prior to commencing of work, the Contractor shall stake the limits of work for the review and approval of the Engineer. Adjust limits of work as instructed by the Engineer to meet the design intent.

B. Areas that have been patched with asphalt within the project limits shall receive a fog seal prior to the application of PMRE.

   1. CQS-1H Fog Seal Emulsion: 0.15 gallons per square yard. County may direct Contractor to reduce this rate based on field observation during application.

   2. Contractor shall wait a minimum of 24 hours between the application of the fog seal over the digout areas and before applying PMRE to the road surface.

   3. Do not apply PMRE unless there are sufficient screenings at the job site to cover the emulsion or binder.

      a. Application of PMRE and Screenings shall conform to the provisions in Section 37-2.03C, "Construction" of the Standard Specifications unless otherwise specified in these Special Provisions.

   4. Discontinue application of emulsion early enough to comply with lane closure specifications and darkness. Apply one (1) lane at a time.

C. The edge lines of the limits of the resurfacing application on both sides of the street shall be maintained in a neat uniform line.

D. PMRE shall be applied at a minimum temperature of 130 degrees Fahrenheit. The PMRE shall be immediately broomed to fill cracks and voids.

E. The Contractor shall furnish and maintain in good working condition all tools and equipment necessary to do the work with personnel efficiently and skillfully.

F. Scrub Broom Equipment (Refer to Exhibit A):

   1. Immediately following the application of PMRE to the road surface, material shall be scrubbed with a scrub broom for the purpose of forcing the PMRE into the existing surface and distributing it evenly over various road surface contours.

   2. The scrub broom frame shall be constructed of metal and shall be attached to and pulled by the PMRE distribution vehicle. The scrub broom must be equipped with the means to mechanically raise and lower the scrub broom off and onto the road surface at designated points of completion and start up. It shall be towable in the elevated position to the next area of construction. The weight of the broom assembly shall be such that it does not squeegee the emulsion off the roadway surface.

   3. The application of PMRE and the scrub broom operation shall cease 40 feet prior to the end of the street section of intersection. The remaining PMRE shall be drug out by the scrub broom, and the remaining PMRE required to complete the pass shall be applied only by the spread truck, at the specified rate.

   4. Immediately following the scrubbing of emulsion, aggregate shall be applied at the rate specified. The rate shall be adjusted up or down so that no "bleed through" occurs during rolling. The aggregate shall be spread evenly by a computer controlled mechanical spreader.

5. The main body of the scrub broom shall be a minimum of 6′-9″ wide and 8′-0″ deep. The maximum width of the rigid frame at any point shall not exceed 8′-0″. The depth shall not exceed 10′-0″. Refer to Exhibit A "Scrub Broom" for more information.

    a. The nearest and furthest members, paralleling the back of the spreader truck, and diagonal members shall be equipped with street brooms.

    b. The leading member and the trailing member shall have broom heads angled at 15 degrees off the centerline of the supporting member.

    c. The diagonal members shall have broom heads attached in line with the centerline of the supporting member.

    d. Each individual street broom attached to the scrub broom assembly shall be 3 ½″ w x 6 ½″ h x 16″ L and have stiff nylon bristles. Bristle height is to be maintained at a minimum of five (5) inches.

    e. The scrub broom shall be equipped with a min. of two (2) hinged wing assemblies attached to the main body not to exceed five (5) feet in total per side, with diagonals and equipped with street brooms.

6. The purpose of the maximum rigid frame width and the hinged wing extensions is not only for maximum width of 16 feet but to maintain the scrubbing process evenly as contours and cross-sections change across the existing road surface.

7. The Contractor shall supply a scrub broom as described for the purpose of scrubbing the PMRE. If the Contractor fails to supply the scrub broom specified, the project shall shutdown until the contractor supplies the required equipment in full operation. Shutdowns resulting from the failure to provide this specified scrub broom shall not excuse the Contractor from the provisions of contract working days.

8. Sweeping shall be done before the end of the day, after the scrub seal operation to remove any excess loose aggregate. The Contractor shall clear driveways, gutters, and sidewalks of excess aggregate at the end of each day until the street is surfaced with either a fog seal or microsurfacing. The Contractor shall wait a minimum of one (1) day after the chip seal application before applying other surface treatments as specified.

3.02 SURFACE PREPARATION

A. Immediately prior to performing crack sealing, the cracks shall be cleaned by the use of high-pressure compressed air such that all vegetation, dirt, and other objectionable materials are removed. The compressed air shall be filtered of moisture and oils. Under damp conditions, a hot compressed air lance shall be utilized to dry the cracks as well.

    1. Sealant material shall be applied at the temperature and rate recommended by the manufacturer.

    2. Sealant shall be applied to a slightly overfilled condition, then struck off with a guide-shoe, plate, or squeegee to produce a band of material two (2) inches to four (4) inches in width, centered over the crack. On streets to be slurry or seal-coated, strike-off height shall be less than 1/8-inch above the pavement surface.

3. Extensively cracked pavement areas (alligator cracking) shall not be crack sealed unless specifically directed by the Engineer. This is necessary to avoid interference with proper adhesion of the flexible pavement coatings, pavement reinforcing fabric, or overlay, and to avoid subsequent asphalt bleeding on the new surface. Where the Engineer determines excessive coating or thickness of pavement crack sealant by the Contractor, the Contractor shall perform the necessary pavement base repairs to correct the problem prior to placement of any flexible pavement coating, pavement reinforcing fabric, or overlay.

B. The Contractor will prepare the surfaces to be chip sealed by removing all existing thermoplastic striping and raised pavement markers, as well as sweeping or brooming the surfaces with a power broom. When removing raised pavement markers, the Contractor shall remove excessive adhesive left on the pavement, due to the removal of raised pavement markers. Removal shall be done to the satisfaction of the Engineer. Should the asphalt surface be damage during removal, the Engineer may request a leveling course of HMA to be placed prior to application of the surface treatment at no additional cost to the contract.

C. Lane lines and pavement markings, with the exception of crosswalks and stop bars, may be removed up to 72 hours in advance of the surface treatment. Crosswalks and stop bars may be removed 24 hours in advance of the surface treatment. All lane lines and pavement markings will be referenced with temporary lane markers (tabs) according to the manufacturer's recommendations. Maintain the markers by replacing lost or damaged markers daily.

1. Temporary lane line markers used for centerlines shall have yellow bodies and yellow reflective sheeting on both sides.

2. Temporary lane markers used for lane lines or edge lines shall have the same body and reflector color as required for the permanent striping and the reflective sheeting shall only be required on the side that faces oncoming traffic.

3. The patterns and spacing for the temporary pavement markers shall be as follows:

    a. Long Lines: Place one (1) marker at 50-foot intervals

    b. Broken Lines: Place one (1) marker at the beginning of each broken line

    c. Double Yellow Lines: Place two (2) markers side by side with a four (4) inch separation between markers at 50-foot intervals.

    d. Stop Bar: Place one (1) marker, on either side of the stop bar, across the travel lanes.

The Engineer shall approve the surface preparation prior to sealing activities.

D. The Contractor shall remove any and all vegetation within the road resurfacing limits by an acceptable and approved means (i.e. manual and/or mechanical) ensuring that dirt and debris are removed from cracks and voids. Apply an approved herbicide to the cracks in the road surface to prevent the re-growth of vegetation through the road surface. The removal of vegetation and application of herbicide shall be performed to the satisfaction of the Engineer. The herbicide shall be applied at least 10 days prior to the seal coat (PMRE) operation, or as direction by the manufacturer of the approved herbicide. The herbicide shall be submitted by the Contractor for approval by the Engineer. The application of the herbicide shall be performed in accordance with all applicable regulations. Any and all fines or clean-up costs for unlawful misuse or discarding of herbicides shall be the sole responsibility of the Contractor. Mixtures and spread rates for the

herbicides shall be determined by the manufacturer's specifications. Wash down of equipment or discarding of herbicides shall not enter catch basins or drainage facilities.

E. Areas that have been patched with asphalt within the last six (6) months shall receive a fog seal at the discretion of the Engineer.

F. The Contractor shall be responsible for performing supplemental cleaning and hand sweeping or brooming as necessary at 24 hours a day until the roadway is free of hazards and obstructions. Contractor shall be liable for "windshield" claims or damages related to roadway debris. Roadway shall be clear and safe for traffic at all times. Compensation for such surface preparation shall be included in the unit price paid for the Single Chip Seal and Microsurfacing.

G. Before applying seal coat, cover manholes, valve and monument covers, grates, or other exposed facilities located within the area of application, using a plastic or oil resistant construction paper secured by tape of adhesive to the facility being covered. Reference the covered facilities with a sufficient number of control points to relocate the facilities after the application of the seal coat. All traces of plastic, residual emulsion, and chips shall be removed from all manhole covers, drain inlet covers, monument covers, and all other utility covers as quickly as possible, after the application of the seal coat and/or prior to final acceptance of the project.

3.03 RATE OF APPLICATION FOR BID ALTERNATE #2 (SINGLE CAPE SEAL: CHIP SEAL AND MICROSURFACING)

A. Screenings and bituminous for the Single Cape Seal shall be applied at the following rates:

1. First Application of Cape Seal (Single Chip Seal):

a. PMRE (Polymer Modified Rejuvenating Emulsion) Bituminous Binder: applied at a maximum rate of 0.6 gallons per square yard. Engineer may direct Contractor to reduce and/or increase this rate based on field observation during application.

b. Screenings: applied at a maximum rate of 30 pounds per square yard

2. Second Application of Cape Seal (Microsurfacing):

a. A single application of the microsurfacing mixture shall be applied at 20 pounds per square yard. Engineer may direct Contractor to reduce and/or increase this rate based on field observation during application.

B. Contractor shall provide a minimum cure time of 10 days between placement of the surface treatment and microsurfacing and seven (7) days between the placement of the microsurfacing and striping.

C. Microsurfacing shall be uniformly spread on the existing surfacing within the rate specified without spotting, re-handling, or otherwise shifting the mixture.

D. Microsurfacing shall be of the appropriate consistency upon leaving the mixer. A sufficient amount of material shall be carried in all parts of the spreader at all times so that a complete coverage is obtained. Overloading of the spreader box shall be avoided. No lumps or unmixed aggregate shall be permitted. No dry aggregate either spilled from the machine or existing on the road, will be permitted.

E. No streaks, such as those caused by oversized aggregate or broken mix, shall be left in the finished

surface. If excessive streaking develops, the job will be stopped until the contractor proves to the Engineer that the situation has been corrected.

1. Excessive streaking is defined as more than four (4) drag marks greater than 0.5 inch wide and 4.0 inches long, 1.0 inch wide and 3.0 inches long, in any 30 $yd^2$ area. No transverse ripples or longitudinal streaks of 0.25 inch in depth will be permitted, when measured by placing a 10-foot straight edge over the surface.

3.05 EQUIPMENT

A. Traffic Considerations for Microsurfacing:

1. Contractor cannot stop traffic at any time, traffic shall be accommodated at all times for access to private property. After microsurfacing has cured and traffic can drive on the microsurfacing, then Contractor can proceed with microsurfacing past the intersections. Do not allow traffic to drive over microsurfacing for a minimum of two (2) hours.

2. Approved means shall be provided to protect the microsurfacing from damage by traffic until such time that the mixture has cured sufficiently so that the microsurfacing will not adhere to or be picked up by tires of vehicles.

B. Mixing Equipment for Microsurfacing:

1. The machine shall be specifically designed and manufactured to lay microsurfacing. The materials shall be mixed by an automatic sequenced, self-propelled microsurfacing mixing machine, which shall be a continuous flow mixing unit, able to accurately deliver and proportion the aggregate, emulsified asphalt, mineral filler, control setting additive, and water to a revolving multi-blade double shafted mixer and discharge the mixed product on a continuous flow basis. The machine shall have sufficient storage capacity for aggregate, emulsified asphalt, mineral filler, control additive and water to maintain an adequate supply to the proportioning controls.

2. Individual volume or weight controls for proportioning each material to be added to the mix (i.e. aggregate, mineral filler, emulsified asphalt, additive, and water) shall be provided and properly marked. These proportioning devices are used in materials calibration and to determine the material output at any time.

C. Spreading Equipment:

1. The mixture shall be agitated and spread uniformly in the surfacing box by means of twin shafted paddles or spiral augers fixed in the spreader box. A front seal shall be provided to insure no loss of the mixture at the road contact point. The rear seal shall act as a final strike-off and shall be adjustable. The spreader box and rear strike-off shall be so designed and operated that a uniform consistency is achieved to produce a free flow of materials to the rear strike-off. The spreader box shall have suitable means provided to side shift the box to compensate for variations in the pavement geometry.

2. A secondary strike-off shall be provided to improve surface texture. The secondary strike-off shall have the same adjustment as the spreader box.

3.06 EXCESS SCREENINGS

A. All excess screening remaining on the pavement or in the ditches after completion of the chip sealing shall be removed by the Contractor, to the satisfaction of the County. As a minimum, the Contractor shall power broom prior to chip sealing, between chip seal applications, and within three (3) days after application of the double chip seal. Appropriate warning signs shall remain in place until after the power brooming on day three (3). Final broomings shall be performed at least 30, 90, and 180 days after the application of the double chip seal. Appropriate warning signs shall be removed after this final brooming. All left over screenings shall be disposed of offsite by the Contractor.

3.07 FINISHING

A. Crack seal areas shall be protected from traffic until the material has sufficiently cured and does not track. Any damage or loss of material from freshly placed crack seal material shall be replaced by the Contractor.

B. The Contractor shall finish the chip seal with an approved pneumatic roller three (3) times after each chip seal application.

C. A minimum of two (2) self-propelled pneumatic-tired rollers shall be used for the required rolling of the aggregate. The pneumatic-tired rollers shall be in good working condition and shall have all tire pressures checked daily for conformity. The pneumatic-tired rollers shall be a minimum of five (5) tons. The pneumatic-tired rollers shall be operated in such a manner to prevent the dislodging of newly applied aggregate.

D. Areas which cannot be accessed by the mixing machine shall be surfaced using hand squeegees to provide complete and uniform coverage. If necessary, the area to be hand worked shall be lightly dampened prior to mix placement. As much as possible, handwork shall exhibit the same finish as that applied by the spreader box. All handwork shall be completed prior to final surfacing.

E. No excess buildup, uncovered areas, or unsightly appearance shall be permitted on longitudinal or transvers joints. The Contractor shall provide suitable width spreading equipment to produce a minimum number of longitudinal joints throughout the project. When possible, longitudinal joints shall be placed on the lane line. Half passes and odd with passes will be used only in minimum amounts. If half passes are used, they shall not be the last pass of nay paved area. A maximum of three inches shall be allowed for overlap of longitudinal lane line joints. Also the joint shall have no more than ¼ inch difference in elevation when measured by placing a 10-foot straight edge over the joint and measuring the elevation drop off.

F. The mixture shall be uniform and homogeneous after placing on the surfacing and shall not show separation of the emulsion and aggregate after setting. The completed surface shall be of uniform texture and free from ruts, humps, depressions, or irregularities.

G. Repair of Early Distress: If bleeding, raveling, delaminating, rutting, or wash boarding, occurs within 60-days after placing the microsurfacing, the Contractor shall make repairs by any method approved by the Engineer. The Contractor shall not be relieved from maintenance and final contract payment will not be made until repairs have been completed.

3.08 LIMITATIONS

A. Weather: The chip seal shall not be applied if either the pavement or air temperature is below 60 degrees Fahrenheit and falling. No chip seal shall be applied when there is danger that the finish product will freeze within twenty-four (24) hours. The mixture shall not be applied when weather conditions delay opening to traffic beyond a reasonable time.

**PART 4 - MEASUREMENT AND PAYMENT**

A. The payment for crack seal shall be at the Contract lump sum price for "Crack Sealing" and shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work, as shown on the plans, as specified in the Standard Specifications and these Special Provisions, and as directed by the Engineer and no additional compensation will be allowed therefore.

B. The payment for, "Cape Seal: Single Chip Seal and Microsurfacing", shall be at the Contract unit price per square yard for "Polymer Modified Rejuvenating Asphaltic Emulsion", "Single Chip Seal", and "Microsurfacing", and shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work, including the removal of thermoplastic lines, markings, and markers, as shown on the plans, as specified in the Standard Specifications and these Special Provisions, and as directed by the Engineer and no additional compensation will be allowed thereafter.

C. Fog Sealing over pavement patches prior to resurfacing the road will be included in the cost for all asphalt, as part of the resurfacing process, and no additional compensation will be allowed.

D. The payment for the EXCESS SCREENINGS shall be at the Contract unit price per "Clearing and Grubbing and Sweeping" of the entire length of the roads, both lanes for "Excess Screening Sweeping, 3 days, 30 days, 90 days, and 180 days" and shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work, as shown on the plans, as specified in the Standard Specifications and these Special Provisions, and as directed by the Engineer and no additional compensation will be allowed therefore.

## 39 ASPHALT CONCRETE

Hot Mix Asphalt Concrete Specifications are based on the 2010 Caltrans Standard Specifications and supplemented with these Special Provisions.

**PART 1 – GENERAL**

1.01 SUMMARY OF WORK

A. This section applies to all hot mix asphalt (HMA) for the road pavement section.

B. The scope of work includes all site preparation work for the placement of the Hot Mix Asphalt.

C. Hot mix asphalt shall conform to Section 39, "Hot Mix Asphalt," of the 2010 Standard Specifications and these special provisions.

D. Asphalt Concrete (AC) and HMA may be used interchangeably on the plans and specifications.

E. The work to be performed includes the preparation of road surface, application of tack coat, the production, transporting, placing, compacting of the HMA and all other required incidental work.

F. All longitudinal asphalt joints shall occur in the centerline and/or at the edge of the travel lane. No longitudinal asphalt joints are allowed within the travel lane except as approved by the County's Construction Inspector where lane widths vary or other special cases exist.

G. The work to be performed includes the removal and disposal of existing asphalt concrete (in the area specified for a digout and/or grind), the application of tack coat, the production, transportation, placing, compaction of HMA, and all other required incidental work.

1. Any changes to the digout limits, as indicated on the Plans and in the field, shall be determined by the Engineer.

2. The pavement areas designated as a digout or grind, shall be removed to a uniform depth of three (3) inches, four (4) inches, or six (6) inches, as specified on the Plans, and may be removed either by cold planing or by full depth sawcutting and mechanical removal. Sawcutting is not necessary if the pavement is removed by cold planing. Any broken or damaged pavement edges shall be re-cut prior to paving. All removed material shall be cleared from the site.

3. The Contractor shall schedule the digout and/or grind operations so that all excavated areas shall be completely paved at the end of each work day.

1.02 SUBMITTALS

A. The Contractor shall submit HMA source and mix design prepared by a certified laboratory to the Engineer for review and approval.

B. The Contractor shall submit their QA/QC plan for approval by the County, including testing requirements.

C. Accompanying mix design, submit materials certificates signed by material producer and Contractor, certifying that each material item complies with or exceeds specified requirements.

D. The Contractor shall submit tickets for each load of asphalt concrete.

E. Submit certificate of compliance for tack coat per Section 94, "Asphaltic Emulsions," of the

Standard Specifications.

**PART 2 – PRODUCTS**

2.01 DESCRIPTION

A. HMA for the road pavement section shall be Type A, placed in lifts not exceeding three (3) inches, with all lifts consisting of 3/4 inch asphalt mix. HMA for the one (1) inch levelling course shall be Type A, consisting of 1/2 inch asphalt mix.

B. Asphalt Binder shall be Steam-refined paving asphalt Grade PG 64-16 per Section 92, "Asphalts Binders" of the Standard Specifications.

C. Tack Coat shall be applied to the finished surfaces of the aggregate base prior to placement of the HMA and between HMA layers per Section 39-2.01B(10), "Tack Coat". Tack Coat shall be a slow setting asphalt emulsion SS1h per Section 94, "Asphaltic Emulsions," of the Standard Specifications.

D. Raw aggregate may only contain very limited "soft" or "highly absorptive" material. The County may sample the raw aggregate on the days of paving to perform LA Rattler tests and to determine absorption ratios. The hot plant operator(s) shall assist the County in obtaining belt samples immediately prior to asphalt batching at the County's sole discretion/scheduling. If an absorption ratio of a coarse aggregate sample is greater than 4%, the asphalt placed on that day shall be rejected, and removed and replaced at no cost to County. LA Rattler test results and acceptance criteria shall be per the Standard Specifications. Contractor shall ensure its subcontracts with material suppliers allow the County to enter the facilities and obtain samples in accordance with this paragraph.

E. Unacceptable Asphalt Concrete Containing Soft or Highly Absorptive Material; Liquidated Damages:

1. "Soft or highly absorptive" material is defined as material that is generally whitish or light in color (color can vary) and breaks into a powder easily when routed in a dry state with hand tools such as a screw driver and may exhibit clay like characteristics when wet.

2. An unacceptable concentration of material is defined as any location larger than 100 square feet (or locations) where greater than a .096% concentration by area of soft or highly absorptive material occurs.

   a. Measurement of the concentration of soft or highly absorptive material may be taken by County at any time and within any area of the work at County's sole discretion.

   b. Discovery of any area of paving work that exceeds the limit of soft or highly absorptive material described in this subsection (2) is defective work which shall be addressed by the Contractor in accordance with subsection (3) below if County notifies Contractor at any time prior to one (1) year from the date of recording of a Notice of Completion for the work, or one (1) year from the date the road is open for public use if no Notice of Completion is recorded.

3. Soft or highly absorptive material can substantially reduce the useful life of the roadway, the extent of which is difficult to determine accurately. For each area, as determined by the County

pursuant to subsection (2), that exceeds the maximum allowable amount of soft or highly absorptive material, the Contractor shall pay as liquidated damages, and not as a penalty, the amount calculated at one-half of the Contractor's bid item prices to replace that specified area. Contractor shall pay the County the liquidated damages determined in accordance with this section within sixty (60) days of written demand by the County. If a court determines this calculation of liquidated damages is unenforceable for any reason, the Contractor shall pay the County the actual cost incurred by the County to remove and repave the section of the roadway that exceeds the maximum allowable amount of soft or highly absorptive material.

a. This subsection (3) shall not apply to any area, as determined by the County pursuant to subsection (2), where a concentration of more than .096% by area of soft or highly absorptive material resides in an area of less than 100 square feet, or to any work, other than an area determined by the County pursuant to subsection (2), that contains .096% or less of soft or highly absorptive material.

4. Nothing in this paragraph E shall preclude County from seeking any or all legal and/or equitable remedies upon discovery of soft or highly absorptive material after the one (1) year period specified in subsection (2), or in the event that Contractor fails to tender the liquidated damages specified in subsection (3).

F. Liquid anti-stripping agent (LAS) shall be added to the asphalt binder at a rate of 0.5% by weight of asphalt binder. The LAS shall be AD-here LOF 65-00 or equivalent, and shall be stored, measured, and blended with the asphalt binder in accordance with the anti-stripping agent manufacturer's recommended practice. The LAS can be added at the asphalt plant or at the refinery. When added at the asphalt plant, the equipment shall indicate and record the amount of LAS added. If added at the refinery, the shipping ticket from the refinery shall certify the type and amount of LAS added.

G. In addition to the quality requirements in Section 39-2.02, "Aggregate," of the Standard Specifications, the aggregate for all types of asphalt concrete shall achieve a minimum Durability Index of 35 for contract compliance. The aggregate shall not be treated with lime, cement or other chemical material before the Durability Index test is performed.

H. The eighth paragraph of Section 39-2.02, "Aggregate," of the Standard Specifications is amended to read: No single grading test shall represent more than one day's paving.

I. The last paragraph in Section 39-2.02, "Aggregate," of the Standard Specifications is amended to read: "The combined aggregate shall also conform to the following quality requirements when mixed with an amount of asphalt determined to give four (4) percent air voids by the job mix formula in accordance with the section entitled "Job Mix Formula" of these Special Provisions."

J. The area to which paint binder (tack coat) has been applied shall be closed to public traffic. Care shall be taken to avoid tracking binder material onto existing pavement surfaces beyond the limits of construction.

**PART 3 – EXECUTION**

3.01 GENERAL

A. Placement of HMA shall be in accordance with Section 39, "Asphalt Concrete" of the Standard

Specifications and these Special Provisions.

B. A tack coat treatment shall be applied to finished surfaces of aggregate and concrete surfaces where HMA will meet and shall be applied per Section 39-2.01C(3)(f), "Tack Coat" of the Standard Specifications.

C. Total HMA thickness shall be as specified on the Plans.

3.02 TAPERED NOTCHED WEDGE

A. Section 39-2.01C(4)(b) of the Standard Specifications shall be removed.

3.03 SHOULDERS, MEDIANS, AND OTHER ROADWAY CONNECTIONS

A. Add the following to Section 37-2.01C(7) of the Standard Specifications:

1. Pave shoulders and median borders adjacent to the lane before opening a lane to traffic.
2. Place shoulder conform tapers concurrently with the adjacent lane's paving.
3. Place additional HMA along the pavement's edge to conform to road connections and driveways. Hand rake, if necessary, and compact the additional HMA to form a smooth conform taper.

**PART 4 – MEASUREMENT AND PAYMENT**

A. The contract unit price for ton of "HMA TYPE A (1/2" Aggregate)" and "HMA TYPE A (3/4" Aggregate)" shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for performing all the work involved (including removing existing asphalt and applying tack coat) as shown on the Plans and as specified in these Technical Specifications, the Standard Specifications, and as directed by the Engineer and no additional compensation will be allowed.

B. Tack Coat, above and below the asphalt patches will be included in the cost of "HMA TYPE A (1/2" Aggregate)" and "HMA TYPE A (3/4" Aggregate)" and no additional compensation will be allowed.

## 51 CONCRETE PATCHING

### PART 1 – GENERAL

1.01 SUMMARY OF WORK

A. This section applies to concrete used for the following applications:

1. Concrete patching of pothole on Old Sonoma Road.

B. Concrete patching shall conform to Section 51, "Concrete Structures" and Section 51-7, "Minor Structures" of the Standard Specifications and these Special Provisions.

### PART 2 – PRODUCTS

2.01 DESCRIPTION

A. Materials shall be GST Elephant Armor DOT Bag Gray Cementitious Repair Mortar or approved equal.

### PART 3 – EXECUTION

3.01 CONSTRUCTION

A. Exposed rebar shall be wire brushed and epoxy coat prior to patching.

B. Concrete shall be cleaned to insure adhesive prior to patching.

C. Follow manufactures recommendation.

### PART 4- MEASUREMENT AND PAYMENT

A. The contract unit price per each for "Concrete patching" shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for performing all the work involved as shown on the Plans and as specified in these Technical Specifications, the Standard Specifications, and as directed by the Engineer and no additional compensation will be allowed.

## 77 LOCAL INFRASTRUCTURE - MONUMENTS

### PART 1 – GENERAL

1.01 SUMMARY OF WORK

A. This section applies to the recovery of existing monuments.

B. The Contractor shall provide all materials, equipment, and labor necessary to adjust and recover monuments to existing grade. Approximate locations of the monuments are shown on the Plans.

### PART 2 – PRODUCTS

2.01 DESCRIPTION

A. All monument material and workmanship shall conform to the Plans, these Special Provisions, and the Napa County Road and Street Standards.

B. Materials shall conform to Section 51-1.02, "Materials" of the Standard Specifications and these Special Provisions.

C. Concrete for the monument shall have a compressive strength of 4,000 psi or 5,000 psi at 28 days and a slope of five (5) inches ± one (1) inch, per the Monument Detail on the Plans. The monument is not a structural member of the pavement surface.

### PART 3 – EXECUTION

3.01 CONSTRUCTION

A. Construction shall verify all locations, dimensions, and elevations of existing facilities, and verify all quantities prior to ordering and installing monuments.

B. Construction shall comply with Detail 7, "Survey Monument" of the Road and Street Standards.

C. The Contractor will remove any identified monuments whether they are brass pins, iron pipes, nails and tags and replace them with a survey monument per County Standard Plan D7. The Contractor shall survey the monument before the paving work, file a preliminary "Corner Record Application" with the County Surveyor before construction begins, and file a "Corner Record Application" with the County Surveyor before construction is complete.

D. The Contractor shall set survey monuments per County Standard Plan D7 in locations shown on the Plans. The contractor's surveyor shall file a "Record of Survey" for the new monuments.

E. For each monument found a monument recovery shall be performed. The monument recovery shall include installing a new monument according to the details in the plan set and filing a post record survey with the county.

F. Other existing survey monuments encountered shall be protected, treated, and recorded by a licensed surveyor, per plan. Existing survey benchmarks are assumed to be set in existing wells, or outside the limits of paving and grinding, therefore, shall be undisturbed during construction, and no pre- or post- corner record required. Verification of benchmark location shall be by a licensed surveyor.

G. Attachment "B" is provided in these Special Provisions for existing information related to

monuments and benchmarks.

H. No vehicles, construction equipment, materials or facilities shall be parked, stockpiled or located along the right of way or adjacent private property. No storage or dumping of oil, gasoline, chemicals or other substances potentially harmful to trees shall occur within the right of way or adjacent private property.

**PART 4- MEASUREMENT AND PAYMENT**

A. Full compensation for **"Monument Search"** shall include full compensation for furnishing all labor, materials, tools, equipment, changeable message signs, and incidentals and for performing all the work involved as shown on the plans and as specified in these Special Provisions, the Standard Specifications, and as directed by the Engineer and no additional compensation will be allowed.

B. Full compensation for **"Monument Recovery"** shall include full compensation for furnishing all labor, materials, tools, equipment, changeable message signs, and incidentals and for performing all the work involved as shown on the plans and as specified in these Special Provisions, the Standard Specifications, and as directed by the Engineer and no additional compensation will be allowed.

## 82 SIGNS AND MARKERS

### PART 1 – GENERAL

1.01 SUMMARY OF WORK

A. Work shall conform to Section 82, "Signs and Markers" of the Standard Specifications.

B. This section shall apply to the Measure T project signage.

1.02 SUBMITTALS

A. Product submittals shall be made to the Engineer for review and approval.

B. Submit certificates of compliance in accordance with Section 82-2.01C, "Submittals" of the Standard Specifications.

### PART 2 – PRODUCTS

2.01 DESCRIPTION

A. Sign panels shall be in accordance with Section 82-2.02, "Materials" of the Standard Specifications. All signs are to be sheeted with ElectroCut 3M Diamond Grade DG3, Type IX, Reflective Sheeting material. All warning signs or any signs that are yellow, shall be Fluorescent Yellow 3M 4081.

B. Sign posts shall be in accordance with Section 82-3.02, "Materials" of the Standard Specifications.

C. Posts shall be 2-inch-by-2-inch Telespar, or equal, with 30-inch deep double walled or solid anchors that extend less than three (3) inches above the ground level. The Contractor shall excavate six-inch holes, place the anchor, and fill the hole with concrete or fence post mix. The Contractor shall attach the posts to anchors with two (2) corner bolts.

D. Posts shall be 2.5-inch-by-2.5-inch Telespar, or equal, with 36-inch deep double walled or solid anchors that extend less than three (3) inches above the ground level. The Contractor shall excavate six-inch holes, place the anchor, and fill the hole with concrete or fence post mix. The Contractor shall attach the posts to anchors with two (2) corner bolts.

E. Materials shall conform to Section 82-5.02, "Materials" of the Standard Specifications.

F. Materials for the Measure T signs shall conform to Section 6, "Control of Materials" of these Special Provisions.

G. Two (2) Measure T signs shall be provided for the project. Signage shall be posted in the eastbound and westbound direction at locations approved by the Engineer.

H. Refer to Section 16, "Temporary Facilities" in these Special Provisions for more information regarding project signs.

### PART 3 – EXECUTION

3.01 CONSTRUCTION

A. Sign panels shall be installed in accordance with Section 82-2.03, "Construction" of the Standard Specifications. The Contractor shall attach signs to posts/supports with galvanized 5/16" carriage bolts and attach each 5/16" carriage bolt with a flat washer, lock washer, and nut. The Contractor

shall install diamond shaped signs 30" x 30" or larger with one (1) back (wind) brace attached to the support on the back of the sign. The Contractor shall install diamond shaped signs 36" or longer in length and/or height with two (2) back (wind) braces attached to the support on the back of the sign (top and bottom), with the exception of 30" street name signs. The Contractor shall install signs at the height specified in the CAMUTCD.

B. Sign posts shall be installed in accordance with Section 82-3.03, "Construction" of the Standard Specifications.

**PART 4- MEASUREMENT AND PAYMENT**

A. The contract unit price per "Project Sign" shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for performing all the work involved as shown on the Plans and as specified in these Technical Specifications, the Standard Specifications, and as directed by the Engineer and no additional compensation will be allowed.

## 84 MARKINGS

### PART 1 – GENERAL

1.01 SUMMARY OF WORK

A. This section shall apply to all pavement markings and striping, including removal of existing markings, where required.

B. Paint Traffic Striping and Pavement Markings shall conform to the requirements of Section 84-2, "Traffic Stripes and Pavement Markings" of the Standard Specifications.

1.02 SUBMITTALS

B. Submittals shall be per Section 84-2.01C, "Submittals" of the Standard Specifications.

### PART 2 – PRODUCTS

2.01 DESCRIPTION

A. All pavement markings and striping shall be **paint** and must comply with Section 84-2.02,

1. Pavement Markers and Traffic Lines – Typical Details:
    a. Standard Plan A20A – Detail 21: No Passing Zones - Two Directions
    b. Standard Plan A20A – Detail 22: No Passing Zones - Two Directions
    c. Standard Plan A20A – Detail 5: - Centerline
    d. Standard Plan A20A – Detail 18:– Centerline
    e. Standard Plan A20A – Detail 27B: Right Edgeline (Fog Line)
    f. Standard Plan A20D – Detail 38A: Channelizing Line
    g. Standard Plan A20D – Detail 39: Bike Lane Line
    h. Standard Plan A20D – Detail 39: Bike Lane Line
2. Pavement Markings – Words, Limit, and Yield Lines:
    a. Standard Plan A24E – Limit Line (Stop Line)
    a. Standard Plan A24A – Type VI Arrow
    b. Standard Plan A24B – Type II (R) Arrow
    c. Standard Plan A24B – Type III (L) Arrow
    d. Standard Plan A24F – Continental: Higher Visibility Crosswalks

B. All pavement markings and striping shall be **thermoplastic** and must comply with Section 84-2.02,

1. Pavement Markings – Words, Limit, and Yield Lines:
    a. Standard Plan A24C – SHARED ROADWAY BICYCLE Stencil
    b. Standard Plan A24C – "BIKE LANE SYMBOL WITH PERSON" Stencil with A24A Bike

Lane Arrow

c. Standard Plan A24F – Continental: Higher Visibility Crosswalks

**PART 3 – EXECUTION**

3.01 PLACEMENT

A. Placement shall be in accordance with Section 84-2.03, "Construction" of the Standard Specifications.

B. This work shall include installing paint stripes, arrows, lane lines, and other existing pavement markings affected by project construction as directed by the Construction Manager.

C. The completed stripes shall have clean and well-defined edges. The maximum deviation from the designated position of the strip shall not exceed 1/2-inch in any 100-foot length of stripe, including gaps. Roadway markings shall conform to the shapes and dimensions of the standard markings, as designated by the State of California Department of Transportation Standard Specifications as stated above.

D. Surfaces which are to receive thermoplastic shall be thoroughly cleaned, free from loose materials and dry, and such areas shall be prepared by the Contractor to the satisfaction of the Project Inspector.

E. It shall be the Contractors responsibility to measure and mark existing striping, pavement markings and raised pavement markers prior to and during the street repair work. Striping layout markings shall be laid out in advance of final striping. All layout markings shall be in place prior to final striping for review/adjustment. Striping layout markings shall be to the satisfaction of the Engineer. The Contractor shall provide a one (1) week time period for review of layout markings. Striping changes shall be approved by the Engineer.

F. Any layout markings that remain after the final striping shall be "blacked-out" using paint to the satisfaction of the Engineer. This work shall be considered as fully compensated in the related items of work and no additional compensation will be made thereof.

G. Any damage to the new striping due to the failure of the Contractor to protect his work shall be repaired at no additional cost to the County.

H. Contractor shall install plastic non-reflective pavement markers per Section 85-1.02B(2) of the Standard Specifications.

I. Permanent striping and markings shall be installed no sooner than ten (10) calendar days and no later than fifteen (15) calendar days after HMA or Double Chip Seal is placed. Temporary markings shall be installed the same day that the original markings are removed or destroyed.

**PART 4- MEASUREMENT AND PAYMENT**

A. The contract unit price per lineal foot of "Pavement Markers and Traffic Lines – Typical Details"

as listed under 2.01.B.1, 2.01.C1, and 2.01.D.1 shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for performing all the work involved as shown on the Plans and as specified in these Technical Specifications, the Standard Specifications, and as directed by the Engineer and no additional compensation will be allowed.

B. The contract unit price per lineal foot of "Pavement Markings – Words, Limit, and Yield Lines" as listed under 2.01.B.2 and 2.01.C.3 shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for performing all the work involved as shown on the Plans and as specified in these Technical Specifications, the Standard Specifications, and as directed by the Engineer and no additional compensation will be allowed.

C. The contract unit price for each "Pavement Markings – Arrows and Symbols" as listed under 2.01.C.2 shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for performing all the work involved as shown on the Plans and as specified in these Technical Specifications, the Standard Specifications, and as directed by the Engineer and no additional compensation will be allowed.

D. The contract unit price per lineal foot of "Pavement Markings – Crosswalks" as listed under 2.01.C.4 shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for performing all the work involved as shown on the Plans and as specified in these Technical Specifications, the Standard Specifications, and as directed by the Engineer and no additional compensation will be allowed.

## 96 GEOSYNTHETICS

### PART 1 – GENERAL

1.01 SUMMARY OF WORK

A. Old Sonoma and Buhman will receive a paving fabric where identified on the roadway. Deer Park for Bid Alternate #4 will have a paving fabric over the entire road.

B. This section shall apply to the application of the paving fabric as specified on the Plans. Geosynthetics shall conform to the requirements of the Section 96 of the Standard Specifications and these Special Provisions.

1.02 SUBMITTALS

A. Submittals shall be made for the review and approval of the Engineer and must conform to Section 96-1.01C, "Submittals" of the Standard Specifications.

### PART 2 – PRODUCTS

2.01 DESCRIPTION

A. For Old Sonoma and Buhman materials shall conform to Section 96-1.02L, "Paving Grid" of the Standard Specifications. If there is a discrepancy between the recommended paving fabric "Mirafi MPG-100 Geo-Textile Interlayer" product specifications and the Standard Specifications, the product specifications shall take precedence and recommendations shall be adhered to.

B. Deer Park Bid Alternate #2 materials shall conform to Section 96-1.02J, "Paving Fabric" of the Standard Specifications. If there is a discrepancy between the recommended paving fabric Mirafi® MPV500 is a heat-set polypropylene nonwoven geotextile product specifications and the Standard Specifications, the product specifications shall take precedence and recommendations shall be adhered to. Paving fabric must be recyclable.

### PART 3 – EXECUTION

3.01 CONSTRUCTION

A. Construction shall conform to the "Installation Guidelines for Tencate Mirafi ® MPG Composite Paving Grids" (or approved alternative grid type) and the Plans. Alternative paving fabrics that meet or exceed the minimum requirements of Mirafi MPG – 100 will be subject to review and acceptance by the Engineer.

B. Areas on which the geosynthetic is to be placed shall have a uniform slope, be reasonably smooth, free from mounds and windrows, and free of any debris which could damage the material.

C. The areas to be treated shall be as designated on the Plans. The pavement surface shall be broomed clean immediately prior to beginning the geotextile treatment.

D. The geosynthetic will be applied to the one (1) inch levelling course as part of the base bid. Contractor shall apply asphalt binder (refer to Section 39 "Asphalt Concrete" for more information) along the full width, applying a continuous wet surface, with no gaps to provide a surface for the geosynthetic to bond to.

1. Asphalt binder shall be applied an additional four (4) inches longitudinally and transversely when geosynthetic has an overlap.
2. Asphalt binder shall be applied to the pavement surface at the rate of approximately 0.30 gallons per square yard. The exact application rate shall be as recommended by the geotextile manufacturer, and at a temperature of 300 to 350 degrees Fahrenheit. Paving geotextile shall be applied, in accordance with the manufacturer's recommendations, immediately after the application of the asphalt binder.
3. Traffic shall be kept off all newly placed binder and geotextile material until the asphalt surface has been placed.
4. The Contractor shall make arrangements with the geotextile supplier to have a technician, skilled in this paving geotextile work, present at the project site during this work to give any technical assistance needed.

E. Any wrinkles that occur during installation, one (1) inch and larger, shall be slit and lapped in the direction of paving and pressed down into the asphalt binder.

F. Longitudinal overlaps shall not exceed four (4) inches. Transverse overlaps in the direction of paving can range from four (4) inches to six (6). All overlapping material shall be tacked together with asphalt binder.

G. Geosynthetics damaged or displaced before or during the placement of overlying layers shall be replaced or repaired in accordance with the requirements of this section and to the satisfaction of the Engineer, at the Contractor's expense.

**PART 4- MEASUREMENT AND PAYMENT**

A. The contract unit price per square yard of "Paving Grid" shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for performing all the work involved as shown on the Plans (including application of asphalt binder) and as specified in these Technical Specifications, the Standard Specifications, and as directed by the Engineer and no additional compensation will be allowed.

B. The contract unit price per square yard of "Paving Fabric" shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for performing all the work involved as shown on the Plans (including application of asphalt binder) and as specified in these Technical Specifications, the Standard Specifications, and as directed by the Engineer and no additional compensation will be allowed.

## 98 CULVERT

**PART 1 – GENERAL**

1.03 SUMMARY OF WORK

A. Replace a culvert on Old Sonoma Road connecting between two drainage structures. The existing culvert is a 30’ corrugated steel pipe buried four to seven feet deep.

1.04 SUBMITTALS

A. Submittals shall be made for the review and approval of the Engineer and must conform to Section 96-1.01C, “Submittals” of the Standard Specifications.

**PART 2 – PRODUCTS**

2.02 DESCRIPTION

A. Corrugated galvanized steel pipe shall conform to section 66-1.02 of the standard specifications.

B. Slurry back fill shall conform to section 19-3.02E of the standard specifications.

C. Asphalt shall conform to section 39 of these specifications.

D. Seals shall conform to section 37 of these specifications.

**PART 3 – EXECUTION**

3.02 CONSTRUCTION

A. Construction shall conform to section 61 of the standard specifications.

B. Back fill shall be a slurry.

C. Existing Asphalt shall be saw cut.

D. Existing utilities shall be protected. A water main crosses the culvert.

**PART 4- MEASUREMENT AND PAYMENT**

A. The contract lump sum price for “Replace Culvert” shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for performing all the work involved as shown on the Plans (including application of asphalt binder) and as specified in these Technical Specifications, the Standard Specifications, and as directed by the Engineer and no additional compensation will be allowed. HMAC and Cape Seal shall be paid by their perspective bid items.

**ATTACHMENT 'A' – SUBMITTAL LIST**

THE REQUIRED SUBMITTALS FOR THE PROJECT SHALL INCLUDE, BUT MAY NOT BE LIMITED TO, THE FOLLOWING:

1. PROJECT SCHEDULE (at Pre-con)
2. EMERGENCY CONTACT LIST (at Pre-con)
3. TRAFFIC CONTROL PLAN (at Pre-con)
4. SCHEDULE OF VALUE FOR LUMP SUM ITEMS (at Pre-con)
5. SCHEDULE OF SUBMITTALS (at Pre-con)
6. UPDATED SUBMITTAL LIST AND PROGRESS SCHEDULE (at Progress Meetings)
7. VERIFICATION OF SURVEY MONUMENTS AND BENCHMARKS BY A LICENSED SURVEYOR
8. PRE-CONSTRUCTION CORNER RECORD FOR SURVEY MONUMENTS
9. PROJECT SIGNS
10. BEST MANAGEMENT PRACTICE PLAN
11. MATERIAL ORDER
12. HOT MIX ASPHALT SOURCE AND MIX DESIGN
13. CQS-1H FOG SEAL EMULSION
14. CRACK SEAL MATERIALS
15. SINGLE CHIP SEAL SOURCE AND MIX DESIGN
16. MICROSURFACING SOURCE AND MIX DESIGN
17. POLYMER MODIFIED REJUVENATING EMULSION
18. CONCRETE MIX DESIGN
19. PAINT TRAFFIC STRIPING
20. GEOTEXTILE MATERIAL FOR PAVING FABRIC
21. POST-CONSTRUCTION CORNER RECORD FOR SURVEY MONUMENTS
22. CULVERT PIPE MATERIAL
23. SLURRY
24. WARRANTIES
25. RECORD DRAWINGS

**ATTACHMENT 'B' – MONUMENTS AND BENCHMARK LOCATION DETAILS**