

CITY OF VISALIA

ENGINEERING STANDARD SPECIFICATION AMENDMENTS

ENGINEERING AND BUILDING DEPARTMENT
ENGINEERING DIVISION



UPDATED: January 16, 2025

**PREPARED BY:
CITY OF VISALIA
ENGINEERING DIVISION
315 E. ACEQUIA AVE.
VISALIA, CA 93291**

CITY OF VISALIA

ENGINEERING STANDARD SPECIFICATION AMENDMENTS

ENGINEERING AND BUILDING DEPARTMENT ENGINEERING DIVISION

These Amendments will be automatically incorporated as part of the whole Engineering Standard Specifications and are approved by the City Engineer. The Engineering Standard Specifications and Engineering Improvement Standards will be considered for updates as practices and materials change, and these updates will occur on an as needed basis.



Approved by: _____

Chris Crawford

City Engineer

R.C.E. 71192

JANUARY 16, 2025

**PREPARED BY:
CITY OF VISALIA
ENGINEERING DIVISION
315 E. ACEQUIA AVE.
VISALIA, CA 93291**

STANDARD SPECIFICATION AMENDMENTS

All related Standard Specification Sections – Soil Compaction

Date: 12/30/13

The following is a general requirement that will be incorporated into the Standard Specifications and it is related to a number of different sections:

“All soil that is processed and compacted to facilitate construction improvements including, but not limited to, roadway construction, trench and structure excavation and backfill, embankment construction, and other miscellaneous improvements shall have uniform moisture content and compaction meeting the requirements of the Standard Specifications.”

Section 1-1 – General

Date: 12/30/13

Two paragraphs shall be added to the end of this section that read as follows:

“The recommendations, requirements, and details listed in the City of Visalia Engineering Standard Specifications and the City of Visalia Engineering Design & Improvement Standards shall be considered minimum requirements only. The Engineer of Record/Design Engineer shall be responsible for providing the appropriate requirements and details necessary for a full and complete project.”

“All improvements shall be constructed in accordance with the Plans, Standard Specifications, Construction Specifications, and Contract Documents. All improvements shall be constructed in accordance with generally accepted engineering and construction practices.”

Section 1-3.10 – Certified Testing Laboratory

Date: 12/30/13

There shall be a paragraph added to the end of this section that reads as follows:

“A Certified Testing Laboratory may become unapproved for a period of time as determined by the City Engineer or their designated representative and will not be allowed to perform testing within the existing or future street right of way or other City of Visalia property for any number of reasons, including, but not limited to the following:

1. Failure of the laboratory to provide staff with the professional knowledge and skills to perform the work.
2. Failure to provide test results in accordance with the City’s requirements.
3. Failure to respond to requests or provide answers to City staff within 3 working days.
4. Failure to follow the City’s testing and sampling procedures.
5. Furnishing inaccurate test results.

Section 6-8 – Samples and Tests

Date: 12/30/13

The first paragraph of this section will be modified to read as follows:

“For Non-Public projects the permittee, individual, group, or entity constructing the improvements will be responsible for retaining a Certified Testing Laboratory to complete all sampling, materials tests, and compaction testing required by the City of Visalia. Testing reports shall be submitted to the City for acceptance of all improvements. Reports shall be formatted in a manner that defines the limits of testing, location of test with street stationing references, materials tested, and passing or failing results in a manner that is deemed satisfactory by the City. A final compiled compaction and materials testing report summary shall be completed for each project and 2 hard copies of the report and 1 PDF shall be furnished to the City Engineer prior to the project being accepted by the City Council. The City Engineer may request and the testing laboratory shall provide all backup testing data, calculations, and field reports that support the testing results. This said permittee, individual, group, or entity will be responsible for all costs associated with retaining said testing laboratory and all costs to complete the required testing.”

After the first paragraph a second paragraph shall be added that reads as follows:

“Compaction and material test results shall be reviewed and accepted by the City Engineer prior to the installation of successive improvements. For street sections each layer in the street section must be tested and accepted prior to placing the next layer in the section. Subbase and Aggregate Base test results must be reviewed and accepted prior to the placement of HMA. For Non-Public projects test results for AS and AB shall be furnished to the City within 7 working days of placement. For Non-Public projects test results for HMA shall be furnished to the City within 14 working days of placement. Failure to meet these requirements may result in the City issuing a Cease Work Order on the project or taking other actions until the test results are received and accepted.”

Section 19-3.2 - Trench and Structure Excavation

Date: 12/30/13

This section shall be amended as follows:

The seventh paragraph in this section that reads as follows shall be modified:

“All pipe with an inner diameter greater than six inches (6”) shall have a prepared and compacted bedding except as follows: bedding preparation is not required for precast rubber gasket reinforced concrete pipe with an inner diameter of twenty-four inches (24”) or less where firm and unyielding native soil is present at the bottom of the trench. Trenches shall be over-excavated a minimum of 6 inches below the grade established for the bottom of the pipe and then backfilled to the design pipe grade with granular non-expansive native material meeting the requirements of these specifications and thoroughly compacted to a minimum of 92 percent relative compaction. Trenches shall be uniformly graded and prepared to provide a firm and uniform bearing for the entire length of the barrel of the pipe to be placed therein. Coupling or bell holes are required for all trenches to receive pipes or conduits with couplings or bells, and shall be excavated at each location where pipes are to be joined. Coupling or bell holes shall be of sufficient and of adequate size to permit ease in making the joint and so the coupling or bell does not rest on the bottom of the hole excavated therefor. Except for pipe bells and couplings, any portion of the trench excavated below the approved grade shall be corrected and brought up to grade with approved material and thoroughly compacted.”

The paragraph shall be modified to read as follows:

“In all areas with suitable soils the barrel of the pipe shall be placed on firm and unyielding native soil at the bottom of the trench. Bedding preparation is not required unless it is specified on the Plans, Specifications, or as required by the City Engineer. Trenches shall be uniformly graded and prepared to provide a firm and uniform bearing for the entire length of the barrel of the pipe to be placed therein. Coupling or bell holes are required for all trenches to receive pipes or conduits with couplings or bells, and shall be excavated at each location where pipes are to be joined. Coupling or bell holes shall be of sufficient and of adequate size to permit ease in making the joint and so the coupling or bell does not rest on the bottom of the hole excavated therefor. Except for pipe bells and couplings, any portion of the trench excavated below the approved grade shall be corrected and brought up to grade with approved material and thoroughly compacted as approved by the City Engineer.”

Section 19-3.3.A.1 - Initial Backfill, Precast Pipe, Conduit

Date: 12/30/13

The following addition shall be made to this section:

“All initial backfill shall be uniformly moisture conditioned prior to placing the backfill in the trench.”

Section 45-23 - Traffic Signal Street Name Signs

Date: 12/30/13

This section shall be amended as follows:

The last two sentences of the section that read as follows shall be deleted: “City will supply street name sign and mounting bracket. Contractor is to provide strapping and strapping hardware.”

The deleted sentences will be replaced with the following sentence: “The Contractor shall supply the street name signs, mounting brackets, and all strapping and other hardware required for a complete sign installation.”

Section 38 - Concrete Curbs, Sidewalks, Surface Improvements

Date: 3/05/14

The following additions shall be made to this section:

“The Contractor shall provide one or more portable vibrating machines to be used on concrete improvements that contain reinforcing. Vibrating machines shall be used in accordance with current industry standard practices to properly consolidate concrete around reinforcing.

Concrete shall be thoroughly consolidated in a manner that will encase the reinforcement and inserts, fill forms, and produce a surface of uniform texture free of rock pockets and excessive voids. The Contractor shall adequately consolidate all concrete improvements whether the improvements contain rebar or not.

Concrete shall not be permitted to free fall more than 6 feet without the use of adjustable length pipes or tubes or other suitable conveyance unless otherwise approved by the City Engineer. Conveyance methods shall adequately transport the concrete without causing segregation in the mix.

Water testing shall be performed on all curb and gutters, valley gutters, cross gutters, and aprons. All concrete ponding that is in excess of ten square feet, or that holds more than one quarter (1/4) inch of water, or that migrates to the adjacent pavement after being flooded one half (1/2) hour before shall be removed and replaced at the Contractor’s expense.”

Applies to all related Standard Specification Sections – Concrete Placement/Installation

Date: 3/05/14

The following are general requirements that will be incorporated into the Standard Specifications and they will be applied to all sections that address installation of concrete improvements:

“The Contractor shall provide one or more portable vibrating machines to be used on concrete improvements that contain reinforcing. Vibrating machines shall be used in accordance with current industry standard practices to properly consolidate concrete around reinforcing.

Concrete shall be thoroughly consolidated in a manner that will encase the reinforcement and inserts, fill forms, and produce a surface of uniform texture free of rock pockets and excessive voids. The Contractor shall adequately consolidate all concrete improvements whether the improvements contain rebar or not.

Concrete shall not be permitted to free fall more than 6 feet without the use of adjustable length pipes or tubes or other suitable conveyance unless otherwise approved by the City Engineer. Conveyance methods shall adequately transport the concrete without causing segregation in the mix.”

Section 1-3 – Definitions and Terms

Date: 3/05/14

The following addition shall be made to this section:

1-3.71 Responsible Bidder

A responsible Bidder is a Bidder who has the capability in all respects, to perform fully the requirements of the Contract Documents and the moral and business integrity and reliability that will assure good faith performance. In determining responsibility, the following criteria will be considered: (i) the ability,

capacity and skill of the Bidder to perform the Work of the Contract Documents; (ii) whether the Bidder can perform the Work promptly and within the time specified, without delay or interference; (iii) the character, integrity, reputation, judgment, experience and efficiency of the Bidder; (iv) the quality of performance of the Bidder on previous contracts, by way of example only, the following information will be considered: (a) the administrative, consultant or other cost overruns incurred by the City on previous contracts with the Bidder; (b) the Bidder's compliance record with contract document conditions and requirements on other projects; (c) the submittal by the Bidder of excessive and/or unsubstantiated extra cost proposals and claims on other projects; (d) the Bidder's record for completion of work within the contract time and the Bidder's compliance with the scheduling and coordination requirements on other projects; (e) the Bidder's demonstrated cooperation with the City and other contractors on previous contracts; (f) whether the work performed and materials furnished on previous contracts was in accordance with the Contract Documents; (g) whether stop notices were issued on other projects; (v) the previous and existing compliance by the Bidder with laws and ordinances relating to contracts; (vi) the sufficiency of the financial resources and ability of the Bidder to perform the work of the Contract Documents; (vii) the quality, availability and adaptability of the goods or services to the particular use required; (viii) the ability of the Bidder to provide future maintenance and service for the warranty period of the Contract; (ix) whether the Bidder is in arrears on debt or contract or is a defaulter on any surety bond; (x) whether the Bidder has accomplished similar construction work in a safe manner as reflected by the Worker's Compensation Experience Modification Rating of less than 1.25; (xi) and such other information as may be secured by the City having a bearing on the decision to award the Contract, to include without limitation the ability, experience and commitment of the Bidder to properly and reasonably plan, schedule, coordinate and execute the Work of the Contract Documents and whether the Bidder has ever been debarred from bidding or found ineligible for bidding on any other projects. The ability of a Bidder to provide the required bonds will not of itself demonstrate responsibility of the Bidder.

Section 9-6 Partial ("Progress") Payments And Retentions

Date: 6/12/14

The following addition shall be made to the end of the first paragraph of this section:

"The City will not pay for materials until they are delivered to the project site, incorporated into the work, the Contractor has submitted all of the required documentation, and the material testing is completed unless specified otherwise in the Special Provisions or unless approved otherwise by the City Engineer."

Section 38-5 — Construction

Date: 6/12/14

The following additions shall be made to the end of this section:

~~"All curbs, gutters, and curb and gutter shall be poured separately from accessibility ramps, sidewalks, drive approaches, median concrete, or concrete paving. These surface improvements shall not be poured monolithically unless approved otherwise by the City Engineer.~~

~~All detectable warning surfaces shall be installed in accordance with the manufacturer's recommendations and requirements. Where a certified installer is required by the manufacturer, the Contractor shall ensure that a certified installer performs the installation work."~~

Section 38-9 Backfilling

Date: 6/12/14

The following addition shall be made to this section:

"All concrete surface improvements shall be allowed to cure for 7 days and shall be protected in place. During these 7 days no vehicles or loads shall be imposed on the new concrete, no piping or other underground improvements shall be constructed under the new concrete, and no new improvements shall be constructed adjacent to the new concrete. At the discretion of the City Engineer, this 7 day

requirement may be reduced to 3 days if the following conditions are met: the Contractor uses Class 2 concrete per the Standard Specifications and the Contractor can show that the new concrete can support the vehicle/construction loads it will be subjected to. These requirements apply to all concrete surface improvements unless approved otherwise by the City Engineer.”

Section 46-1 General

Date: 6/12/14

The following addition shall be made to the end of this section:

“New permanent striping and marking shall be installed no later than 30 working days after the completion of new pavement surfaces.”

Section 46-5 Application of Paint and Glass Beads

Date: 6/12/14

The second paragraph of this section shall be removed and replaced.

The second paragraph currently reads as follows:

~~“The application rates of waterborne or solvent borne paint provided in Section 84-3 of the State Standard Specifications and as amended by these Standard Specifications. Two coats of paint shall be applied at the rate of 100 square feet per gallon of paint at a thickness of 15 mils wet. Glass beads shall be applied for both coats of paint at a rate of 5 lbs. per gallon of paint.”~~

This paragraph shall be removed and replaced with the following paragraph:

~~“Apply waterborne or solvent borne paint in accordance with the requirements of Section 84-3 of the State Standard Specifications and as amended by these Standard Specifications. All paint shall be applied in 2 coats. Each coat of waterborne paint shall be applied at a rate of 215 square feet per gallon. Glass beads shall be applied for both coats of paint at a rate of 5 lbs. per gallon of paint.”~~

Section 12-1 General

Date: 8/11/14

The second to last sentence of the first paragraph shall be removed and replaced.

The second to last sentence of the first paragraph currently reads as follows:

~~“These requirements work in conjunction with the City of Visalia Encroachment Permit Policy Manual.”~~

This sentence shall be removed and replaced with the following:

~~“These requirements work in conjunction and shall comply with the City of Visalia Encroachment Permit Policy Manual.”~~

Section 12-2.1 Traffic Control Plan, Notifications, Portable Changeable Message Signs (PCMS), Construction Notification Signs

Date: 8/11/14

The first paragraph of Section A. Traffic Control Plan shall be removed and replaced with the following:

“Unless otherwise specified in Construction Specifications, a traffic and pedestrian control plan shall be submitted to the City at the preconstruction meeting or 5 days thereafter for Public projects. In the case of a Non-Public project the Contractor shall submit a traffic control plan (TCP) and full Encroachment Permit application for approval a minimum of ten (10) working days prior to the beginning of construction. The Contractor shall have an approved Encroachment Permit with effective dates prior to the beginning of construction. If any part of the traffic/pedestrian control plan falls within 300 feet of a signalized intersection, an off-duty officer may be required for traffic control at discretion of the City Engineer based on the Contractor’s construction means and methods. Traffic control plans shall be drawn to a size and scale to show clearly all the necessary details. The traffic control plan shall be prepared by a Civil or Traffic Engineer registered by the State of California or an IMSA or ATSSA work zone certified designer specific to that association. The Traffic Control Plan shall conform to the requirements of this

Section 12, “Traffic Control; Construction Area Traffic Control Devices,” and Part 6 of the California MUTCD. Where road closures are anticipated or required, the Contractor shall comply with Section 4-14, “Detours,” and Section 12-2.4, “Road Closures,” for special plan preparation requirements. An accepted TCP will be stamped and a copy returned to the Contractor. A copy of the accepted plan must remain on the job site at all times and presented to any City employee who may request it.”

Section 12-2.1 Traffic Control Plan, Notifications, Portable Changeable Message Signs (PCMS), Construction Notification Signs

Date: 8/11/14

The second to last sentence of the last paragraph of Section C. Portable Changeable Message Signs shall be removed and replaced.

This sentence currently reads as follows:

“No additional payment will be made to Contractor for CMS signs required to remain due to Contractors failure to furnish and install the Construction Notification Signs.”

This sentence shall be removed and replaced with the following:

“No additional payment will be made to Contractor for PCMS signs required to remain due to Contractors failure to furnish and install the Construction Notification Signs.”

Section 12-2.2 Contractor’s Operations

Date: 8/11/14

The last paragraph of this section that reads as follows shall be removed:

“In situations where street paveouts are being constructed or other improvements are being constructed that leave a vertical drop along an edge of pavement in the roadway within 6 feet of a travel lane or designated bike path, the Contractor shall be responsible for installing a compacted and stable 4:1 (4 feet horizontal to 1 foot vertical) fill slope from the existing pavement edge to the adjacent grade unless solid unmovable barricades or K-rails are installed to protect the public and isolate the area. At a minimum, this 4:1 slope shall be in place at the end of each work day and at any other time that work is not being performed at the site.”

Section 12-2.5 Deficiencies

Date: 8/11/14

This section is being re-numbered to 12-2.6 Deficiencies. Any references in the Standard Specifications or other documents to Section 12-2.5 Deficiencies shall now mean to refer to Section 12-2.6 Deficiencies.

Section 12-2.5 Roadway Edge Differentials

Date: 8/11/14

Section 12-2.5 Roadway Edge Differentials is a new section that is being added to the specifications. The following language is added under this new section:

“During construction, edges of roadways may have differentials. Less than 2 inches require no special treatment, unless specified by the City Engineer. Where roadway differentials are greater than 2 inches at street intersections or freeway ramps a minimum 6:1 sloped edge fillet is required. Where edge differentials occur and measure 2 to 3 inches along the edge of traveled way, Contractors are required to place a minimum 1:1 sloped edge taper. Edge differentials adjacent to open travel lanes and greater than 3 inches are not permitted.

Edge differentials between 2 and 3 inches within 8 feet of the edge of a traveled lane (lateral buffer zone) are delineated with temporary edge lines or portable delineators spaced at 100 feet or less. LOW SHOULDER warning signs are erected on type II barricades and placed in the excavation area adjacent to the travel lane at a maximum spacing of 2,000 feet. When excavations are between 3 and 6 inches deep, OPEN TRENCH and NO SHOULDER warning signs are placed on type II barricades and alternately

spaced at 2,000 feet or less in the excavation area adjacent to the pavement edge. Channelizing devices a minimum of 36 inches high, placed 2 to 6 feet from the edge, and spaced 100 feet apart delineate the edge of the drop off. Edge differentials greater than 6 inches are protected with a rigid temporary barrier rail. A rigid temporary barrier rail is movable 'concrete' or 'water filled' barrier as specified in Caltrans or these standards. If barrier placement is more than 2 feet from the edge of the traveled way, edge line delineation is required.

Edge differentials between 3 inches and 2 ½ feet located between 8 and 15 feet from the edge of the traveled way are marked with OPEN TRENCH warning signs erected on type II barricades and installed in the excavation area at a spacing of not more than 2,000 feet. To delineate the edge, channelizing devices are spaced at intervals of 200 feet for drop-offs between 3 and 6 inches and at 100 feet for drop-offs between 6 inches and 2 ½ feet deep. All channelizing devices are placed within 2 feet of the edge of the drop-off. Special engineering consideration is required for all excavations deeper than 2 ½ feet.

Edge differentials located more than 15 feet away from the edge of the travel lane do not require treatment unless the differential is more than 6 inches deep. Drop-offs between 6 inches and 2 ½ feet deep are marked with delineators spaced at 200 feet and OPEN TRENCH warning signs spaced at a maximum of 2,000 feet. Special engineering consideration is required for all excavations deeper than 2 ½ feet.”

Section 19-3.5 – Restoration of Surfaces

Date: 8/11/14

The seventh through tenth paragraphs of this section shall be removed and replaced.

The seventh through tenth paragraphs currently read as follows:

“Where sawcutting of existing pavement edges is not shown on the standard drawing or specified, all damaged existing pavement shall be removed and the edges trimmed to neat lines as directed by the Engineer and by a method approved by the Engineer.

Where sawcutting of existing pavement edges is shown on the standard drawing or is specified, the cut shall be made on a straight line along both sides of trenches, and to neat lines around structures or other locations requiring pavement replacement. The full depth cut shall be made and shall encompass all pavement damaged by the work or specified to be removed or replaced.

The Contractor shall notify the Inspector a minimum of 2 working days prior to sawcutting or trimming operations begin to arrange a site walk through to define the required sawcutting/trimming limits.

All edges of existing pavement, whether trimmed or sawcut, shall be protected from damage. Any edges damaged from any cause prior to or during paving operations, shall be re-cut or re-trimmed as directed by the Engineer. No additional payment will be made therefor.”

These paragraphs shall be removed and replaced with the following:

“All existing pavement edges shall be sawcut to neat clean vertical lines unless noted otherwise on the plans or unless approved otherwise by the Engineer. All damaged existing pavement shall be removed and the edges sawcut to neat lines as directed by the Engineer and by a method approved by the Engineer.

All cuts shall be made on a straight line along both sides of trenches, and to neat lines around structures or other locations requiring pavement replacement. The full depth cut shall be made and shall encompass all pavement damaged by the work or specified to be removed or replaced. All existing pavement edges that were present during excavation and trenching operations shall be sawcut a minimum of 6 inches outside of the pavement edges that existed during excavation and trenching activities. The existing pavement shall be properly removed and disposed of by the Contractor.

The Contractor shall notify the Inspector a minimum of 2 working days prior to sawcutting operations begin to arrange a site walk through to define the required sawcutting limits.

All edges of existing pavement shall be protected from damage. Any edges damaged from any cause prior to or during paving operations, shall be re-cut as directed by the Engineer. No additional payment will be made therefor.”

~~Section 28-6.3 Tack Coat~~

~~Date: 8/11/14~~

~~The following paragraph shall be added to this section:~~

~~“On multiple lift HMA sections where the full pavement section is not constructed in one day the contractor shall apply a tack coat to the pavement surfacing prior to installing additional lifts on the existing pavement.”~~

~~Section 28-8.1 General~~

~~Date: 8/11/14~~

~~The eleventh paragraph of this section shall be removed and replaced.~~

~~The eleventh paragraph currently reads as follows:~~

~~“If placing HMA against the edge of existing pavement, sawcut or grind the pavement straight and vertical along the joint and remove extraneous material.”~~

~~This paragraph shall be removed and replaced with the following paragraph:~~

~~“If placing HMA against the edge of existing pavement, sawcut the pavement straight and vertical along the joint and remove extraneous material unless approved otherwise by the Engineer.”~~

~~Section 28-8.6 Joints~~

~~Date: 8/11/14~~

~~The second paragraph of this section shall be removed and replaced.~~

~~The second paragraph currently reads as follows:~~

~~“When terminating paving operations for the day, the Contractor shall construct temporary hot mix ramps at all vertical joints which are greater than 1 1/2 inches in height and transverse to through traffic. Temporary hot mix ramp dimensions and compaction shall be approved by the Engineer. Prior to resuming paving operations, the Contractor shall remove temporary hot mix ramps to provide for vertical face and a full depth lift joint and apply a tack coat to the faces of the joint.”~~

~~This paragraph shall be removed and replaced with the following paragraph:~~

~~“When terminating paving operations for the day or under any similar circumstance where a vertical joint may be present, the Contractor shall construct temporary hot mix asphalt ramps at all vertical joints open to traffic. Temporary hot mix ramp dimensions and compaction shall be approved by the Engineer. Prior to resuming paving operations, the Contractor shall remove temporary hot mix ramps to provide for vertical face and a full depth lift joint and apply a tack coat to the faces of the joint. Joint shall be cleaned prior to applying tack coat.”~~

Section 38-1 – General

Date: 8/11/14

The following paragraph shall be added to the end of this section:

“For all new construction projects all wet underground utility infrastructure and all dry utility crossings in the roadway between the back of the curb and gutters shall be installed prior to the placement of curb and gutter in the street right of way unless approved otherwise by the Engineer.”

Section 38-5 – Construction

Date: 8/11/14

The Standard Specification Amendment referencing Section 38-5 Construction with a Date of 6/12/14 shall be removed and replaced with the following:

The following additions shall be made to the end of this section:

“All curbs, gutters, and curb and gutter shall be poured separately from, sidewalks, drive approaches, median concrete, or concrete paving. These surface improvements shall not be poured monolithically unless approved otherwise by the Engineer or unless shown otherwise on the Standard Drawings. At the contractor’s option curbs, gutters, and curb and gutter may be poured monolithically with accessibility ramps at curb returns. Where this occurs the contractor shall add appropriate weakened plane joints to prevent random cracking. In these situations a score line shall be installed at the location where the back of a curb and gutter would normally be located.

All detectable warning surfaces shall be installed in accordance with the manufacturer’s recommendations and requirements. Where a certified installer is required by the manufacturer, the Contractor shall ensure that a certified installer performs the installation work.”

All related Standard Specification Sections – Punchlist Inspections & Warranty Inspections

Date: 1/8/16

The following is a general requirement that will be incorporated into the Standard Specifications and it is related to a number of different sections:

“In the case of a Public Work or Public Project the Contractor shall provide the City Inspector with the necessary personnel/equipment to assist with punchlist inspections and warranty/maintenance inspections. In the case of a Non-Public Project or Non-Public Work the private developer/private entity responsible for the project shall provide the City Inspector with the necessary personnel/equipment to assist with punchlist inspections and warranty/maintenance inspections.”

Section 28-4.2 City Quality Assurance

Date: 1/8/16

~~The third paragraph of this section shall be removed and replaced.~~

~~The third paragraph currently reads as follows:~~

~~“The asphalt content of the HMA mixture will be determined by extraction tests in conformance with the requirements of ASTM D2172, ASTM D6307 or Caltrans Test Method 382. The asphalt binder content percentage bitumen ratio (pounds of asphalt per 100 pounds of dry aggregate including supplemental fine aggregate if used) shall not vary by more than 0.40% of asphalt above or below the amount designated by the approved HMA mix submittals. Compliance with this requirement will be determined by testing samples taken from the mat behind the paver before initial or breakdown compaction of the mat. If the Contractor requests, and if the City authorizes, samples may be taken from the plant, truck, windrow, or paver hopper.”~~

~~This paragraph shall be removed and replaced with the following paragraph:~~

~~“The asphalt content of the HMA mixture will be determined by extraction tests in conformance with the requirements of ASTM D2172, ASTM D6307 or Caltrans Test Method 382. The asphalt binder content percentage bitumen ratio (pounds of asphalt per 100 pounds of dry aggregate including supplemental fine aggregate if used) shall not vary by more than 0.50% of asphalt above or 0.20% of asphalt below the amount designated by the approved HMA mix submittals. Compliance with this requirement will be determined by testing samples taken from the mat behind the paver before initial or breakdown compaction of the mat. If the Contractor requests, and if the City authorizes, samples may be taken from the plant, truck, windrow, or paver hopper.”~~

Section 28-4.3 Dispute Resolution

Date: 1/8/16

The following paragraph shall be added to the end of this section:

~~“It is the Contractor’s responsibility to furnish the City of Visalia with HMA materials that meet the product and performance requirements of the City’s specifications. If the HMA materials pass the laboratory materials testing but are not performing in an acceptable manner the City has the right to direct the Contractor to remove and replace the HMA at his own expense. HMA will be considered as not meeting performance requirements if it exhibits defects including, but not limited to, the following: segregation of the materials, raveling of coarse or fine aggregate, rock pockets, potholes, depressions/rutting, cracking, hardened lumps, checking, shoving, and any other defect that will affect the long term function and serviceability of the HMA.”~~

Section 28-8.3 Temperatures

Date: 1/8/16

The first paragraph of this section shall be removed and replaced.

The first paragraph currently reads as follows:

~~“HMA shall not be placed when the atmospheric temperature is below 50 degrees F or during unsuitable weather. All HMA paving shall be applied to dry ground.”~~

This paragraph shall be removed and replaced with the following paragraph:

~~“HMA shall be placed when the atmospheric temperature is 50 degrees F and rising. HMA shall not be placed during unsuitable weather. All HMA paving shall be applied to dry ground.”~~

Section 38 - Concrete Curbs, Sidewalks, Surface Improvements

Date: 1/8/16

The following addition shall be made to this section:

“Where any surface or tolerance defects are found on newly placed concrete improvements the Contractor shall remove and replace the concrete improvement in its entirety at his own expense. Additionally, any concrete improvements that don’t conform with City specifications and plans shall be removed and replaced in their entirety at the Contractor’s expense. The City of Visalia does not allow grinding, raking, breaking, topical surface type modifications, or other similar types of modifications on new or existing concrete improvements unless approved by the City Engineer in writing.”

Section 46-1 General

Date: 1/8/16

The first sentence of the third paragraph shall be removed and replaced.

This sentence currently reads as follows:

~~“Permanent striping and marking shall not be placed on any new pavement surfaces until the surface has been in place for a minimum of 20 working days.”~~

This sentence shall be removed and replaced with the following:

“Permanent striping and marking on new pavement surfaces shall be installed no sooner than 14 days after the surface has been placed but no later than 21 days after the surface has been placed. Permanent striping and marking on existing pavement surfaces shall be installed as soon as possible.”

Section 46-5 Application of Paint and Glass Beads

Date: 1/8/16

The second paragraph of this section shall be removed and replaced.

The second paragraph currently reads as follows:

~~“The application rates of waterborne or solvent borne paint provided in Section 84-3 of the State Standard Specifications and as amended by these Standard Specifications. Two coats of paint shall be applied at the~~

~~rate of 100 square feet per gallon of paint at a thickness of 15 mils wet. Glass beads shall be applied for both coats of paint at a rate of 5 lbs. per gallon of paint.”~~

This paragraph shall be removed and replaced with the following paragraph:

~~“Apply waterborne or solvent borne paint in accordance with the requirements of Section 84-3 of the State Standard Specifications and as amended by these Standard Specifications. One coat of paint shall be applied at the rate of 100 square feet per gallon of paint at a thickness of 15 mils wet. Glass beads shall be applied at a rate of 5 lbs. per gallon of paint. Glass beads shall be distributed evenly throughout the pavement striping.”~~

Section 46-5 Application of Paint and Glass Beads

Date: 1/15/16

The Standard Specification Amendment referencing Section 46-5 Application of Paint and Glass Beads with a Date of 1/8/16 shall be removed and replaced with the following:

The second paragraph of this section shall be removed and replaced.

The second paragraph currently reads as follows:

~~“The application rates of waterborne or solvent borne paint provided in Section 84-3 of the State Standard Specifications and as amended by these Standard Specifications. Two coats of paint shall be applied at the rate of 100 square feet per gallon of paint at a thickness of 15 mils wet. Glass beads shall be applied for both coats of paint at a rate of 5 lbs. per gallon of paint.”~~

This paragraph shall be removed and replaced with the following paragraph:

~~“Apply waterborne or solvent borne paint in accordance with the requirements of Section 84-3 of the State Standard Specifications and as amended by these Standard Specifications. Two coats of paint shall be applied. The first coat of paint shall be applied at a rate of 200 square feet per gallon of paint at a thickness of 7 mils wet. The second coat of paint shall be applied at a rate of 100 square feet per gallon of paint at a thickness of 15 mils wet. The first coat of paint shall be dry before the second coat is applied. Glass beads shall be applied at a rate of 5 lbs. per gallon of paint in the second coat of paint. Glass beads shall be distributed evenly throughout the pavement striping.”~~

State Standards Update - All related City Standard Specification Sections

Date: 1/16/25

The following changes shall be made to the City of Visalia Engineering Standard Specifications.

Replace the last paragraph under Section 1-1, General with the following paragraph:

These Standard Specifications and Contract Documents are meant to work in direct line with Sections 10-60, Section 73, and Sections 82-95 of the 2024 version of the State Standard Specifications, except as modified by these Standard Specifications and Contract Documents. For terms, specifications, and requirements appearing in these Standard Specifications and Contract Documents and the State Standard Specifications, these Standard Specifications and Contract Documents shall take precedence. Other sections of the State Standard Specifications are included by reference in these Standard Specifications and Contract Documents. In the event where items are not covered or specified in these Standard Specifications or Contract Documents, the State Standard Specification Sections listed above and State Standard Plans shall govern.

Replace the following Sections of the City Standard Specifications with the following language:

1-3.57 State of California Standard Specifications

The 2024 version of the Standard Specifications issued by the Department of Transportation (Caltrans) of the Business, Transportation and Housing Agency of the State of California.

1-3.59 State Standard Plans

The 2024 version of the State of California, Department of Transportation Standard Plans.

1-3.60 State Standard Specifications

The 2024 version of the Standard Specifications issued by the Department of Transportation (Caltrans) of the Business, Transportation and Housing Agency of the State of California.

Section 28 Hot Mix Asphalt

Date: 1/16/25

Section 28 of the City Standard Specifications shall be replaced with the following revised specifications in Attachment A.

Section 29 Storm Drainage and Sanitary Sewer Facilities

Date: 1/16/25

ADS SaniTite HP Triple Wall pipe in the 30”-60” diameter range will be considered an acceptable pipe material for gravity-flow Storm Drain and Sanitary Sewer mains. The pipe and installation shall meet the requirements of this section and all the requirements of the Standard Specifications.

A. Submittals & Pre-Construction Meeting

1. As part of the submittal package the contractor shall provide a letter signed by an ADS engineering representative verifying that ADS has reviewed the Geotechnical soils report for the project and that the ADS pipe will be acceptable at this location. This letter shall provide all soil backfill specifications required for the pipe installation. This letter also needs to verify if the native soils are acceptable for use as initial pipe backfill.
2. The submittal shall include details and materials for the pipe to manhole connections.
3. The contractor shall be responsible for holding a pre-installation meeting at the project site with their personnel, a qualified ADS representative, and City representatives a minimum of 3 working days prior to construction.

B. Pipe Requirements

ADS 30”-60” diameter SaniTite HP triple wall pipe shall have smooth interior and exterior surfaces with annular inner corrugations.

1. 30-inch through 60-inch triple wall pipe shall meet ASTM F2764.
2. Pipe shall have a minimum pipe stiffness of 46 psi when tested in accordance with ASTM D2412.
3. Manning’s “n” value for use in design shall be 0.012.
4. Pipe shall be light grey in color.

C. Joint Performance

Pipe shall be joined using a bell and spigot joint meeting the requirements of ASTM F2764. The joint shall be watertight according to the requirements of ASTM D3212, with the addition of a 15 psi pressure requirement. Gaskets shall meet the requirements of ASTM F477. Gaskets shall be installed by the pipe manufacturer and covered with a removable, protective wrap to ensure the gaskets are free from debris. A joint lubricant available from the manufacturer shall be used on the gasket and bell during assembly. 30–inch through 60-inch diameters shall have a reinforced bell with a polymer composite band installed by the manufacturer. Joints shall have dual gaskets.

D. Fittings

Fittings shall conform to ASTM F2764. Bell and spigot connections shall utilize a welded or integral bell and valley or inline gaskets meeting the watertight joint performance requirements of ASTM D3212.

E. Field Pipe and Joint Performance

To assure watertightness, field performance verification and testing is required. Testing shall be in accordance with the requirements for PVC pipe as listed in the Standard Specifications. For pipe diameters greater than 36" joint integrity may be validated by joint isolation testing. All joints shall be tested in the presence of the City Inspector. Appropriate safety precautions must be used when field-testing any pipe material. Contact the manufacturer for recommended leakage rates.

F. Material Properties

Polypropylene compound for pipe and fitting production shall be an impact modified copolymer meeting the material requirements of ASTM F2764.

G. Installation

Installation shall be in accordance with ASTM D2321, ADS recommended installation guidelines, and the City Standard Plans and Specifications. Maximum fill heights depend on embedment material and compaction level; please refer to Technical Note 2.05. Contact your local ADS representative or visit our website at www.adspipe.com for a copy of the latest installation guidelines. Gaskets and installation methods used at manholes shall be as recommended by ADS and accepted by the City Engineer.

Section 46 Traffic Stripes, Signs, and Pavement Markings

Date: 1/16/25

The following changes shall be made to City of Visalia Engineering Standard Specifications Section 46, Traffic Stripes, Signs and Pavement Markings:

Replace paragraph three with this paragraph under Section 46-1, General:

Permanent striping and marking on new pavement surfaces shall be installed no sooner than 14 days after the surface has been placed but no later than 21 days after the surface has been placed. Permanent striping and marking on existing pavement surfaces shall be installed as soon as possible. Any temporary lane line striping, as shown on the Plan, shall be paint (one-coat). Temporary reflective road marker tabs, approved for use by the Engineer, shall be installed in accordance with the manufacturer's specifications but shall not be spaced at more than 15-foot intervals. Temporary reflective road marker tabs shall also be placed at all stop bars that are removed and shall have a minimum of six (6) reflectors or as directed by the Engineer. The Contractor shall also install temporary reflective tape to establish obliterated pavement markings including but not limited to crosswalks, stop bars, stop markings, and turn arrows. The temporary reflective markers and temporary reflective tape shall be the same color as the lane line, centerline, or pavement marking the markers/tape replace. The Contractor shall maintain all temporary reflective markers and temporary reflective tape for the entire duration of the project. At the end of the project the contractor shall remove all temporary markers and tape in a manner that does not damage the road surface.

Replace Section 46-2.1, Thermoplastic Materials, with this Section:

46-2.1 Thermoplastic Materials

Thermoplastic shall be used for all stencils and pavement markings. Stencils and pavement markings include, but are not limited to: Crosswalks, limit lines, arrows, symbols, numbers, and words. The Alternative use of paint for stencils and pavement markings requires written approval from the City Engineer or their authorized representative during the bid process. Thermoplastic shall comply with Section 84 of the 2024 Caltrans Standard Specifications.

All traffic stripes (traffic lines) shall be painted per the City Standard Specifications.

Add the following to Section 46-2 Materials:

46-2.8 Green Paint for Bike Lanes

Green Paint shall be 98/2 Methyl Methacrylate (MMA) intermixed with hard-wearing aggregate (Mohs Hardness >7). The finished application shall be 90-mils thick, color stable with >60 BPN Slip resistance.

Type: Ennis-flit “MMAX,” “Transpo color-safe,” or approved equal. Green Paint shall be installed where shown/noted on the plans and Contract Documents.

46-2.9 Flexible Delineator Posts

The work consists of furnishing and placing flexible delineator posts of the type specified in these Specifications, Contract Documents, and at the locations indicated on the plans or where designated by the Engineer.

Flexible delineator posts, bases, and reflective sheeting must be made of approved materials. Flexible delineator post must be able to be reset to original position and orientation after impact. The flexible delineator posts must use a reactive spring to achieve the reset capability.

Material Characteristic	Spring Driven Reset
Material Strength	Anti-Twist Spring
Post Details	
Width	2.375"
Colors	White
Post Top	Short
Internal Components	Reactive Spring with Cut Cable
Application to Base	Standard: Fixed with Hardware
Retroreflective Sheeting Bands	
Color	Match post color
Sheet Grade	Type V
Bands of Sheeting	Two
Band Width	3"
Application to Pavement	
Base Type	Surface Mount Base

Asphalt Surface	Bolted (bolt type must match pavement type)
Anchor Bolt Specs	Manufacture recommendations
Base Characteristics	
Geometry	Standard: Fixed Base 7 7/8" x 7 7/8" square 1" Height Approximately:
Color	Black

Replace Section 46-7, Measurement, with this Section:

46-7 Measurement

See the "Description of Bid Items" Section of the Construction Specifications.

Replace Section 46-8, Payment, with this Section:

46-8 Payment

See the "Description of Bid Items" Section of the Construction Specifications.

STANDARD SPECIFICATION AMENDMENTS - ATTACHMENT A

SECTION 28 REVISED SECTION 28: HOT MIX ASPHALT

Section 28 of the City Standard Specifications shall be replaced with the following revised specifications.

28-1 General

Hot Mix Asphalt shall comply with this Section “Hot Mix Asphalt,” and the 2024 version of the State Standard Specification Section 39 “Asphalt Concrete.” Where requirements and provisions are shown in both this Section “Hot Mix Asphalt” and Section 39 “Asphalt Concrete” of the State Standard Specifications, the requirements and provisions of this Section shall take precedence and govern over the State Standard Specifications.

28-2 Summary

This Section includes general specifications for producing and placing hot mix asphalt (HMA) by mixing aggregate and asphalt binder at a mixing plant and spreading and compacting the HMA mixture. All HMA shall be Type A and shall conform to the provisions in Section 39 Asphalt Concrete of the State Standard Specifications, these Specifications, and the Contract Specifications.

In the City of Visalia all HMA shall be Type “A” asphalt concrete with 3/4" aggregate gradation and PG 70-10 liquid asphalt binder where the total HMA pavement thickness is equal to or greater than 2.5” in depth unless approved otherwise by the Engineer with the following exceptions:

- A. For City of Visalia Trail projects all HMA shall be Type “A” asphalt concrete with 1/2" aggregate gradation and PG 70-10 or 64-10 liquid asphalt binder.
- B. Where not otherwise specified Type “A” asphalt concrete with 1/2" gradation and PG 70-10 or 64-10 liquid asphalt binder shall only be used where noted on the Plans, Standard Drawings, these Specifications, the Contract Specifications or where specifically approved by the Engineer in writing.
- C. Where a total HMA pavement thickness of 2” or less is specified on the plans, see the Plans and Contract Specifications for the type of HMA that shall be used.

28-3 Reclaimed Asphalt Pavement

HMA may be produced using Reclaimed Asphalt Pavement (RAP) in accordance with the requirements of the State Standard Specifications. However, the quantity of RAP aggregate substituted for virgin aggregate in the HMA shall not exceed more than 15 percent of the aggregate blend.

28-4 Warm Mix Asphalt Technology

Warm mix asphalt meeting the requirements of the State Standard Specifications may be included in the work on an as needed basis. If the Contractor believes that warm mix asphalt will be required to meet the project schedule requirements due to paving in colder weather, they shall include this cost in their bid for the hot mix asphalt. All warm mix asphalt submittals shall be provided and accepted by the Engineer well in advance of construction activities.

28-5 Contractor Quality Control & Quality Assurance

28-5.1 Contractor Quality Control

The Contractor shall be solely responsible for establishing, maintaining, and changing a quality control system to ensure materials and work comply with the Specifications, State Standard Specifications, Plans, and Contract Documents. Full compensation for all costs related to Quality Control shall be considered as included in the contract unit price paid per ton for hot mix asphalt, and no additional compensation will be allowed, therefore. If no hot mix asphalt bid item is included, the cost will be considered included in the various bid items to which the work is associated with, and no additional compensation will be allowed, therefore. The Quality Control materials testing lab shall be responsible for taking extra asphalt cores that will be shared with the City Quality Assurance materials testing lab.

It shall be the responsibility of the Contractor to set up a pre-paving conference with the Inspector and Engineer at a mutually agreed time and place a minimum of 2 working days prior to paving activities to discuss methods of performing the production of the paving work.

28-5.2 City Quality Assurance

The City of Visalia will be performing quality assurance testing of the HMA throughout the duration of the construction project for City Public Projects. Acceptance of the material placed will be based on the results of the quality assurance testing performed. Any testing required in addition to the original tests due to the failure of the materials to meet Contract Specifications shall be paid for by the Contractor.

For Non-Public projects, the Contractor shall be responsible for all costs involved with providing samples, material testing, and compaction testing, as required for acceptance by the City Inspector and Engineer. The Contractor shall be responsible for providing all test results to the City for acceptance of the materials placed.

If HMA materials do not meet the requirements of the specifications and Contract Documents as determined by quality assurance testing or quality control testing, the Engineer shall have the option to order the Contractor to remove and replace the HMA, as directed by the Engineer, with acceptable materials or reduce the payment for the HMA in accordance with the State Standard Specifications. Any removals and replacements required shall be paid for by the Contractor

28-5.3 Dispute Resolution

If any disputes arise concerning HMA density or quality of materials, the disputes shall be resolved by taking density cores and testing briquettes in accordance with State Standard Specifications. The Contractor shall be responsible for providing all materials, equipment, and labor for performing the cores and for repairing all cored locations to the satisfaction of the Engineer. The Contractor will also be responsible for providing all traffic control and other work necessary to perform coring and repairs. The cores shall be taken in the presence of the Inspector and shall be given directly to the testing laboratory. All costs will be paid for by the Contractor at no additional cost to the City.

It is the Contractor's responsibility to furnish the City of Visalia with HMA materials that meet the product and performance requirements of the City's specifications. If the HMA materials pass the laboratory materials testing but are not performing in an acceptable manner the City has the right to direct the Contractor to remove and replace the HMA at his own expense. HMA will be considered as not meeting performance requirements if it exhibits defects including, but not limited to, the following: segregation of the materials, raveling of coarse or fine aggregate, rock pockets, potholes, depressions/rutting, cracking, hardened lumps, checking, shoving, and any other defect that will affect the long-term function and serviceability of the HMA.

28-6 Subgrade, Tack Coat, and Geosynthetic Pavement Layer

Work shall comply with all the requirements of the State Standard Specifications. Additional requirements are listed below.

28-6.1 Subgrade

Subgrade and base to receive HMA must comply with the compaction and elevation tolerance specifications in the sections for the material involved. Subgrade and base must be free of loose and extraneous material. If HMA is paved on existing base or pavement, remove loose paving particles, dirt, and other extraneous material by any means including flushing and sweeping. HMA shall not be placed on wet or saturated subgrade or base materials.

28-6.2 Tack Coat

Tack coat shall be as specified in the State Standard Specifications. A tack coat shall be uniformly applied upon the existing pavement, any paving course, all vertical surfaces, gutters, cold paving joints, manholes and the like, shall be painted immediately before the adjoining HMA is placed.

The surface shall be free of water, foreign material, or dust, when the tack coat is applied. To minimize public inconvenience, no greater area shall be treated in any one day than is planned to be covered by HMA during the same day. Close areas receiving tack coat to traffic. Do not track tack coat onto pavement surfaces beyond the job site.

Full compensation for tack coat material and application shall be considered as included in the contract unit price paid per ton for hot mix asphalt, and no additional compensation will be allowed, therefore. If no hot mix asphalt bid item is included, the cost will be considered included in the various bid items to which the work is associated with; no additional compensation will be allowed therefor.

28-6.3 Geosynthetic Pavement Interlayer

Geosynthetic pavement interlayer will only be used where shown on the Plans or specified in the Contract Documents.

28-7 Spreading and Compacting Equipment

Work shall comply with all the requirements of the State Standard Specifications. Additional requirements are listed below.

28-7.1 General

HMA shall be spread with an asphalt paver and shall be compacted to obtain the specified density and surface finish to the lines, grades and cross section shown on the plans.

Paving equipment for spreading must be:

- A. Self-propelled
- B. Mechanical
- C. Equipped with a screed or strike-off assembly that can distribute HMA the full width of a traffic lane
- D. Equipped with a full width compacting device

- E. Equipped with automatic screed controls and sensing devices that control the thickness, longitudinal grade, and transverse screed slope

Install and maintain grade and slope references. The screed must produce a uniform HMA surface texture without tearing, shoving, or gouging. The paver must not leave marks such as ridges and indentations, unless you can eliminate them by rolling.

Rollers must be equipped with a system that prevents HMA from sticking to the wheels. You may use a parting agent that does not damage the HMA or impede the bonding of layers.

At locations where the HMA is to be placed over areas inaccessible to an asphalt paver, the HMA shall be spread by any means that will obtain the specified results and shall be compacted to the specified density and to the required lines, grades and cross sections.

28-8 Transporting, Spreading, and Compacting

Work shall comply with all the requirements of the State Standard Specifications. Additional requirements are listed below.

28-8.1 General

In areas less than 5 feet wide and outside the traveled way, including shoulders, you may use mechanical equipment other than a paver for these areas. The equipment must produce uniform smoothness and texture.

Do not use petroleum products such as kerosene or diesel fuel to release HMA from trucks, spreaders, or compactors.

Do not operate spreading equipment on any area's top layer until completing final compaction.

If leveling with HMA is specified, fill and level irregularities and ruts with HMA before spreading HMA over the base, existing surfaces, or bridge decks. You may use mechanical equipment other than a paver for these areas. The equipment must produce uniform smoothness and texture.

If placing HMA against the edge of existing pavement, sawcut the pavement straight and vertical along the joint and remove extraneous material unless approved otherwise by the Engineer.

Do not allow traffic on new HMA pavement until its surface temperature is below 160 degrees F.

If you request and if authorized by the Engineer, you may cool HMA Type A with water when rolling activities are complete. Apply water under Section 17.

If any deficiencies or irregularities occur within the HMA it shall be removed and replaced at the Contractor's expense as directed by the Engineer.

28-8.2 Spreading HMA

In addition to the general requirements of these Specifications and the State Standard Specifications, asphalt paving equipment shall be equipped with automatic screed controls and a sensing device or devices. When placing HMA to lines and grades established by the Engineer, the automatic controls shall control the longitudinal grade and transverse slope of the screed. Grade and slope references shall be furnished, installed and maintained by the Contractor.

HMA shall be spread and compacted in layers according to the following table. All thicknesses shown in the table are compacted thicknesses. The top layer shall not exceed the dimensions listed in the following table. All lower layers shall not exceed 0.25 - foot in compacted thickness. The minimum thickness for each compacted layer shall be 2.5 inches for ¾" aggregate asphalt. These requirements may be modified where specifically approved by the Engineer in writing.

Total Thickness Shown on Plans	No. of Layers	Top Layer Thickness		Next Lower Layer Thickness		All Other Lower Layers Thickness	
		Min.	Max.	Min.	Max.	Min.	Max.
3 or Less	One	----	----	----	----	----	----
3-1/2	One*	----	----	----	----	----	----
4-4.5 (not used)	----	----	----	----	----	----	----
5	2	2.5	2.5	2.5	2.5	----	----
5-1/2 or more	**	2.5	3	2.5	3	2.5	3

* It shall be the Contractor's responsibility to use the appropriate equipment and procedures to meet compaction requirements.

** At least 2 layers if total thickness is 5-1/2 inches. At least 3 layers if total thickness is more than 6 inches and less than 10 inches. At least 4 layers if total thickness is 10 inches or more.

When placing the initial mat of HMA on existing pavement, the end of the screed nearest the centerline shall be controlled by a sensor activated by a ski device. The end of the screed farthest from centerline shall be controlled by a sensor activated by a similar ski device. When paving contiguously with previously placed mats, the end of the screed adjacent to the previously placed mat shall be controlled by a sensor that responds to the grade of the previously placed mat and will reproduce the grade in the new mat within a 0.01 - foot tolerance. The end of the screed farthest from the previously placed mat shall be controlled in the same manner as when placing the initial mat.

Should the methods and equipment furnished by the Contractor fail to produce a layer of HMA conforming to the "Smoothness" requirements, the paving operations shall be discontinued, and the Contractor shall modify his equipment or furnish substitute equipment.

Should the automatic screed controls fail to operate properly during any day's work, the Contractor may use manual control of the spreading equipment for the remainder of that day, however, the equipment shall be corrected or replaced with alternative automatically controlled equipment conforming to the requirements in this section before starting another day's work.

When multiple layers of HMA are required by the Engineer or these Specifications the Contractor shall offset seams of adjacent layers of HMA by twelve inches (12") minimum. The Contractor shall make every effort to lay HMA so that seams on the travel course shall match proposed lane lines as noted on the project striping plans.

28-8.3 Temperatures

Temperatures will be as specified in the State Standard Specifications.

All HMA paving shall be applied to dry ground. If the Contractor fails to comply with the temperature requirements during installation the City has the right to reject the work, and the material shall be removed and disposed of at the Contractors expense and no compensation will be allowed for the material.

No layer shall be placed over a layer until the temperature at the surface, of the existing layer, is not more than 160 degrees F.

28-8.4 Compacting

Compacting equipment shall conform to all the general requirements of this Section. HMA shall be thoroughly compacted by rolling. Each roller shall have a separate operator. Rollers must be self-propelled and reversible. It shall be the Contractor's responsibility to determine the type of equipment, number of rollers, number of roller passes, and all other general process means and methods to produce a final HMA section that meets all of the requirements of this Section and the State Standard Specifications.

Self-propelled compacting rollers shall meet the following criteria:

- A. Each roller manufactured after 1998 shall have a Manufacturer's identification plate that is readily accessible and readable with the following information:
 - 1. Name of Manufacturer.
 - 2. Model Number.
 - 3. Static pounds per lineal inch (PLI) (newton per millimeter (N/mm)) of each drum.
 - 4. Static PLI (N/mm) of ballasted drum
 - 5. PLI (N/mm) of each drum in vibratory mode.

Contractors using rollers manufactured prior to 1999 shall have the manufacturer's specifications, providing the information requested above, available to the Engineer upon request. Any roller not having this information shall not be used and shall be removed from the jobsite.

- B. Tandem rollers in the static mode used for breakdown or intermediate rolling shall be such that the ballasted or unballasted weight on at least one drum is a minimum of 250 PLI (44 N/mm).
- C. Vibratory rollers used for breakdown or intermediate rolling shall have a compactive effort of not less than 250 PLI (44N/mm) of centrifugal force at the setting indicated by the manufacturer's ID plate.
- D. Finish rolling shall be performed by static or vibratory steel rollers in static mode
- E. Pneumatic-tired rollers used for intermediate rolling shall be the oscillating type having a width of not less than 4 feet and equipped with pneumatic-tires of equal size and diameter, having treads satisfactory to the Engineer. Wobble-wheel rollers will not be permitted. The tires shall be so spaced that the gap between adjacent tires will be covered by the tread of the following tire. The tires shall be inflated to 90 psi or such lower pressure as designated by the Engineer, and maintained so that the air pressure will vary not more than 5 psi from the designated pressure. Pneumatic-tired rollers shall be so constructed that the total mass of the roller can be varied to produce an operating mass per tire of not less than 2,000 pounds. The total operating mass of the roller shall be varied as directed by the Engineer.
- F. Oscillating-type pneumatic-tired rollers shall be used during intermediate compaction unless approved otherwise by the Engineer in writing.

Other rollers may be used subject to approval of the Engineer. All rollers must be maintained in good mechanical condition. Those that cannot be driven along a straight path, operated without jerking, or the

amplitude or frequency cannot be adjusted shall not be used and shall be removed from the Work site. No leakage of petroleum products from any roller shall be allowed to come in contact with pavement being constructed, nor shall any roller be permitted to stand motionless on any portion of the work. The surfaces of all roller wheels shall be treated with sufficient water to prevent the pickup of bituminous materials, but under no circumstances shall the quantity of water used be detrimental to the surface of pavement being rolled.

Rolling shall be commenced along the lower edge of the area to be rolled and continued until the edge is thoroughly compacted, after which the roller shall progress toward the highest portion, unless directed otherwise by the Engineer or Inspector. All areas shall be rolled in a like manner.

Rolling shall be performed so that cracking, shoving or displacement will be avoided.

Upon completion of rolling operations, if ordered by the Engineer, the HMA or HMA base may be cooled by applying water.

The completed surfacing shall be thoroughly compacted, smooth, and free from ruts, humps, depressions, or irregularities. Any ridges, indentations or other objectionable marks left in the surface of the HMA by blading or other equipment shall be eliminated by rolling or other means. The use of any equipment that leaves ridges, indentations, or other objectionable marks in the HMA shall be discontinued, and acceptable equipment shall be furnished by the contractor.

Average in-place density will be determined by nuclear gage in conformance with California Test 375, ASTM D2950, asphalt cores, or equivalent method approved by the Engineer. Percent of theoretical maximum density shall be determined by laboratory specimens tested in accordance with California Test 309. The HMA will be tested at intervals as required by the City of Visalia. HMA shall be compacted to percentage of maximum theoretical density of 92% to 97% when compared to laboratory specimens tested in accordance with California Test 309.

28-8.5 Headers

2" x 6" redwood headers or any specie pressure treated wood shall be installed along the unrestrained/free edges of all hot mix asphalt pavement sections. The headers shall have a firm bearing on the header subgrade and the top edges shall be set to conform to the grade of the proposed street grade. Side stakes 2 inches by 3 inches, 18 inches long, or longer, and spaced not over 4 feet apart, shall be driven on the outside of the headers to a depth of 1 inch below the top edge and then nailed to the header with galvanized nails. The joints between the individual boards being used as headers shall be spliced with a 1-inch by 6 inches, 24 inches long board, of the same type as the headers. Payment for furnishing all labor, equipment, tools, and materials to install headers complete in place shall be considered included in the various bid items to which this work is associated with; no additional compensation will be provided therefor.

28-8.6 Joints

Joints between successive runs shall be vertical and at right angles to the line of the improvement. Care shall be exercised in connection with the construction of all joints to ensure that the surface of the pavement is true to grade and cross section. Lapped joints will not be permitted.

When terminating paving operations for the day or under any similar circumstance where a vertical joint may be present, the Contractor shall construct temporary hot-mix asphalt ramps at all vertical joints open to traffic. Temporary hot-mix ramp dimensions and compaction shall be approved by the Engineer. Prior to resuming paving operations, the Contractor shall remove temporary hot-mix ramps to provide for vertical face and a full depth lift joint and apply a tack coat to the faces of the joint. Joint shall be cleaned prior to applying tack coat.

In locations where new HMA paving abuts existing asphalt concrete that is less than eight years old, or as directed by the City Engineer, all joints shall be required to be finished using an approved heater-remix process to provide a seamless joint with the existing pavement.

28-9 Smoothness

The Inertial Profiler requirements of State Standard Specification Section 39-2.01A(4)(i)(iii) "Pavement Smoothness" will only be required as specified in these Special Provisions or as required by the Engineer in writing. However, if the Contractor fails to meet the straightedge requirements in this section or if there appear to be other deficiencies or inconsistencies in the pavement surface, the Contractor shall be responsible for completing all the requirements and work in the "Pavement Smoothness" section of the State Standard Specifications at his own expense.

28-9.1 Straightedge

The top layer of HMA pavement must not vary from the lower edge of a 10-foot straightedge:

- A. More than 0.01 foot when the straightedge is laid parallel with the centerline
- B. More than 0.02 foot when the straightedge is laid perpendicular to the centerline and extends from edge to edge of a traffic lane
- C. More than 0.02 foot when the straightedge is laid perpendicular to the centerline and extends edge to edge on any portion of the roadway that is required or intended to have a consistent cross slope
- D. More than 0.02 foot when the straightedge is laid within 24 feet of a pavement conform

28-9.2 Smoothness Correction

If the top layer of HMA pavement does not comply with the smoothness specifications, grind and place an overlay of HMA, or remove and replace it. Grind and overlay methods shall only be allowed where specifically approved by the Engineer. Do not start corrective work until your choice of methods is authorized by the Engineer.

Corrected HMA pavement areas must be uniform rectangles with edges:

- A. Parallel to the nearest HMA pavement edge or lane line
- B. Perpendicular to the pavement centerline

Measure the corrected HMA pavement surface with a 10-foot straightedge and correct the pavement to within specified tolerances. All repairs shall be completed to meet the requirements of the Contract Documents at the Contractor's expense and no additional payment will be made therefor.

28-10 Additional Testing and Requirements

When compacted, the new asphalt pavement shall be at the elevations and slopes shown on the plans and shall meet all of the requirements of the Plans, Specifications, and other Contract Documents. Where the new pavement abuts concrete curb and gutter, vee gutter, drive approaches or other concrete improvements used to drain the roadway, the pavement edge shall be one-eighth of one inch (1/8") to three-eighths of one inch (3/8") higher than the adjacent concrete improvement, except at the bottom of curb return accessibility ramps or other accessibility ramps where the new pavement edge shall be flush. The surface shall be smooth, without humps or depressions. Deviation from this tolerance shall be cause for rejection of the surfacing. Any areas that are found to be out of compliance with these requirements shall be removed and replaced at the Contractor's expense.

All hot mix asphalt surfaces shall be water tested prior to acceptance. The Contractor shall coordinate with the inspector to schedule the water testing, and all testing shall be performed in the presence of the inspector. The entire asphalt surface shall be flooded with water to identify deficient areas. Any areas that are found to be out of compliance with the specification requirements shall be removed and replaced, as approved by the Engineer, at the Contractor's expense.

28-11 Measurement and Payment

See the "Description of Bid Items" Section of the Specifications for details.