

DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
OFFICE ENGINEER
1727 30th Street MS-43
P.O. BOX 168041
SACRAMENTO, CA 95816-8041
FAX (916) 227-6214
www.dot.ca.gov/hq/esc/oe



*Serious Drought.
Help save water!*

September 6, 2016

03-Gle-5-R0.0/R20.0
03-4F0604
Project ID 0314000019
ACNHI-0057(098)

Addendum No. 3

Dear Contractor:

This addendum is being issued to the contract for CONSTRUCTION ON STATE HIGHWAY IN GLENN COUNTY IN AND NEAR WILLOWS FROM THE COLUSA COUNTY LINE TO 0.2 MILE NORTH OF COUNTY ROAD 28 to set a new bid opening date as shown herein, revise the project plans, the *Notice to Bidders and Special Provisions*, the *Bid book*.

Submit bids for this work with the understanding and full consideration of this addendum. The revisions declared in this addendum are an essential part of the contract.

Bids for this work will be opened on September 22, 2016, instead of the original date of Wednesday, September 7, 2016.

Project plan sheets 3, 11, 14, 17, 21, 27, 28, 29, 30, 31, 33, 34, 35 and 64 are replaced and attached for substitution for the like-numbered sheet(s).

Project plan sheet 63A is added and attached for addition to the project plans.

In the *Notice to Bidders*, the seventh paragraph is revised as follows:

"The Contractor must have either a Class A license or one of the following Class C licenses: C-12

In the *Notice to Bidders*, between the ninth and tenth paragraph, added as follows:

"For the Federal training program, the number of trainees or apprentices is 1."

In the Special Provisions, Section 1-1.01, "Bid Items and Applicable Sections," is replaced as attached.

In the Special Provisions, Section 5-1.09A is added as attached.

In the Special Provisions, Section 10-1.02 is added as attached.

In the Special Provisions, Section 12-3.19, "ALTERNATIVE TEMPORARY CRASH CUSHION," is added as attached.

In the Special Provisions, Section 12-4.05F is added as attached.

In the Special Provisions, Section 12-4.03 is replaced as attached.

In the Special Provisions, Section 12-8, "TEMPORARY PAVEMENT DELINEATION," is replaced as attached.

Addendum No. 3
Page 2
September 6, 2016

03-Gle-5-R0.0/R20.0
03-4F0604
Project ID 0314000019
ACNHI-0057(098)

In the Special Provisions, Section 39-1.03K, "Rumble Strips," is replaced as attached.

In the Special Provisions, Section 39-2 is added as attached.

In the Special Provisions, Section 39-4.02C is replaced as attached.

In the Special Provisions, Section 82-1.04 is added as attached.

In the Special Provisions, Section 83-1.02C(3), is replaced as attached.

In the Special Provisions, Section 83-2.02E(2), "Type CAT Crash Cushion," the fifth paragraph is replaced as follows:

"The above price will be firm for orders placed on or before September 22, 2016, provided delivery is accepted within 90 days after the order is placed."

In the Special Provisions, Section 84-6 is added as attached.

In the Special Provisions, Section 86-2, "ELECTRICAL SYSTEMS," is replaced as attached.

In the *Bid* book, in the "Bid Item List," Items 62 is deleted.

To *Bid* book holders:

Inquiries or questions in regard to this addendum must be communicated as a bidder inquiry and must be made as noted in the *Notice to Bidders* section of the *Notice to Bidders and Special Provisions*.

Submit the *Bid* book as described in the *Electronic Bidding Guide* at the Bidders' Exchange website.

http://www.dot.ca.gov/hq/esc/oe/electronic_bidding/electronic_bidding.html

Inform subcontractors and suppliers as necessary.

This addendum, EBS addendum file and attachments are available for the Contractors' download on the Web site:

http://www.dot.ca.gov/hq/esc/oe/project_ads_addenda/03/03-4F0604

If you are not a *Bid* book holder, but request a book to bid on this project, you must comply with the requirements of this letter before submitting your bid.

Sincerely,



AMARJEET BENIPAL
District Director

Attachments

Add to section 1-1.01:

Bid Items and Applicable Sections

Item code	Item description	Applicable section
031481	HIGHWAY POST MARKER	82
031482	ALTERNATIVE CRASH CUSHION	83
031483	CONCRETE BARRIER (TYPE 60SD)	83
872130	MODIFYING EXISTING ELECTRICAL SYSTEM	86

Add to section 5-1.09A:

The Department encourages the project team to exhaust the use of partnering in dispute resolution before engagement of an objective third party.

For certain disputes, a facilitated partnering session or facilitated dispute resolution session may be appropriate and effective in clarifying issues and resolving all or part of a dispute.

To afford the project team enough time to plan and hold the session, a maximum of 20 days may be added to the DRB referral time following the Engineer's response to a *Supplemental Potential Claim Record*.

To allow this additional referral time, the project team must document its agreement and intention in the dispute resolution plan of the partnering charter. The team may further document agreement of any associated criteria to be met for use of the additional referral time.

If the session is not held, the DRB referral time remains in effect as specified in section 5-1.43.

Add between the 4th and 5th paragraphs in section 10-1.02 of the RSS for section 10:

At the Route 162 overcrossing location, coordinate your replace asphalt concrete surfacing work with inductive loop detector work as shown to assure existing signal systems are operational before the lanes are specified to be open to traffic.

Add section 12-3.19:

12-3.19 ALTERNATIVE TEMPORARY CRASH CUSHION

12-3.19A General

Section 12-3.19 includes specifications for installing and maintaining an alternative temporary crash cushion at each location as shown.

Submit a copy of the manufacturer's plan and parts list as an informational submittal.

Submit a certificate of compliance for each temporary crash cushion used.

12-3.19B Materials

Alternative temporary crash cushion must be a non-redirective, gating type, and must conform to the descriptions as follows:

Contract Item Description	Manufacturer's Protect Description
ABSORB-350	ABSORB 350 TL-3 (9 element) CRASH CUSHION
ACZ-350	ACZ-350 (Anchorless Crash Cushion CZ System), TL-3
SLED	Sentry Longitudinal Energy Dissipater, TL-3

The successful bidder can obtain alternative temporary crash cushions from the following distributors:

1. ABSORB 350: Barrier Systems, Inc.

Statewide Safety and Signs
130 Grobric Court
Fairfield, CA 9433
Telephone: 1-707-864-9952 or 1-800-770-2644
Fax: 1-707-864-9956

Statewide Safety and Signs
522 Lindon Lane
Nipomo, CA 93444
Telephone: 1-800-559-7080
Fax: -805-929-5786

2. ACZ-350: Energy Absorption Systems, Inc

National Trench Safety
7849 Stockton Blvd
Sacramento, CA 95823
916-387-6300

National Trench Safety
45945 Warm Springs Blvd.
Fremont, CA 94539
510-490-2140

3. SLED: TrafFix Devices Inc.

Capitol Barricade
6001 Elvas Ave
Sacramento, CA 95819
925-580-2013

12-3.19C Construction

Install the crash cushion under the manufacturer's installation instructions.

Attach a Type R or P marker panel to the front of the alternative temporary crash cushion if the closest point of the crash cushion array is within 12 feet of the traveled way. Firmly fasten the marker panel to the crash cushion with commercial quality hardware or by other authorized methods.

12-3.19D Maintenance

Immediately repair alternative temporary crash cushions damaged due to your activities. Remove and replace any crash cushions damaged beyond repair. Repair of alternative temporary crash cushions damaged by traffic is change order work.

Remove alternative temporary crash cushions, including marker panels, at the time of Contract acceptance.

12-3.19E Payment

Not Used

Add to the RSS for section 12-4.03C:

Submit a contingency plan for each of the following activities:

1. HMA Paving
2. Cold Plane Asphalt Concrete Surfaces
3. Striping
4. Replace Asphalt Concrete Surfacing

Discuss the contingency plan with the Engineer at least 5 business days before starting the activity.

Replace "Reserved" in section 12-4.05F with:

Chart no. 6																										
Conventional Highway Lane Requirements																										
County: Glenn							Route: I-5							PM: R0.0/R20.0												
Closure limits: County Road 33, County Road 39, County Road 57 & County Road 68																										
Hour 24 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24																										
Mon-Thu	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	
Fri	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R		
Sat	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R		
Sun	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R		
Legend:																										
R	Provide at least 1 through traffic lane, not less than 11 feet in width, for use by both directions of travel (Reversing Control)																									
REMARKS:																										
Chart no. 7																										
Conventional Highway Lane Requirements																										
County: Glenn							Route: I-5							PM: R0.0/R20.0												
Closure limits: Route 162 overcrossing																										
Hour 24 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24																										
Mon-Thu	R	R	R	R	R	R	R	R	R	R												R	R	R	R	R
Fri	R	R	R	R	R	R	R	R	R	R													R	R	R	R
Sat	R	R	R	R	R	R	R	R	R													R	R	R	R	R
Sun	R	R	R	R	R	R	R	R	R													R	R	R	R	R
Legend:																										
R	Provide at least 1 through traffic lane, not less than 11 feet in width, for use by both directions of travel (Reversing Control)																									
	Work allowed within the highway where shoulder or lane closure is not required																									
REMARKS:																										

Replace "Reserved" in section 12-8 with:

12-8.01 GENERAL

Section 12-8 includes specifications for placing, applying, maintaining, and removing temporary pavement delineation.

Painted traffic stripe used for temporary delineation must comply with section 84-3. Apply 1 or 2 coats.

Temporary signing for no-passing zones must comply with section 12-3.06.

12-8.02 MATERIALS

12-8.02A General

Not Used

12-8.02B Temporary Lane Line and Centerline Delineation

Temporary pavement markers must be the same color as the lane line or centerline markers being replaced.

Temporary pavement markers must be on the Authorized Material List for signing and delineation materials for short-term day or night use, 14 days or less, or long-term day or night use, 180 days or less.

12-8.02C Temporary Edge Line Delineation

Temporary, removable, construction-grade striping and pavement marking tape must be on the Authorized Material List for signing and delineation materials. Apply temporary, removable, construction-grade striping and pavement marking tape under the manufacturer's instructions.

12-8.03 CONSTRUCTION

12-8.03A General

Whenever work activities obliterate pavement delineation, place temporary or permanent pavement delineation before opening the traveled way to traffic. Place lane line and centerline pavement delineation for traveled ways open to traffic. On multilane roadways, freeways, and expressways, place edge line delineation for traveled ways open to traffic.

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.

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.

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

12-8.03B Temporary Lane Line and Centerline Delineation

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 on the Authorized Material List for signing and delineation materials 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.

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

On cold planed surfaces only, when lane lines are obliterated, use dashed 4-inch wide white traffic stripes (Detail 11 on Standard Plans Sheet A20A) for temporary lane line delineation.

Where removal of the white, 4-inch wide, lane line traffic stripe is not required, apply temporary painted traffic stripe for temporary lane line delineation.

Where no-passing centerline pavement delineation is obliterated, install the following temporary no-passing zone signs before opening lanes to traffic. Install a W20-1, "Road Work Ahead," sign from 1,000 to 2,000 feet in advance of a no-passing zone. Install a R4-1, "Do Not Pass," sign at the beginning of a no-passing zone and at 2,000-foot intervals within the no-passing zone. For continuous zones longer than 2 miles, install a W7-3a or W71(CA), "Next ___ Miles," sign beneath the W20-1 sign. Install a R4-2, "Pass With Care," sign at the end of the no-passing zone. The Engineer determines the exact location of temporary no-passing zone signs. Maintain the temporary no-passing zone signs in place until you place the permanent no-passing centerline pavement delineation. Remove the temporary no-passing zone signs when the Engineer determines they are no longer required for the direction of traffic.

12-8.03C Temporary Edge Line Delineation

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 (1) solid, 4-inch wide traffic stripe tape of the same color as the stripe being replaced, (2) traffic cones, (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.

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.

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 for signing and delineation materials.

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

12-8.04 PAYMENT

Not Used

Replace section 39-1.03K of the RSS for section 39 with:

39-1.03K Rumble Strips

Construct rumble strips in the top layer of HMA surfacing by ground-in methods.

Select the method and equipment for constructing ground-in indentations.

Do not construct rumble strips:

1. On structures, approach slabs, or concrete weigh-in-motion slabs
2. At intersections
3. Bordering two-way left turn lanes, within intersections, driveways, or other high-volume turning areas

Construct rumble strips within 2 inches of the specified alignment. The grinding equipment must be equipped with a sighting device enabling the operator to maintain the rumble strip alignment.

Indentations must comply with the dimensions shown and not vary more than:

1. 10 percent in length
2. 0.06 inch in depth
3. 10 percent in width
4. 1 inch in center-to-center spacing between rumble strips

Break rumble strips before and after intersections, driveways, railroad crossing, freeway gore areas, and freeway ramps. Place breaks and break distances as shown. The need for breaks and the break distances may be assessed and adjusted as needed at low volume driveways or other locations if authorized by the engineer.

The Engineer orders grinding or removal and replacement of noncompliant rumble strips to bring them within specified tolerances. Ground surface areas must be neat and uniform in appearance.

The grinding equipment must be equipped with a vacuum attachment to remove residue from the roadbed.

Dispose of removed material.

On ground areas, apply fog seal coat under section 37-4.02.

Rumble strip is measured by the station along the length of the rumble strip without deductions for gaps between indentations.

Replace the paragraphs in section 39-2.01C(2) of the RSS for section 39 with:

The JMF must be based on the Superpave HMA mix design system as described in the MS-2 Asphalt Mix Design Methods by the Asphalt Institute.

For a Type A HMA mixture using RAP substitution greater than 15 percent of the aggregate blend, the asphalt binder grade from the HMA mixture must comply with the binder grade specified in section 39-2.02C. The HMA mixture binder grade must not be stiffer than the PG binder grade specified and must be determined by blending charts for high, intermediate, and low critical temperatures. Original binder requirements, ductility requirements, and footnote d in the table in the 1st paragraph in section 92-1.02B do not apply in the determination of the HMA mixture binder grade using blending charts.

Add to section 39-2.01C(3) of the RSS for section 39:

For RAP substitution greater than 15 percent of the aggregate blend, submit blending calculation sheets and blending charts for high, intermediate, and low critical temperatures. The blending calculation sheets and blending charts must be based on the MS-2 Asphalt Mix Design Methods by the Asphalt Institute. You may use critical temperatures of virgin binder or the maximum theoretical critical temperature of the PG grade of the virgin binder. Critical temperatures must be in whole degree. The calculation sheets must be sealed and signed by an engineer who is registered as a civil engineer in the State or by the AMRL-AASHTO-accredited laboratory manager responsible for the calculations and blending charts.

Add between the heading and the 1st paragraph of section 39-2.01D(2)(c) of the RSS for section 39:

39-2.01D(2)(c)(i) General

Section 39-2.01D(2)(c) applies to Type A HMA mixtures using RAP substitution greater than 15 percent of the aggregate blend.

39-2.01D(2)(c)(ii) Reclaimed Asphalt Pavement Stockpiles

Add to section 39-2.01D(2)(c) of the RSS for section 39:

39-2.01D(2)(c)(iii) Virgin and Recovered Reclaimed Asphalt Pavement Binder

Perform solvent extraction of RAP binder under AASHTO T 164, Method A, and recovery under AASHTO R 59 or ASTM D1856. Test the quality characteristics of the recovered RAP binder under the test methods and frequencies shown in the following table:

Quality characteristic	Test method	Minimum testing frequency
Critical temperatures of RAP binder	AASHTO T 315 and AASHTO T 313	1 per project if RAP is not augmented or 1 per 500 tons of augmented RAP

If you use critical temperature of virgin binder in blending charts, test the quality characteristics of the virgin binder under the test methods and frequencies shown in the following table:

Quality characteristic	Test method	Minimum testing frequency
Critical temperatures of virgin binder	AASHTO T 315 and AASHTO T 313	1 per 5 paving days or 1 per project, whichever is greater

Determine the blended binder grade using blending charts under the MS-2 Asphalt Mix Design Methods by the Asphalt Institute each time the critical temperatures are determined.

Replace "If RAP is used" in item 2 in the list of the paragraph of section 39-2.01D(5) of the RSS for section 39 with:

For RAP substitution greater than 15 percent of the aggregate blend

Replace the row for moisture susceptibility, dry strength, in the table in item 3 in the list of the paragraph of section 39-2.01D(5) of the RSS for section 39 with:

Moisture susceptibility (psi, dry strength)	AASHTO T 283	100–300
---	--------------	---------

Add to the list of the paragraph of section 39-2.01D(5) of the RSS for section 39 with:

4. For RAP substitution greater than 15 percent of the aggregate blend, the asphalt binder grade must comply with the specified binder grade. A tolerance of +2 degrees C may be applied to the critical high and low temperatures of the blended binder. Original binder requirements, ductility requirements, and footnote d in the table in the 1st paragraph in section 92-1.02B do not apply in the determination of the PG binder grade using blending charts.

Replace the row for moisture susceptibility, dry strength, in the 1st paragraph of section 39-2.02B of the RSS for section 39 with:

Moisture susceptibility, dry strength (psi)	AASHTO T 283	100–300
---	--------------	---------

Add to section 39-4.02C of the RSS for section 39:

For RHMA-O, the grade of asphalt binder must be PG 64-16.

Delete the 2nd paragraph of section 82-1.04.

Replace section 83-1.02C(3) with:

83-1.02C(3) Alternative Flared Terminal System

Alternative flared terminal system must be furnished and installed as shown on the plans and under these special provisions.

Obtain the Department-authorized manufacturer's drawing and the manufacturer's check list for the assembly and installation of the alternative flared terminal system from the manufacturer's representative or distributor. Notify the Engineer of the type of alternative flared terminal system to be installed at each location before starting installation activities. Complete, sign, and date the check list for each installed terminal system and submit a copy of the completed and signed check list for each installed location. The Engineer signs and dates the completed check lists, verifying the terminal system at each location was assembled and installed under the manufacturer's instructions and as described.

The allowable alternatives for a flared terminal system must consist of one of the following or a Department-authorized equal.

1. TYPE FLEAT-SP-MGS for steel or FLEAT-W-MGS for wood TERMINAL SYSTEM - Type FLEAT-MGS terminal system must be a Flared Energy Absorbing Terminal 350, system length 37'-6", manufactured by Road Systems, Inc., located in Big Spring, Texas, and must include items detailed for Type FLEAT-MGS terminal system shown on the plans. The Flared Energy Absorbing Terminal 350 can be obtained from the distributor, Universal Industrial Sales, P.O. Box 699, Pleasant Grove, UT 84062, telephone (801) 785-0505 or from the distributor, Gregory Industries, Inc., 4100 13th Street, S.W., Canton, OH 44708, telephone (330) 477-4800.
2. TYPE X-LITE - Type X-Lite terminal system must be a 31" X-Lite Guard Rail End Terminal as manufactured by Barrier Systems, Inc., located in Vacaville, CA, and must include items detailed for Type 31" X-Lite terminal system shown on the plans. The 31" X-Lite Guard Rail End Terminal can be obtained from the distributor, Statewide Safety and Signs, Inc., 130 Grobric Court, Fairfield, CA 94533, telephone (800) 770-2644.
3. TYPE 31" X-TENSION - Type 31" X-Tension terminal system must be a 31" X-Tension Guard Rail End Terminal as manufactured by Barrier Systems, Inc., located in Vacaville, CA, and must include items detailed for Type 31" X-Tension terminal system shown on the plans. The 31" X-Tension Guard Rail End Terminal can be obtained from the distributor, Statewide Safety and Signs, Inc., 130 Grobric Court, Fairfield, CA 94533, telephone (800) 770-2644.

Submit a certificate of compliance for terminal systems.

Terminal systems must be installed under the manufacturer's installation instructions and these specifications. Each terminal system installed must be identified by painting the type of terminal system in neat black letters and figures 2 inches high on the backside of the rail element between system posts numbers 4 and 5. Paint must be metallic acrylic resin type spray paint. Before applying terminal system identification, the surface to receive terminal system identification must be removed of all dirt, grease, oil, salt, or other contaminants by washing the surface with detergent or other suitable cleaner. Rinse thoroughly with fresh water and allow to fully dry.

For Type 31" X-Lite terminal system, two 13'-6 1/2" rail elements must be connected between Post 7 and the Midwest Guardrail System. All crimped posts and line posts must be W6 x 8.5 or W6 x 9 steel posts. All posts, must be, at the Contractor's option, either driven or placed in drilled holes. Space around the crimped posts, Post 2 with attached soil plate and lines posts must be backfilled with selected earth, free of rock, placed in layers approximately 4 inches thick and each layer must be moistened and thoroughly compacted. All blocks must be wood or plastic.

For Type FLEAT-SP-MGS terminal system, install the soil tube with soil plate attached at Post 1, hinged breakaway post at Post 2, and 6'-0" W6 x 9 steel posts at Posts 3 through 7. Use a W6 x 15 steel post at Post 1. The soil tube with soil plate must be, at the Contractor's option, driven with or without pilot holes, or placed in drilled holes. Space around the steel foundation tubes must be backfilled with selected earth, free of rock, placed in layers approximately 4 inches thick and each layer must be moistened and thoroughly compacted.

For Type FLEAT-W-MGS terminal system, install the soil tubes with soil plate attached at Posts 1 and 2, breakaway cable terminal posts at Posts 1 and 2, and controlled release terminal posts at Posts 3 through 6. The soil tubes with soil plates must be, at the Contractor's option, driven with or without pilot holes, or placed in drilled holes. Space around the steel foundation tubes must be backfilled with selected earth, free of rock, placed in layers approximately 4 inches thick and each layer must be moistened and thoroughly compacted. The breakaway cable terminal posts must be inserted into the steel foundation tubes by hand and must not be driven.

For Type 31" X-Tension terminal system, the steel post and soil anchor must be, at the Contractor's option, driven with or without pilot holes, or placed in drilled holes. Space around the steel post and soil anchor must be backfilled with selected earth, free of rock, placed in layers approximately 4 inches thick and each layer must be moistened and thoroughly compacted. The wood terminal posts must be inserted into the drilled holes by hand and backfilled in the same manner as the steel post and soil anchor. Wood terminal posts must not be driven. All blocks must be wood or plastic.

For Type 31" X-Tension terminal system, the steel bottom post and I-beam post must be placed in drilled hole. The soil anchor and steel line posts must be, at the Contractor's option, either driven or placed in drilled holes. Space around the steel bottom post, steel line posts and soil anchor must be backfilled with selected earth, free of rock, placed in layers approximately 4 inches thick and each layer must be moistened and thoroughly compacted. All blocks must be plastic.

After installing the terminal system, dispose of surplus excavated material in a uniform manner along the adjacent roadway where designated by the Engineer.

Replace "Reserved" in the RSS for section 84-6 with:

84-6.01 GENERAL

84-6.01A Summary

Section 84-6 includes specifications for applying thermoplastic traffic stripes and pavement markings with enhanced wet-night visibility.

Thermoplastic must comply with section 84-2.

84-6.01B Submittals

Submit a certificate of compliance for the glass beads.

84-6.01C Quality Control and Assurance

Within 14 days of applying a thermoplastic traffic stripe or pavement marking with enhanced wet-night visibility, the retroreflectivity must be a minimum of 700 mcd/sq m/lx for white stripes and markings and 500 mcd/sq m/lx for yellow stripes and markings. Test the retroreflectivity using a reflectometer under ASTM E 1710.

84-6.02 MATERIALS

Thermoplastic traffic stripes and pavement markings with enhanced wet-night visibility must consist of a single uniform layer of thermoplastic and 2 layers of glass beads as follows:

1. The 1st layer of glass beads must be on the Authorized Material List under high-performance retroreflective glass beads for use in thermoplastic traffic stripes and pavement markings. The color of the glass beads must match the color of the stripe or marking to which they are being applied.
2. The 2nd layer of glass beads must comply with AASHTO M 247, Type 2.

Both types of glass beads must be surface treated for use with thermoplastic under the bead manufacturer's instructions.

84-6.03 CONSTRUCTION

Use a ribbon-extrusion or screed-type applicator to apply thermoplastic traffic stripe.

Operate the striping machine at a speed of 8 mph or slower during the application of thermoplastic traffic stripe and glass beads.

Apply thermoplastic traffic stripe at a rate of at least 0.38 lb/ft of 4-inch-wide solid stripe. The applied thermoplastic traffic stripe must be at least 0.090 inch thick.

Apply thermoplastic pavement marking at a rate of at least 1.06 lb/sq ft. The applied thermoplastic pavement marking must be at least 0.100 inch thick.

Apply thermoplastic traffic stripe and both types of glass beads in a single pass. First apply the thermoplastic, followed immediately by consecutive applications of high-performance glass beads and then AASHTO M 247, Type 2, glass beads. Use a separate applicator gun for each type of glass bead.

You may apply glass beads by hand on pavement markings.

Distribute glass beads uniformly on traffic stripes and pavement markings. Apply high-performance glass beads at a rate of at least 6 lb/100 sq ft of stripe or marking. Apply AASHTO M 247, Type 2, glass beads at a rate of at least 8 lb/100 sq ft of stripe or marking. The combined weight of the 2 types of glass beads must be greater than 14 lb/100 sq ft of stripe or marking.

84-6.04 PAYMENT

Not Used

Add to the beginning of section 86-2.01C(2)(c)(i) of the RSS for section 86:

Use Type 3 conduit for underground installation.

Replace the 1st paragraph of section 86-2.01C(6)(c)(ii) of the RSS for section 86 with:

Use a Type 2 loop wire. Use only Type 2 loop wire for Type E loop detectors.

Replace the 2nd paragraph of section 86-2.01C(8)(b) of the RSS for section 86 with:

Use Method B to insulate a splice.

Add between the 1st and 2nd sentences in the 2nd paragraph of section 86-2.01C(22)(b) of the RSS for section 86:

Saw the slots to allow a minimum of 2 inches of sealant above the top of the uppermost loop wire in the slot.

Do not install loop detectors in or on the subbase layer.

Add between the 11th and 12th paragraphs of section 86-2.01C(22)(b) of the RSS for section 86:

Use elastomeric sealant or hot melt rubberized asphalt sealant to fill slots. Asphaltic emulsion sealant may be used when dense graded hot mix asphalt surfacing will be placed over installed loop conductors

Add to the end of section 86-2.21C(3) of the RSS for section 86:

Modifying a traffic monitoring station and inductive loop detector includes removing, adjusting, or adding:

1. Cables
2. Conductors
3. Detectors
4. Detector handhole

**BID ITEM LIST
03-4F0604**

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
61	850111	PAVEMENT MARKER (RETROREFLECTIVE)	EA	10,800		
62	BLANK					
63	860807	INDUCTIVE LOOP DETECTOR (LS)	LS	LUMP SUM	LUMP SUM	
64	872130	MODIFYING EXISTING ELECTRICAL SYSTEM	LS	LUMP SUM	LUMP SUM	
65	999990	MOBILIZATION	LS	LUMP SUM	LUMP SUM	

TOTAL BID

FOR BID ITEMS:

\$

TOTAL BID

FOR TIME:

$$\frac{\text{WORKING DAYS BID}}{\text{(Do not bid less than 90 days and not more than 120 Days)}} \times \frac{\$8,300.00}{\text{COST PER DAY}} = \$$$

TOTAL BID FOR COMPARISON (COST PLUS TIME):

\$
