

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT				1. CONTRACT ID CODE	PAGE	OF PAGES
				CO PFH 80-1(1) & 2(2)	1	16
2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. (If applicable)			
0001	11-25-2003		CO PFH 80-1(1) & 2(2)			
6. ISSUED BY	CODE	7. ADMINISTERED BY (If other than Item 6)		CODE		
Federal Highway Administration Central Federal Lands Highway Division, HFAC-16 555 Zang Street, Room 259 Lakewood, CO 80228-1010	69050001					
8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)				(✓)	9A. AMENDMENT OF SOLICITATION NO.	
				✓	CO PFH 80-1(1) & 2(2)	
					9B. DATED (SEE ITEM 11)	
					11-3-2003	
					10A. MODIFICATION OF CONTRACT/ORDER NO.	
					10B. DATED (SEE ITEM 13)	
CODE	FACILITY CODE					

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers is extended, is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:

(a) By completing Items 8 and 15, and returning one copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

(✓)	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
	D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor is not, is required to sign this document and return *(SEE 11. ABOVE)* copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

INVITATION FOR BID DOCUMENT (all changes as noted are effective 11/25/2003):

**Remove Page A-1. Replace with new Page A-1; change to bid opening date as a result of this amendment from 12/04/2003 to 12/11/2003. Time and Location remain the same.

GUANELLA PASS ROAD SPECIAL CONTRACT REQUIREMENTS (all changes as noted are effective 11/25/2003):

**Remove Pages I-28, I-29, I-30 and I-32. Replace with new Pages I-28, I-29, I-30, I-30A and I-32; changes made to Subsections 152.02 and 152.03. Page I-30A inserted to retain pagination and formatting.

**Remove Page I-56. Replace with new Page I-56; Subsection 205.11 added.

**Remove Page I-70 and I-71. Replace with new Pages I-70, I-71 and I-71A; changes made to Subsections 255.04 and 255.05. Page I-71A inserted to retain pagination and formatting.

**Remove Page I-169. Replace with new Page I-169; changes made to Table 704-7 of Subsection 704.13.

AMENDMENT 0001 CONTINUED ON PAGE 2; CO PFH 80-1(1) & 2(2)

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)	
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA	16C. DATE SIGNED
(Signature of person authorized to sign)		BY (Signature of Contracting Officer)	

CONTRACT MODIFICATION

**STANDARD FORM 30
CONTINUATION SHEET**

REFERENCE NO. OF DOCUMENT BEING CONTINUED

PAGE

OF

PAGES

CO PFH 80-1(1) & 2(2)

2

16

NAME OF OFFEROR OR CONTRACTOR

AMENDMENT 0001 CONTINUED FROM PAGE 1; CO PFH 80-1(1) & 2(2)

7TH STREET BRIDGE & ROAD IMPROVEMENTS SPECIAL CONTRACT REQUIREMENTS (all changes as noted effective 11/25/2003):

**Remove Pages I-20 and I-21. Replace with new Pages I-20 and I-21; changes made to Subsections 152.02 and 152.03.

GUANELLA PASS PLAN SHEETS

**Remove Sheet M67. Replace with new Sheet M67; changes referencing Bid Item 63406 are denoted by a triangle and the No. 1

Amendments are posted on our website at: <http://www.cflhd.gov/procurement> under "Current Solicitations" and on the CFLHD FedBizOpps site at: http://www.eps.gov/spg/DOT/FHWA/68/postdate_1.html

FAILURE TO ACKNOWLEDGE THIS AMENDMENT BY THE DESIGNATED DATE AND HOUR SPECIFIED ABOVE MAY RESULT IN REJECTION OF YOUR BID (REFER TO ITEM 11.)

SOLICITATION, OFFER, AND AWARD (Construction, Alteration, or Repair)		1. SOLICITATION NO. CO PFH 80-1(1) & 2(2)	2. TYPE OF SOLICITATION <input checked="" type="checkbox"/> SEALED BID (IFB) <input type="checkbox"/> NEGOTIATED (RFP)	3. DATE ISSUED NOVEMBER 3, 2003	PAGE OF PAGES 1 OF 3
IMPORTANT - The "offer" section on the reverse must be fully completed by offeror.					
4. CONTRACT NO.		5. REQUISITION/PURCHASE REQUEST NO.		6. PROJECT NO. CO PFH 80-1(1) & 2(2)	
7. ISSUED BY: Federal Highway Administration Central Federal Lands Highway Division 555 Zang Street, Room 259 Lakewood, CO 80228			8. ADDRESS OFFER TO: Larry C. Smith, Division Engineer Federal Highway Administration Central Federal Lands Highway Division Attn: Lori K Rivera HFAC-16 555 Zang Street, Room 259 Lakewood, Colorado 80228 Bid Opening will be held on the Third Floor Conference Room B		
9. FOR INFORMATION CALL		A. NAME: See Continuation of SF 1442		B. TELEPHONE NO. (Include area code) (NO COLLECT CALLS) See Continuation of SF 1442.	

SOLICITATION**NOTE:** In sealed bid solicitations "offer" and "offeror" mean "bid" and "bidder".

10. THE GOVERNMENT REQUIRES PERFORMANCE OF THE WORK DESCRIBED IN THESE DOCUMENTS (TITLE, IDENTIFYING NO., DATE):

CONSTRUCTION OF COLORADO PFH 80-1(1) & 2(2), GUANELLA PASS ROAD PHASE I & 7TH STREET BRIDGE AND ROAD IMPROVEMENTS, IN STRICT ACCORDANCE WITH:

1. FAR CONTRACT CLAUSES
2. DEPARTMENT OF LABOR, DAVIS BACON MINIMUM WAGE RATES
3. STANDARD SPECIFICATIONS FOR CONSTRUCTION OF ROADS AND BRIDGES ON FEDERAL HIGHWAY PROJECTS, FP-96 (1996)
4. SPECIAL CONTRACT REQUIREMENTS
5. BID SCHEDULE
6. PLANS

* ALL WORK MUST BE COMPLETED BY AUGUST 31, 2006

11. The Contractor shall begin performance within 10 calendar days and complete it within calendar days after receiving award, notice to proceed. This performance period is mandatory, negotiable.12A. THE CONTRACTOR MUST FURNISH ANY REQUIRED PERFORMANCE AND PAYMENT BONDS?
(If "YES," indicate within how many calendar days after award in Item 12B.) YES NO

12B. CALENDAR DAYS

10

13. ADDITIONAL SOLICITATION REQUIREMENTS:

- A. Sealed offers in original and 0 copies to perform the work required are due at the place specified in Item 8. by 2:00 pm (hour) local time ~~12/04/03~~ 12/11/03 (date). If this is a sealed bid solicitation, offers will be publicly opened at that time. Sealed envelopes containing offers shall be marked to show the offeror's name and address, the solicitation number, and the date and time offers are due.
- B. An offer guarantee is, is not required.
- C. All offers are subject to the (1) work requirements, and (2) other provisions and clauses incorporated in the solicitation in full text or by reference.
- D. Offers providing less than 60 calendar days for Government acceptance after the date offers are due will not be considered and will be rejected.

Partial payments for stockpiled manufactured material (aggregates) will be based on Contractor process control test results. If test results show the material to be out-of-specification, or in "reject" where statistical evaluation procedures are used, no payment for stockpiled materials will be made.

Partial payment for material does not constitute acceptance of such material for use in completing items of work. Partial payments will not be made for living or perishable material until incorporated into the project.

Partial payments for material will not exceed the lesser of:

- (1) 80 percent of the contract bid price for the item, or
- (2) 100 percent of amount supported by copies of invoices submitted.

The quantity paid will not exceed the corresponding quantity estimated in the contract.

109.09 Final Payment. Delete the first sentence and substitute the following:

FAR Clause 52.232-5, Payment under Fixed-Price Construction Contracts, and FAR Clause 52.232-27 - Prompt Payment for Construction Contracts are supplemented as follows:

Section 152. – CONSTRUCTION SURVEY AND STAKING

Construction Requirements

152.02 General. Delete the first paragraph and substitute the following:

The Government will furnish to the Contractor one copy of each of the following information:

- 3D coordinates and offset distance from centerline for subgrade and surface course finishing stakes at ~~20 meter intervals and miscellaneous intermediate stations~~ *all cross-section locations as shown in plans.*
- Slope stake books containing centerline grade and slope staking information at ~~20 meter station intervals and miscellaneous intermediate stations~~ *all cross-section locations as shown in plans.*
- Computer listings containing: horizontal alignment, vertical alignment, earthwork quantities, and staking details showing superelevation template data and slope information.

The Government will provide files for downloading 3D data. Following is the information that will be provided electronically:

- 3D coordinates of traverse control points and benchmarks.
- 3D coordinates of grade finishing stakes.

The Government will perform the following:

- Establish basic survey control points for vertical and horizontal control of the project.
- ~~Set centerline stakes, take cross-sections, and set reference hubs at 20 meter intervals and miscellaneous intermediate stations.~~

Add the following to the fourth paragraph:

Protect all land survey monuments, property corners, USGS bench marks and USGS control points. Move and reference those which fall within the construction limits according to Subsection 107.02, Protection and Restoration of Property and Landscape. Coordinate the new locations with the CO.

Add the following to the first paragraph on page 67:

Use the procedures contained in the current "Location/Construction Surveying Guide" issued by the U.S. Department of Transportation, Central Federal Lands Highway Division, Lakewood, Colorado, as a guide to the work in this Section.

Delete the second sentence of the second paragraph and substitute the following:

~~Reestablish missing terrain cross-section reference hubs, control points, and stakes before slope staking begins.~~

Add the following:

Furnish a practicable schedule of staking activities with the construction schedule submitted according to Section 155. Include the dates and sequence of staking requirements.

152.03 Survey and Staking Requirements. Add the following before the first paragraph:

General. ~~Construction survey and staking includes layout, controls, and measurement as necessary to construct the project. Perform the work listed below according to Subsection 152.03(a) through 152.03(m):~~

- ~~Control Points.~~
- ~~Roadway Cross Sections~~
- ~~Slope Stakes and References: Both sides of the road.~~
- ~~Clearing and Grubbing Limits: Both sides of the road and for all parking areas.~~
- ~~Centerline Reestablishment: 7th Street and Argentine Street.~~
- ~~Grade Finishing Stakes: Top of subgrade and top of roadway aggregate.~~
- ~~Drainage Structures: Flowlines, curbs, trench grates.~~
- ~~Bridges and abutments.~~
- ~~Retaining Walls.~~
- ~~Miscellaneous survey and staking: Driveways, sidewalks.~~
- ~~Intermediate Survey and Staking.~~

(b) Roadway cross-sections. Delete the text and substitute the following:

~~Take roadway cross sections normal to centerline. When the centerline curve radius is less than or equal to 75 meters, take cross sections at a maximum centerline spacing of 10 meters. When the centerline curve radius is greater than 75 meters, take cross sections at a maximum centerline spacing of 20 meters. Take additional cross sections at significant breaks in topography and at changes in the typical section. Ensure that, at a minimum, roadway cross sections are taken at each cross section station shown in the plans. Along each cross section, measure and record points at breaks in topography, but no further apart than 5 meters. Space the points so that the maximum variation in vertical distance from a straight line between two consecutive points and the ground line does not exceed ± 0.2 meters. Measure and record points to at least the anticipated slope stake and reference locations. Reduce all cross section distances to horizontal distances from centerline.~~

~~Submit the cross sectional data in GEOPAK ASCII text format: station, offset, elevation, north coordinate, east coordinate, p-code text format. Include a file header that defines the data type of the column. (Contact Central Federal lands Survey Manager, at 303-716-2078 for more information on the format.) Include one shot per line in the submitted files showing the following data:~~

~~Station (nominal), offset from centerline, elevation, north coordinate, east coordinate, p-code (Feature code: RH for reference hub, CL for centerline).~~

~~Deliver all data to the CO after completing the roadway cross section survey. Submit data to CO at least 10 days prior to anticipated construction. Do not begin embankment construction or excavation operations on the proposed site until the design profile has been verified. The CO will send the cross sectional data to CFL Survey manager to review for survey sufficiency. If significant differences in terrain are found, the Design Engineer will modify the profile if necessary to match the new terrain. If the design profile is modified, new design data will be provided for only those locations where the design profile has been modified. (The Design Engineer will re-run all cross sections using the new terrain to provide final earthwork quantities). It will be the Contractor's responsibility to re-catch slope stakes according to Subsection 152.03(e).~~

(c) Slope stakes and references. Delete the first sentence and substitute the following:

Set slope stakes and references on both sides of centerline using the following criteria:

- *20 meter slope stakes along roadway*
- *10 meter intervals when centerline curves radius is less than or equal to 75 meters*
- *5 meter intervals when centerline curves radius is less than or equal to 25 meters*
- *Miscellaneous intermediate sections where sub grade widths vary from typical sections, e.g. guardrail end terminals, drainage inlet treatment in cut slopes, and pullouts*

(e) Centerline reestablishment. Delete the text and substitute the following:

~~Reestablish centerline from instrument control points. The maximum spacing between centerline points is 10 meters when centerline curve radius is less than or equal to 75 meters. When the centerline curve radius is greater than 75 meters, the maximum distance between centerline points is 20 meters. Reestablish centerline as many times as necessary to construct the work.~~

(f) **Grade finishing stakes.** Delete the third paragraph and substitute the following:

~~The maximum longitudinal spacing between stakes is 10 meters when the centerline curve radius is less than or equal to 75 meters. When the centerline curve radius is greater than 75 meters, the maximum longitudinal spacing between stakes is 20 meters.~~

The maximum longitudinal spacing between stakes is:

- *5 meters when the centerline curve radius is less than or equal to 25 meters.*
- *10 meters when the centerline curve radius is less than or equal to 75 meters.*
- *20 meters when the centerline curve radius is greater than 75 meters.*

The maximum transverse spacing between stakes is 10 meters. Reset grade finishing stakes as many times as necessary to construct the subgrade and each aggregate course. Use brushes or guard stakes at each stake.

Delete Table 152-1 and substitute the following:

Table 152-1
Construction Survey and Staking Tolerances ⁽⁷⁾

Staking Phase	Horizontal	Vertical
Existing Government network control points	±20 mm	±8 mm * \sqrt{K} ⁽⁵⁾
Local supplemental control points set from existing Government network points	±10 mm	±3 mm * \sqrt{N} ⁽⁶⁾
Centerline points ⁽¹⁾ – (PC), (PT), (POT), and (POC) including references	±10 mm	±10 mm
Other centerline points	±50 mm	±50 mm
Cross-section points and slope stakes ⁽²⁾	±50 mm	±50 mm
Slope stake references ⁽²⁾	±50 mm	±50 mm
Culverts and minor drainage structures	±50 mm	±20 mm
Retaining walls and curb and gutter	±20 mm	±10 mm
Bridge substructures	±10 mm ⁽³⁾	±10 mm
Bridge superstructures	±10 mm ⁽³⁾	±10 mm
Clearing and grubbing limits	±500 mm	---
Roadway subgrade finish stakes ⁽⁴⁾	±50 mm	±10 mm
Roadway finish grade stakes ⁽⁴⁾	±50 mm	±10 mm

⁽¹⁾ Centerline points: PC – point of curve; PT – point of tangent; POT – point on curve.

⁽²⁾ Take the cross-sections normal to the centerline ±1 degree.

⁽³⁾ Bridge control is established as a local network and the tolerances are relative to that network.

⁽⁴⁾ Includes paved ditches

⁽⁵⁾ K is the distance in kilometers

⁽⁶⁾ N is the number of instrument setups.

⁽⁷⁾ At 95% confidence level. Tolerances are relative to existing Government network control points.

Add the following Subsection:

(n) Reference hub establishment. Establish reference hubs and guard stakes on both sides of centerline at 20 meter station intervals and each intermediate cross-section as shown in the plans, according to the offset distance and elevation data furnished. Reference hubs shall be 19 millimeter square, 300 millimeter long oak or ash (hardwood) stakes driven flush with the natural ground. If rocky soil prohibits the use of stakes this long, 200 millimeter stakes can be substituted. Reference hubs shall be set approximately 6- 2 meters outside of the proposed cut limits and 5 meters outside of the proposed fill limits, except in rock cuts and wall areas. Should the Contractor be unable to set any of the reference hubs because of obstructions such as trees or boulders, alternate locations for the hubs shall be determined and computed in the field by the contractor. The alternate point for the hub shall be along the station right-angle line to a more usable location. This move should be of minimal distance. Centerline points shall be 12d light boat nails (or equivalent) with cloth flagging if the points fall within the existing highway surface, or 19 millimeter by 38 millimeter by 450 millimeter guard stakes if they fall outside the existing roadway. Reference hub and centerline guard/offset stakes shall be 19 millimeter by 38 millimeter by 450 millimeter finished size pine stakes painted white. Remove and dispose of any reference hubs and guard stakes previously placed by the Government.

When blasting boulders, mudcapping will not be allowed. Drill and load explosives into the core of the boulder.

Measurement

205.11 Delete the text and substitute the following:

Measure only drilling and blasting of boulders on existing slopes as directed by the CO. Do not measure any other drilling and blasting for direct payment.

**Section 208. – STRUCTURE EXCAVATION AND BACKFILL
 FOR SELECTED MAJOR STRUCTURES**

Construction Requirements

208.04 General. Delete the last two sentences of the third paragraph and substitute the following:

Where support systems, shield systems, or other protective systems are to be used, design the shoring according to Section 562 and submit working drawings and construction details according to Subsection 104.03.

208.06 Cofferdams. Delete the first two sentences of the second paragraph and substitute the following:

Submit working drawings showing proposed methods and construction details of cofferdams according to Subsection 104.03 and Section 562.

Measurement

208.13 Delete the two paragraphs after paragraph (e) and substitute the following:

Measure foundation fill by the cubic meter in place. Limit the volume measured to that placed inside vertical (and sloping) planes as shown on the drawing details. Use these planes to determine pay quantities regardless of the amount of material placed outside these planes.

Section 209. – STRUCTURE EXCAVATION AND BACKFILL

Construction Requirements

209.09 Bedding.

(b) Culverts. Delete the third sentence and substitute the following:

When no class is specified, use bedding material that conforms to class C and to Table 2 of AASHTO M 145 for Classifications A-1, A-2, or A-3 soils.

Add the following:

If lean concrete backfill is used, the bedding requirements for (2) Class B and (3) Class C are waived.

Where installing plastic pipe, use Class B.

(c) Supplemental Design Submittal. Submit the following additional information for wire-faced systems not listed at the end of Subsection 255.03(a) and all concrete-faced wall systems.

- (1) Examples of successful projects (design, construction, and in-service performance with a public agency)
- (2) Name, address, and telephone number of agency contact
- (3) Narrative descriptions and photos of example projects
- (4) Limitations and constraints of the system.
- (5) Details of wall elements (procedures for field and laboratory evaluation including instrumentation and special requirements, if any).
- (6) Sample material and construction control specifications showing material type, certifications, field-testing, acceptance/rejection criteria, and placement procedures.
- (7) Typical unit costs, supported by data from actual projects.
- (8) Laboratory and field-test results which support the system design criteria.
- (9) Information substantiating all partial factors of safety used in establishing the reinforcement elements long-term design strength.
- (10) Additional information requested by the CO.

(d) Temporary shoring. When required, temporary shoring shall be designed using one of the methods described in the California Trenching and Shoring Manual, that was current at time of contract award. The manual is available from the California Department of Transportation or online at www.dot.ca.gov.

255.04 Wall Erection. Erect the wall according to these specifications, the drawings, and manufacturer's recommendations. When requested, have an experienced field representative from the wall system manufacturer available during the first three days of wall erection and as otherwise requested.

(a) Cast-in-place concrete form liner faced walls

Wire-faced walls are to be constructed a minimum of 12 months prior to adding the cast-in-place concrete form liner wall facing. The cast-in-place concrete form liner facing shall not be constructed until the welded wire face wall has been accepted. Grade and compact the foundation for the concrete wall facing a minimum of 500-mm from face of wire-faced walls. Attach tie wires to the welded-wire facing at a maximum center-to-center spacing of 455-mm. Attach welded-wire fabric reinforcement mesh to the tie wires. Cast-in-place concrete to be a minimum of 100-mm thick.

Install the concrete form liner and finish the surface according to Section 613.

(b) Wire-faced walls.

Place backing mats and 6-mm hardware cloth in successive horizontal lifts as backfill placement proceeds. Connect, tighten, and anchor soil reinforcement elements to the wall facing units before placing backfill. ~~The Design and construct the MSE wall and the components shall be designed and constructed to~~ **account for up to 50-mm of settlement per basket in the face without excessive bulging of the facing mat. Construct the wall to** meet the following tolerances:

Description	Requirement
1. Wall batter	±50-mm per 3.0-meters of wall height and 1% for the overall wall height.
2. Wall height	±25-mm per 3.0-meters of wall height and a maximum of 100-mm.
3. Horizontal and vertical alignment	±50-mm at any point in the wall when measured with a 3.0-meter straightedge.
4. Separation of facing mat	<i>Outside of facing mat shall be within 40-mm from MSE facing fill at all locations.</i>
4-5. Reinforcement elevation	± 50 Within 50-mm of above design elevation and within 25 50 -mm of above the corresponding connection elevation at the wall face. <i>Reinforcement shall not be placed below corresponding connection elevation.</i>
5- 6. Reinforcement inclination	± Within 1% slope from horizontal.

All wire-faced walls shall include hardware cloth behind the wire face unless backfill adjacent to wire face is larger than wire face opening. Place a Type II-B (Subsection 714.01) geotextile between the MSE wall facing fill and reinforced fill (Subsection 704.13).

Wire-faced walls shall be terminated at the beginning and end with a turnback of the wall facing a minimum of 500-mm into the fill per manufacturers recommendations

255.05 Backfilling. Backfill the reinforced volume with reinforced fill in *loose* lifts not to exceed 150-mm where hand compaction is used or in *loose* lifts not to exceed ~~300~~ **250**-mm where heavy compaction equipment is used. Place, spread, and compact reinforced fill over the reinforcement in a manner that prevents development of slack in the reinforcement. Compact reinforced fill according to Subsection 204.11. Ensure that no voids exist below the reinforcing elements. Where the reinforced volume supports spread footings for bridges or other structural loads, compact the top 1.5-meters to at least 100 percent of the maximum density according to AASHTO T99 method C.

Use the MSE wall facing fill within 1.0-meters of the wall face. ***Place MSE wall facing fill in loose lifts not exceeding 300-mm and densify using hand operated equipment. Place MSE wall facing fill in sequence with reinforced fill such that the top elevation of the adjacent materials are within 300-mm of one another.*** ~~No compaction is required of the MSE wall facing fill.~~ Do not damage or disturb the facing or reinforcing elements. Do not operate equipment directly on top of the reinforcing elements. ~~Correct all damaged, misaligned, or distorted wall elements.~~ ***Remove and replace all damaged, misaligned, or distorted wall components.***

Place and compact behind the reinforced volume with retained soil according to Subsections 204.10 and 204.11. At the end of the day's operation, slope the last lift of backfill away from the wall face to direct surface runoff away from the wall face. Do not allow surface runoff from adjacent areas to enter the wall construction area.

255.06 Drainage. Subsurface drainage is required. Install the drainage system as shown in M605-05. The CO may require supplemental drainage when seepage is identified in the excavation.

255.07 Acceptance. Structure excavation, reinforced fill, retained fill, and foundation fill will be evaluated under Section 209.

**Table 704-6
Reinforced Fill Gradation**

Sieve Size	Percent by Mass Passing Designated Sieve (AASHTO T 27 and T 11)
100 mm	100
75 mm	75 – 100
4.75 mm	30 – 75
75 µm	0 – 20

(b) Retained fill. Furnish sound, durable, granular soil free from organic matter or other deleterious material (such as shale or other soft particles with poor durability). Remove all rock particles and hard earth clods larger than 300-mm in the longest dimension.

(c) MSE Wall Facing Fill. Furnish sound, durable, and pervious granular soil free from organic matter or other deleterious material (such as shale or other soft particles with poor durability) conforming to the following:

Quality requirements.

(i) Gradation	Table 704-7
(ii) Sodium sulfate soundness loss (5 cycles)	15% max.
(iii) Los Angeles abrasion, AASHTO T 96	50% max.

**Table 704-7
MSE Wall Facing Fill Gradation**

Sieve Size	Percent by Mass Passing Designated Sieve (AASHTO T 27 and T 11)
100 mm	100
75 mm	75 – 100
37.5 mm	0 – 60
19 50 mm	0 – 5

Section 152. – CONSTRUCTION SURVEY AND STAKING**Description****152.01** Delete the first sentence and substitute the following:

Furnish technically qualified survey crews experienced in highway construction and capable of performing in a timely and accurate manner.

Construction Requirements**152.02 General.** Delete the first paragraph and substitute the following:

The Government will furnish to the Contractor one copy of each of the following information:

- 3D coordinates and offset distance from centerline for subgrade and surface course finishing stakes at 20 meter intervals and miscellaneous intermediate stations.
- Slope stake books containing centerline grade and slope staking information at 20 meter station intervals and miscellaneous intermediate stations.
- Computer listings containing: horizontal alignment, vertical alignment, earthwork quantities, and staking details showing superelevation template data and slope information.

The Government will provide files for downloading 3D data. Following is the information that will be provided electronically:

- 3D coordinates of traverse control points and benchmarks.
- 3D coordinates of grade finishing stakes.

The Government will perform the following:

- Establish basic survey control points for vertical and horizontal control of the project.
- ~~Set centerline stakes, take cross sections, and set reference hubs at 20 meter intervals and miscellaneous intermediate stations.~~

Add the following to the fourth paragraph:

Protect all land survey monuments, property corners, USGS bench marks and USGS control points. Move and reference those which fall within the construction limits according to Subsection 107.02, Protection and Restoration of Property and Landscape. Coordinate the new locations with the CO.

Add the following to the first paragraph on page 67:

Use the procedures contained in the current "Location/Construction Surveying Guide" issued by the U.S. Department of Transportation, Central Federal Lands Highway Division, Lakewood, Colorado, as a guide to the work in this Section.

Delete the second sentence of the second paragraph and substitute the following:

Reestablish missing ~~terrain cross-section reference hubs, control points, and stakes~~ before slope staking begins.

Add the following:

Furnish a practicable schedule of staking activities with the construction schedule submitted according to Section 155. Include the dates and sequence of staking requirements.

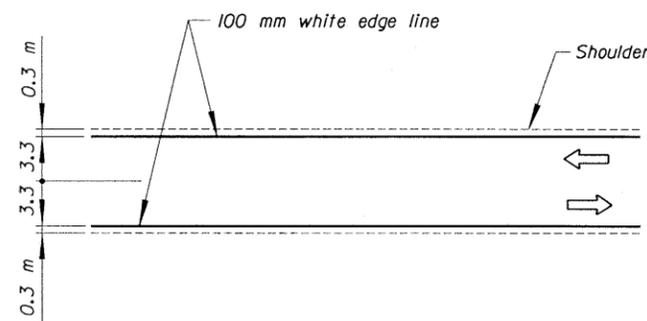
152.03 Survey and Staking Requirements. Add the following before the first paragraph:

General. Construction survey and staking includes layout, controls, and measurement as necessary to construct the project. Perform the work listed below according to Subsection **152.03(a)** through **152.03(m)**:

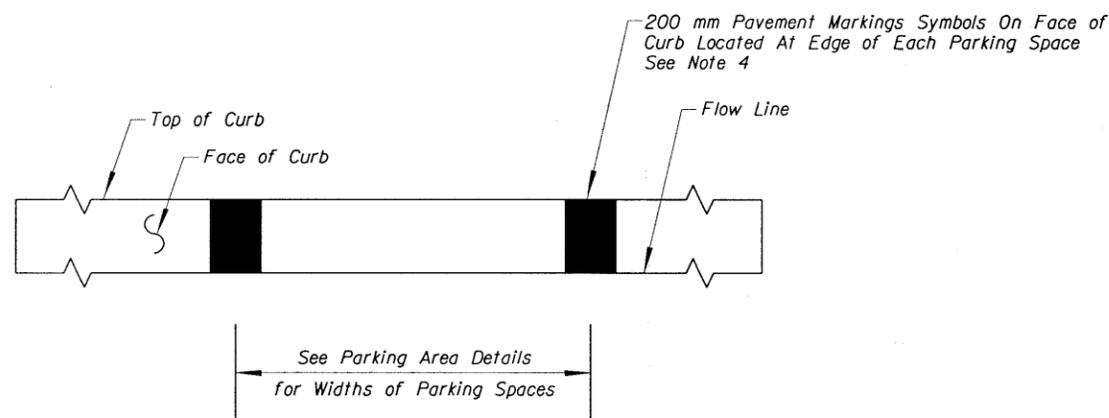
- Control Points.
- Roadway Cross Sections
- Slope Stakes and References: Both sides of the road.
- Clearing and Grubbing Limits: Both sides of the road ~~and for all parking areas.~~
- Centerline Reestablishment: 7th Street and Argentine Street.
- Grade Finishing Stakes: Top of subgrade and top of roadway aggregate.
- Drainage Structures: Flowlines, curbs, trench grates.
- Bridges and abutments.
- ~~Retaining Walls.~~
- Miscellaneous survey and staking: Driveways, sidewalks.
- Intermediate Survey and Staking.

PERMANENT PAVEMENT MARKING SUMMARY

Detail	Item number		Schedule			6340 BA	63406
	Station	to Station	A	B	C	Pavement marking type B, solid m	Pavement markings, symbols Each
Mainline							
	16+215	to 16+253	x	x	x	100	
	22+501	to 22+536	x	x	x	94	
	23+722	to 23+750	x	x	x	74	
	23+985	to 24+010	x	x	x	60	
Parking Areas							
	Parking Lot at Station 16+230		x	x	x		6
	Upper Summit Parking Area		x	x	x		58
	Lower Summit Parking Area		x	x	x		46
	Silver Dollar Lake Parking Area		x	x	x		19
Schedule A - TOTALS						328	129
Schedule B - TOTALS						328	129
Schedule C - TOTALS						328	129



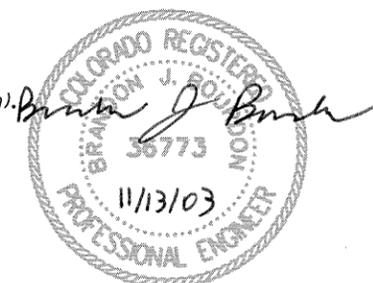
DETAIL A
Edge Line Detail
Two-way traffic



DETAIL B
Pavement Markings Symbols Detail

NOTE:

1. Station limits shown are approximate and will be verified and adjusted by the CO, if necessary.
2. Apply two coats waterborne traffic paint at an application rate of 5.2 m²/liter each coat.
3. Measurement for payment will be made under item 63401BA, Pavement markings type B, solid.
4. Use White Type E pavement markings for Pavement Markings Symbols on face of curb.
5. Pavement Marking Symbols for parking shall be paid for as 63406, Pavement markings, symbols (each).



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

METRIC SPECIAL

**PERMANENT PAVEMENT MARKING
DETAILS AND SUMMARY**

SHEET 1 OF 1

PROJECT SPECIFIC DRAWING

SPECIAL
M634

1 REVISED 11/25/2003