

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT			1. CONTRACT ID CODE J	PAGE OF PAGES 1 2
2. AMENDMENT/MODIFICATION NO. 0001	3. EFFECTIVE DATE 07-Mar-2003	4. REQUISITION/PURCHASE REQ. NO. W68MD9-2351-3933	5. PROJECT NO.(If applicable)	
6. ISSUED BY USA ENGINEER DISTRICT, SEATTLE ATTN: CENWS-CT P.O. BOX 3755 SEATTLE WA 98124-3755	CODE DACW67	7. ADMINISTERED BY (If other than item 6) See Item 6		
8. NAME AND ADDRESS OF CONTRACTOR (No., Street, County, State and Zip Code)		X	9A. AMENDMENT OF SOLICITATION NO. DACW67-03-B-0004	
		X	9B. DATED (SEE ITEM 11) 11-Feb-2003	
			10A. MOD. OF CONTRACT/ORDER NO.	
			10B. DATED (SEE ITEM 13)	
CODE	FACILITY CODE			
11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS				
<input checked="" type="checkbox"/> The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offer <input type="checkbox"/> is extended, <input checked="" type="checkbox"/> is not extended. Offer 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 <u>1</u> 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 <input type="checkbox"/> is not, <input type="checkbox"/> is required to sign this document and return _____ copies to the issuing office.				
14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.) Title: Construct Roads, Parking Lot and Taxiway, Missoula Fire and Technology Center (MFTC), Missoula, Montana SEE ATTACHED CONTINUATION SHEET				
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)		
		TEL: _____ EMAIL: _____		
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)	06-Mar-2003	

SECTION SF 30 BLOCK 14 CONTINUATION PAGE

SUMMARY OF CHANGES

- a. This amendment is issued to reflect changes to this Solicitation.
- b. Replace the attached Schedule B to reflect the revisions to Line Items 0002 and 0005.
- c. Replace Section 00800, Special Clauses, in its entirety, with the attached Section 00800 to reflect the “Drawing Sheet C-19 by notation” on page 00800-14, in the Special Clauses.
- d. Replace Section 01001, in its entirety, with the attached Section 01001, to reflect changes in Paragraph 1.2.1.2.
- e. Replace Section 01005, in its entirety, with the attached Section 01005, to reflect changes in Paragraph 1.4.2. and to add paragraph 1.7.
- f. Replace Section 01025, in its entirety, with the attached Section 01025, to reflect corresponding changes in Schedule B.
- g. Replace Section 02150, in its entirety, with the attached Section 02150, to reflect an additional Paragraph numbered 1.9.
- h. All other terms and conditions to the Solicitation remain unchanged.
- i. The Bid Opening Date and Time remains 18 March 2003, 2:00PM Local Time.
- j. There are no other changes as a result of this modification.

(End of Summary of Changes)

SCHEDULE

<u>Item No.</u>	<u>Description of Item</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Amount</u>
BASE ITEMS					
0001	All Work to Construct Frontage Road, and Parking Lots C and D	1	JOB	L.S.	\$_____
0002	All Work to Construct Airbase Taxiway F except for Item 0007 <u>0006</u>	1	JOB	L.S.	\$_____
0003	All Work to Construct Highway 10 Stations 341+00 to 357+00	1	JOB	L.S.	\$_____
0004	All Work for As-Built Drawings as specified in Section 01702 from preparation to final approval	1	JOB	L.S.	\$5,000.00
TOTAL BASE ITEMS					\$_____
OPTIONAL ITEMS					
0005	All Work to Construct Highway 10 Stations 336+00 to 341+00, and 357+00 to 365+77 <u>361+87</u>	1	JOB	L.S.	\$_____
0006	All Work to Construct Pavement Extension at Airbase Taxiway F	1	JOB	L.S.	\$_____
TOTAL OPTIONAL ITEMS					\$_____
TOTAL BASE AND OPTIONAL ITEMS					\$_____

NOTE: The dollar amount established in Item No. 0004 shall not be revised by bidders.

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SPECIAL CLAUSES

SC-1. COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK (APR 1984) (FAR 52.211-10).

(a) The Contractor shall be required to (1) commence work under this Contract within 10 calendar days after the date the Contractor receives the notice to proceed, (2) prosecute the work diligently, and (3) complete the entire work ready for use not later than the completion dates as set forth below for the respective item of work. The time stated for completion shall include final cleanup of the premises.

(b.1) All construction work shall be complete for ATB Taxiway F by 1 June 2003.

(b.2) All other construction work shall be complete by 1 October 2003.

(c). Exception to Completion Period(s): In case the Contracting Officer determines that completion of seeding, and establishment of same is not feasible within the completion period(s) stated above, the Contractor shall accomplish such work in the first planting period following the contract completion period and shall complete such work as specified, unless other planting periods are directed or approved by the Contracting Officer.

The completion date is based on the assumption that the successful offeror will receive the notice to proceed by March 31, 2003. The completion date will be extended by the number of calendar days after the above date that the Contractor receives the notice to proceed, except to the extent that the delay in issuance of the notice to proceed results from the failure of the Contractor to execute the Contract and give the required performance and payment bonds within the time specified in the offer.

SC-2. LIQUIDATED DAMAGES - CONSTRUCTION (SEP 2000) (FAR 52.211-12)

(a) If the Contractor fails to complete the work within the time specified in the Contract, or any extension, the Contractor shall pay to the Government as liquidated damages, the sum of \$2,094.00 for each day of delay until the work is completed or accepted.

(b) If the Government terminates the Contractor's right to proceed, the resulting damages will continue to accrue until the work is completed. These liquidated damages are in addition to excess cost of repurchase under the Termination clause of the CONTRACT CLAUSES.

(c) Exception to Liquidated Damage: In case the Contracting Officer determines that completion of work stated above in paragraph Exception to Completion Period(s) is not feasible during the completion period(s) stated in SC-1, such work will be exempted from liquidated damages.

SC-3. TIME EXTENSIONS (Sept 2000) (FAR 52.211-13): Time extensions for contract changes will depend upon the extent, if any, by which the changes cause delay in the completion of the various elements of construction. The change order granting the time extension may provide that the Contract completion date will be extended only for those specific elements related to the changed work and that the remaining contract completion dates for all other portions of the work will not be altered. The

change order also may provide an equitable readjustment of liquidated damages under the new completion schedule.

SC-4. DELETED

SC-5. INSURANCE - WORK ON A GOVERNMENT INSTALLATION (JAN 1997) (FAR 52.228-5)

(a) The Contractor shall, at its own expense, provide and maintain during the entire performance period of this Contract at least the kinds and minimum amounts of insurance required in the Insurance Liability Schedule or elsewhere in the Contract.

(b) Before commencing work under this Contract, the Contractor shall certify to the Contracting Officer in writing that the required insurance has been obtained. The policies evidencing required insurance shall contain an endorsement to the effect that any cancellation or any material change adversely affecting the Government's interest shall not be effective:

- (1) for such period as the laws of the State in which this Contract is to be performed prescribe;
- or
- (2) until 30 days after the insurer or the Contractor gives written notice to the Contracting Officer, whichever period is longer.

(c) The Contractor shall insert the substance of this clause, including this paragraph (c), in subcontracts under this Contract that require work on a Government installation and shall require subcontractors to provide and maintain the insurance required in the Schedule or elsewhere in the Contract. The Contractor shall maintain a copy of all subcontractors' proofs of required insurance, and shall make copies available to the Contracting Officer upon request.

SC-5.1 REQUIRED INSURANCE IN ACCORDANCE WITH FAR 28.307-2:

(1) Workers' compensation and employer's liability. Contractors are required to comply with applicable Federal and State workers' compensation and occupational disease statutes. If occupational diseases are not compensable under those statutes, they shall be covered under the employer's liability section of the insurance policy, except when Contract operations are so commingled with a Contractor's commercial operation that it would not be practical to require this coverage. Employer's liability coverage of at least \$100,000 shall be required, except in states with exclusive or monopolistic funds that do not permit workers' compensation to be written by private carriers.

(2) General Liability.

(a) The Contracting Officer shall require bodily injury liability insurance coverage written on the comprehensive form of policy of at least \$500,000 per occurrence.

(b) Property damage liability insurance shall be required only in special circumstances as determined by the agency.

(3) Automobile liability. The Contracting Officer shall require automobile liability insurance written on the comprehensive form of policy. The policy shall provide for bodily injury and property

damage liability covering the operation of all automobiles used in connection with performing the Contract. Policies covering automobiles operated in the United States shall provide coverage of at least \$200,000 per person and \$500,000 per occurrence for bodily injury and \$20,000 per occurrence for property damage. The amount of liability coverage on other policies shall be commensurate with any legal requirements of the locality and sufficient to meet normal and customary claims.

(4) Aircraft public and passenger liability. When aircraft are used in connection with performing the Contract, the Contracting Officer shall require aircraft public and passenger liability insurance. Coverage shall be at least \$200,000 per person and \$500,000 per occurrence for bodily injury, other than passenger liability, and \$200,000 per occurrence for property damage. Coverage for passenger liability bodily injury shall be at least \$200,000 multiplied by the number of seats or passengers, whichever is greater.

(5) Environmental Liability. If this contract includes the transport, treatment, storage, or disposal of hazardous material waste the following coverage is required.

The Contractor shall ensure the transporter and disposal facility have liability insurance in effect for claims arising out of the death or bodily injury and property damage from hazardous material/waste transport, treatment, storage and disposal, including vehicle liability and legal defense costs in the amount of \$1,000,000.00 as evidenced by a certificate of insurance for General, Automobile, and Environmental Liability Coverage. Proof of this insurance shall be provided to the Contracting Officer.

SC-6. DELETED

SC-7. PERFORMANCE OF WORK BY THE CONTRACTOR (APR 1984) (FAR 52.236-1): The Contractor shall perform on the site, and with its own organization, work equivalent to at least fifteen percent (15%) of the total amount of work to be performed under the Contract. The percentage may be reduced by a supplemental agreement to this Contract if, during performing the work, the Contractor requests a reduction and the Contracting Officer determines that the reduction would be to the advantage of the Government.

SC-8. PHYSICAL DATA (APR 1984) (FAR 52.236-4): Data and information furnished or referred to below is for the Contractor's information. The Government will not be responsible for any interpretation of or conclusion drawn from the data or information by the Contractor.

(a) Physical Conditions: The indications of physical conditions on the drawings and in the specifications are the result of site investigations by test holes shown on the drawings.

(b) Weather Conditions: Each bidder shall be satisfied before submitting his bid as to the hazards likely to arise from weather conditions. Complete weather records and reports may be obtained from any National Weather Service Office.

(c) Transportation Facilities: Each bidder, before submitting his bid, shall make an investigation of the conditions of existing public and private roads and of clearances, restrictions, bridge load limits, and other limitations affecting transportation and ingress and egress at the jobsite. The unavailability of transportation facilities or limitations thereon shall not become a basis for claims for damages or extension of time for completion of the work.

(d) Right-of-Way: The right-of-way for the work covered by these specifications will be furnished by the Government. The Contractor may use such portions of the land within the right-of-way not otherwise occupied as may be designated by the Contracting Officer. The Contractor shall, without expense to the Government, and at any time during the progress of the work when space is needed within the right-of-way for any other purposes, promptly vacate and clean up any part of the grounds that have been allotted to, or have been in use by, him when directed to do so by the Contracting Officer. The Contractor shall keep the buildings and grounds in use by him at the site of the work in an orderly and sanitary condition. Should the Contractor require additional working space or lands for material yards, job offices, or other purposes, he shall obtain such additional lands or easements at his expense.

SC-9. DELETED

SC-10. LAYOUT OF WORK (APR 1984) (FAR 52.236-17): The Contractor shall lay out its work from Government-established base lines and bench marks indicated on the drawings, and shall be responsible for all measurements in connection with the layout. The Contractor shall furnish, at its own expense, all stakes, templates, platforms, equipment, tools, materials, and labor required to lay out any part of the work. The Contractor shall be responsible for executing the work to the lines and grades that may be established or indicated by the Contracting Officer. The Contractor shall also be responsible for maintaining and preserving all stakes and other marks established by the Contracting Officer until authorized to remove them. If such marks are destroyed by the Contractor or through its negligence before their removal is authorized, the Contracting Officer may replace them and deduct the expense of the replacement from any amounts due, or to become due, to the Contractor.

SC-11. RESERVED

SC-12. AIRFIELD SAFETY PRECAUTIONS

(a) Definitions: As used in this clause --

(1) "Landing Areas" means:

(i) the primary surfaces which are comprised of the surface of the runways, the runway shoulders, and the lateral safety zones (the length of each primary surface is the same as the runway length; the width of each primary surface is 610 meters (2,000 feet), 305 meters (1,000 feet) on each side of the runway centerline; (see footnote at end of clause)).

(ii) the "clear zone" beyond the ends of each runway, i.e., the extension of the "primary surface" for a distance of 305 meters (1,000 feet) beyond each end of each runway;

(iii) all taxiways plus the lateral clearance zones along each side for the length of the taxiways (the outer edge of each lateral clearance zone is laterally 76 meters (250 feet) from the far or opposite edge of the taxiway, i.e., a 23 meters (75-foot)-wide taxiway would have a combined width of taxiway and lateral clearance zones of 130 meters (425 feet); and

(iv) all aircraft parking aprons plus the area 38 meters (125 feet) in width extending beyond each edge all around the aprons.

(2) "Safety precaution areas" means those portions of approach-departure clearance zones and transitional zones where placement of objects incident to Contract performance might result in vertical projections at or above the approach-departure clearance surface or the transitional surface.

(i) The "approach-departure clearance surface" is an extension of the primary surface and the clear zone at each end of each runway, for a distance of 15,240 meters (50,000 feet), first along an inclined (glide angle) and then along a horizontal plane, both flaring symmetrically about the runway centerline extended.

(a) The inclined plane (glide angle) begins in the clear zone 61 meters (200 feet) past the end of the runway (and primary surface) at the same elevation as the end of the runway, and continues upward at a slope of 50:1 (.3048 meter (one foot) vertically for each 15.24 meters (50 feet) horizontally) to an elevation of 152 meters (500 feet) above the established airfield elevation; at that point the plane becomes horizontal, continuing at that same uniform elevation to a point 15,240 meters (50,000 feet) longitudinally from the beginning of the inclined plane (glide angle) and ending there.

(b) The width of the surface at the beginning of the inclined plane (glide angle) is the same as the width of the clear zone; thence it flares uniformly, reaching the maximum width of 4,877 meters (16,000 feet) at the end.

(ii) The "approach-departure clearance zone" is the ground area under the approach-departure clearance surface.

(iii) The "transitional surface" is a sideways extension of all primary surfaces, clear zones, and approach-departure clearance surfaces along inclined planes.

(a) The inclined plane in each case begins at the edge of the surface.

(b) The slope of the inclined plane is 7:1 (.3048 meter (one foot) vertically for each 2.13 meters (7 feet) horizontally), and it continues to the point of intersection with

(1) Inner horizontal surface (which is the horizontal plane 46 meters (150 feet) above the established airfield elevation) or

(2) Outer horizontal surface (which is the horizontal plane 152 meters (500 feet) above the established airfield elevation), whichever is applicable.

(iv) The "transitional zone" is the ground area under the transitional surface. (It adjoins the primary surface, clear zone and approach-departure clearance zone.)

(b) General

(1) The Contractor shall comply with the requirements of this clause while

(i) Operating all ground equipment (mobile or station art);

(ii) Placing all materials; and

(iii) Performing all work, upon and around all airfields.

(a) The requirements of this clause are in addition to any other safety requirements of this contract.

(c) The Contractor shall--

(1) Report to the Contracting Officer before initiating any work;

(2) Notify the Contracting Officer of proposed changes to locations and operations;

(3) Not permit either its equipment or personnel to use any runway for purposes other than aircraft operation without permission of the Contracting Officer, unless the runway is--

(i) Closed by order of the Contracting Officer, and

(ii) Marked as provided in paragraph (d)(2) of this clause;

(4) Keep all paved surfaces such as runways, taxiways, and hardstands, clean at all times and, specifically, free from small stones which might damage aircraft propellers or jet aircraft;

(5) Operate mobile equipment according to the safety provisions of this clause, while actually performing work on the airfield. At all other times, the Contractor shall remove all mobile equipment to locations--

(i) Approved by the Contracting Officer,

(ii) At a distance of at least 229 meters (750 feet) from the runway centerline, plus any additional distance; and

(iii) Necessary to ensure compliance with the other provisions of this clause; and

(6) Not open a trench unless material is on hand and ready for placing in the trench. As soon as practicable after material has been placed and work approved, the Contractor shall backfill and compact trenches as required by the contract. Meanwhile, all hazardous conditions shall be marked and lighted in accordance with the other provisions of this clause.

(e) Landing Areas

The Contractor shall--

(1) Place nothing upon the landing areas without the authorization of the Contracting Officer.

(2) Outline those landing areas hazardous to aircraft, using (unless otherwise authorized by the Contracting Officer) red flags by day, and electric, battery-operated low-intensity red flasher lights by night;

(3) Obtain, at an airfield where flying is controlled, additional permission from the control tower operator every time before entering any landing area, unless the landing area is marked as hazardous in accordance with paragraph (d)(2) of this clause;

(4) Identify all vehicles it operates in landing areas by means of a flag on a staff attached to, and flying above, the vehicle. The flag shall be .9144 meters (3 feet) square, and consist of a checkered pattern of international orange and white squares of .3048 meter (1 foot) on each side (except that the flag may vary up to 10 percent from each of these dimensions);

(5) Mark all other equipment and materials in the landing areas, using the same marking devices as in paragraph (d)(2) of this clause; and

(6) Perform work so as to leave that portion of the landing area which is available to aircraft free from hazards, holes, piles of material, and projecting shoulders that might damage an airplane tire.

(e) Safety Precaution Areas

The Contractor shall--

(1) Place nothing upon the safety precaution areas without authorization of the Contracting Officer;

(2) Mark all equipment and materials in safety precaution areas, using (unless otherwise authorized by the Contracting Officer) red flags by day, and electric, battery-operated, low-intensity red flasher lights by night; and

(3) Provide all objects placed in safety precaution areas with a red light or red lantern at night, if the objects project above the approach-departure clearance surface or above the transitional surface.

SC-13. DELETED

SC-14. EQUIPMENT OWNERSHIP AND OPERATING EXPENSE SCHEDULE (MAR 1995)-
(EFARS 52.231-5000)

(a) This clause does not apply to terminations. See 52.249-5000, Basis for Settlement of Proposals and FAR Part 49.

(b) Allowable cost for construction and marine plant and equipment in sound workable condition owned or controlled and furnished by a contractor or subcontractor at any tier shall be based on actual cost data for each piece of equipment or groups of similar serial and series for which the Government can determine both ownership and operating costs from the contractor's accounting records. When both ownership and operating costs cannot be determined for any piece of equipment or groups of similar serial or series equipment from the contractor's accounting records, costs for that equipment shall be based upon the applicable provisions of EP 1110-1-8, Construction Equipment Ownership and Operating Expense Schedule, Region VIII. Working conditions shall be considered to be average for determining equipment rates using the schedule unless specified otherwise by the contracting officer. For equipment not included in the schedule, rates for comparable pieces of equipment may be used or a rate may be developed using the formula provided in the schedule. For forward pricing, the schedule in effect at the

time of negotiations shall apply. For retroactive pricing, the schedule in effect at the time the work was performed shall apply.

(c) Equipment rental costs are allowable, subject to the provisions of FAR 31.105(d)(ii) and FAR 31.205-36. Rates for equipment rented from an organization under common control, lease-purchase arrangements, and sale-leaseback arrangements, will be determined using the schedule, except that actual rates will be used for equipment leased from an organization under common control that has an established practice of leasing the same or similar equipment to unaffiliated lessees.

(d) When actual equipment costs are proposed and the total amount of the pricing action exceeds the small purchase threshold, the contracting officer shall request the contractor to submit either certified cost or pricing data, or partial/limited data, as appropriate. The data shall be submitted on Standard Form 1411, Contract Pricing Proposal Cover Sheet.

(e) Copies of EP1110-1-8 "Construction Equipment Ownership and Operating Expense Schedule" Volumes 1 through 12 are available in Portable Document Format (PDF) and can be viewed or downloaded at <http://www.usace.army.mil/inet/usace-docs/eng-pamphlets/cecw.htm>. A CD-ROM containing (Volumes 1-12) is available through either the Superintendent of Documents or Government bookstores. For additional information telephone 202-512-2250, or access on the Internet at http://www.access.gpo.gov/su_docs.

SC-15. PAYMENT FOR MATERIALS DELIVERED OFF-SITE (MAR 1995)-(EFARS 52.232-5000)

(a) Pursuant to FAR clause 52.232-5, Payments Under Fixed Priced Construction Contracts, materials delivered to the contractor at locations other than the site of the work may be taken into consideration in making payments if included in payment estimates and if all the conditions of the General Provisions are fulfilled. Payment for items delivered to locations other than the work site will be limited to:

(1) materials required by the technical provisions; or (2) materials that have been fabricated to the point where they are identifiable to an item of work required under this contract.

(b) Such payment will be made only after receipt of paid or receipted invoices or invoices with canceled check showing title to the items in the prime contractor and including the value of material and labor incorporated into the item. In addition to petroleum products, payment for materials delivered off-site is limited to the following items: Any other construction material stored offsite may be considered in determining the amount of a progress payment.

SC-16. AND SC-17. DELETED

SC-18. CONTRACT DRAWINGS AND SPECIFICATIONS (AUG 2000)(DOD FAR SUPP 252.236-7001)

(a) The Government will provide to the Contractor, without charge, one set of contract drawings and specifications, except publications incorporated into the technical provisions by reference, in electronic or paper media as chosen by the Contracting Officer.

(b) The Contractor shall--

- (1) Check all drawings furnished immediately upon receipt;
- (2) Compare all drawings and verify the figures before laying out the work;
- (3) Promptly notify the Contracting Officer of any discrepancies;
- (4) Be responsible for any errors which might have been avoided by complying with this paragraph (b); and
- (5) Reproduce and print contract drawings and specifications as needed.

(c) In general—

- (1) Large scale drawings shall govern small scale drawings; and
- (2) The Contractor shall follow figures marked on drawings in preference to scale measurements.

(d) Omissions from the drawings or specifications or the misdescription of details of work which are manifestly necessary to carry out the intent of the drawings and specifications, or that are customarily performed, shall not relieve the Contractor from performing such omitted or misdescribed details of the work. The Contractor shall perform such details as if fully and correctly set forth and described in the drawings and specifications.

(e) The work shall conform to the specifications and the contract drawings identified in the index of drawings attached at the end of the Special Clauses.

SC-19. THROUGH SC-21. DELETED

SC-22. EPA ENERGY STAR: The Government requires that certain equipment be Energy Star compliant. Initially, the sole Energy Star requirement shall be the self certification by the bidder that the specified equipment is Energy Star compliant. Within 3 months of the availability of an EPA sanctioned test for Energy Star compliance, the Contractor shall submit all equipment upgrades and additions for testing and provide proof of compliance to the Government upon completion of testing. Testing shall be at the Contractor's expense.

SC-23. RECOVERED MATERIALS: The Corps of Engineers encourages all bidders to utilize recovered materials to the maximum extent practicable. The attached APPENDIX R contains procurement guidelines for products containing recovered materials.

APPENDIX R

PART 247 - COMPREHENSIVE PROCUREMENT GUIDELINE FOR PRODUCTS CONTAINING RECOVERED MATERIALS

40 CFR Ch. 1 (9-1-99 Edition)

Subpart B-Item Designations

§ 247.10 Paper and paper products.

Paper and paper products, excluding building and construction paper grades.

§ 247.11 Vehicular products.

- (a) Lubricating oils containing re-refined oil, including engine lubricating oils, hydraulic fluids, and gear oils, excluding marine and aviation oils.
- (b) Tires, excluding airplane tire
- (e) Reclaimed engine coolants, excluding coolants used in non-vehicular applications.

247.12 Construction products.

- (a) Building insulation product including the following items:
 - (1) Loose-fill insulation, including but not limited to cellulose fiber, mineral fibers (fiberglass and rock vermiculite, and perlite);
 - (2) Blanket and batt insulation, including but not limited to mineral fibers (fiberglass and rock wool).
 - (3) Board (sheathing, roof decking wall panel) insulation, including but not limited to structural fiberboard and laminated paperboard products perlite composite board, polyurethane, polyisocyanurate, polystyrene, phenolics, and composites; and
 - (4) Spray-in-place insulation, including but not limited to foam-in-place polyurethane and polyisocyanurate and spray-on cellulose.
- (b) Structural fiberboard and laminated paperboard products for applications other than building insulation, including building board, sheathing shingle backer, sound deadening board, roof insulating board, insulating wallboard, acoustical and non-acoustical ceiling tile, acoustical and non-acoustical lay-in panels, floor underlayments, and roof overlay (cover board).
- (c) Cement and concrete, including concrete products such as pipe and block, containing coal fly ash ground granulated blast furnace (GGBF) slag.
- (d) Carpet made of polyester fiber use in low- and medium-wear applications.
- (e) Floor tiles and patio block containing recovered rubber or plastic.
- (f) Shower and restroom dividers/partitions containing recovered plastic or steel.
- (g) (1) Consolidated latex paint used for covering graffiti; and
(2) Reprocessed latex paint used for interior and exterior architectural applications such as wallboard, ceilings, and trim; gutter boards; and concrete, stucco, masonry, wood and metal surfaces.

§247.13 Transportation products.

- (a) Traffic barricades and traffic cones used in controlling or restricting vehicular traffic.
- (b) Parking stops made from concrete or containing recovered plastic or rubber.

- (c) Channelizers containing recovered plastic or rubber.
- (d) Delineators containing recovered plastic, rubber, or steel.
- (e) Flexible delineators containing recovered plastic.

§ 247.14 Park and recreation products

- (a) Playground surfaces and running tracks containing recovered rubber or plastic.
- (b) Plastic fencing containing recovered plastic for use in controlling snow or sand drifting and as a warning/safety barrier in construction or other applications.

247.15 Landscaping products.

- (a) Hydraulic mulch products containing recovered paper or recovered wood used for hydroseeding and as an over-spray for straw mulch in landscaping, erosion control, and soil reclamation.
- (b) Compost made from yard trimmings, leaves, and/or grass clippings for use in landscaping, seeding of grass or other plants on roadsides and embankments, as a nutritious mulch under trees and shrubs, and in erosion control and soil reclamation.
- (c) Garden and soaker hoses containing recovered plastic or rubber.
- (d) Lawn and garden edging containing recovered plastic or rubber.

§ 247.16 Non-paper office product.

- (a) Office recycling containers and office waste receptacles.
- (b) Plastic desktop accessories.
- (c) Toner cartridges.
- (d) Binders.
- (e) Plastic trash bags.
- (f) Printer ribbons.
- (g) Plastic envelopes.

§ 247.17 Miscellaneous products.

Pallets containing recovered wood, plastic, or paperboard.

INDEX OF DRAWINGS

Construct Roads, Parking Lots, and Taxiway,
Missoula Fire and Technology Center
Missoula, Montana

Drawing No. E-92-1-4

SHEET NUMBER	PLATE NUMBER	TITLE	REVISION NUMBER	DATE
1	G-1	Title, Area Maps, and Drawing Index		21JAN03
2	GT-1	Exploration Logs – Taxiway		21JAN03
3	GT-2	Location of Exploration – Taxiway		21JAN03
4	C-1	Legend and Abbreviations		21JAN03
5	C-2	Master Plan		21JAN03
6	C-3	General Site Plan 1		21JAN03
7	C-4	General Site Plan 2		21JAN03
8	C-5	Demolition Plan 1		21JAN03
9	C-6	Demolition Plan 2		21JAN03
10	C-7	Demolition Plan 3		21JAN03
11	C-8	Demolition Plan 4		21JAN03
12	C-9	Site Plan 1		21JAN03
13	C-10	Site Plan 2		21JAN03
14	C-11	Site Plan 3		21JAN03
15	C-12	Site Plan 4		21JAN03
16	C-13	Striping and Signage Plan 1		21JAN03
17	C-14	Striping and Signage Plan 2		21JAN03
18	C-15	Striping and Signage Plan 3		21JAN03
19	C-16	Striping and Signage Plan 4		21JAN03
20	C-17	MTDC Signage Plan		21JAN03
21	C-18	Parking Lots J & H Signage Plan		21JAN03

SHEET NUMBER	PLATE NUMBER	TITLE	REVISION NUMBER	DATE
22	C-19	Grading Plan 1		21JAN03
23	C-20	Grading Plan 2		21JAN03
24	C-21	Grading Plan 3		21JAN03
25	C-22	Grading Plan 4		21JAN03
26	C-23	Utility Plan 1		21JAN03
27	C-24	Utility Plan 2		21JAN03
28	C-25	Utility Plan 3		21JAN03
29	C-26	Utility Plan 4		21JAN03
30	C-27	North Drive and Highway 10 Entrance Profiles		21JAN03
31	C-28	Miscellaneous Details 1		21JAN03
32	C-29	Miscellaneous Details 2		21JAN03
33	C-30	Parking Lot Sections and Details		21JAN03
34	C-31	Roadway Sections and Details		21JAN03
35	C-32	Highway 10 Sections Station 336+00 to 339+00		21JAN03
36	C-33	Highway 10 Sections Station 340+00 to 343+00		21JAN03
37	C-34	Highway 10 Sections Station 344+00 to 347+00		21JAN03
38	C-35	Highway 10 Sections Station 348+00 to 351+00		21JAN03
39	C-36	Highway 10 Sections Station 352+00 to 355+00		21JAN03
40	C-37	Highway 10 Sections Station 356+00 to 359+00		21JAN03
41	C-38	Highway 10 Sections Station 360+00 to 361+86.69		21JAN03
42	C-39	Taxiway Details		21JAN03
43	C-40	Drainage Details		21JAN03
44	C-41	Landscape Plan 1		21JAN03
45	C-42	Landscape Plan 2		21JAN03

REVISIONS TO DRAWINGS BY NOTATION

Drawing, Sheet C-19: Add Note, to read, "The central highway entrance to be removed is a high point, with drainage flowing away from the road on both sides. After removal of the AC and base course, this area shall be graded as necessary to maintain existing drainage."

STANDARD DETAILS BOUND IN THE SPECIFICATIONS

<u>DRAWING NUMBER</u>	<u>SHEET NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
<u>SECTION 01501 - CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS</u>			
	1, 2, & 3	Civil Works Project Identification Sign	REV 07APR88
	1	Hard Hat Sign	10SEP90

END OF SECTION

SECTION 01001

SUPPLEMENTARY REQUIREMENTS

PART 1 GENERAL

1.1 DEFINITIONS

The references listed below are to be defined as indicated wherever they may be used in the TECHNICAL SPECIFICATIONS.

"SUPPLEMENTARY REQUIREMENTS " shall be read to pertain to any of the sections of the DIVISION 1 as required by the content of the section or paragraph containing the reference.

Specification "SECTION 01300 – SUBMITTALS" shall be read as a specification "SECTION 01330 – SUBMITTAL PROCEDURES".

Specification "SECTION 01400 – CONTRACTOR QUALITY CONTROL" shall be read as a specification "SECTION 01451 – CONTRACTOR QUALITY CONTROL".

1.2 CONSTRUCTION SCHEDULING

1.2.1 Construction Progress Charts And Status Reports:

1.2.1.1 The instructions and information herein supplement the requirements of Paragraph SCHEDULE FOR CONSTRUCTION CONTRACTS IN THE CONTRACT CLAUSES. The proposed Construction Progress Chart shall be prepared on ENG Form 2454. Additional instructions are obtained in INSTRUCTIONS AND INFORMATION FOR CONTRACTORS, a manual furnished to the CONTRACTOR by the Contracting Officer. This manual is available for inspection in the Office of the Seattle District, Corps of Engineers 4735 East Marginal Way South, Seattle, Washington.

1.2.1.2 The Minimum principal contract features (activities) to be included on ENG Form 2454 shall represent the work in each of the following divisions:

- a) Demolition
- b) Site Utilities
- c) Subbase Course
- d) Base Course
- e) Asphalt
- f) Pavement Markings
- g) Signage
- h) Sidewalks
- i) Masonry Work on Highway 10

1.2.2 The Construction Progress Chart shall show the total bid amount distributed among the features shown on the chart. The schedule shall show the percentage of completion at the close of each weekly period. This percentage shall be based on percentage of physical completion of the work.

1.2.3 The Construction Progress Chart shall be submitted within 10 calendar days after the date of receipt of notice to proceed.

1.2.4 The CONTRACTOR shall prepare and submit a monthly project status report. The report shall tell whether the project as a whole is on, ahead of, or behind schedule. If the project is behind schedule, the Contractor shall explain what actions he will take to regain his schedule. The report shall include a description of problem areas, delaying factors and their impact, and an explanation of corrective actions taken or proposed. Any delays caused by the Government shall be identified. Any significant items or events that occurred during the report month shall also be detailed.

1.3 CORRESPONDENCE

1.3.1 All correspondence shall be addressed to the Contracting Officer, shall be serially numbered commencing with Number 1, with no numbers missing or duplicated and shall be forwarded in quintuplicate, as directed by the authorized representative of the Contracting Officer, and shall include an additional copy forwarded to a separate designated location. All copies provided shall be legible. Enclosures attached or transmitted with the correspondence shall also be furnished with the original and each copy. Each serial letter shall make reference to the contract name, contract number and shall have only one subject.

1.3.2 For submission of CONTRACTOR payment requests, See Section 01025, PAYMENT.

1.4 ADVANCED NOTICE OF CONTRACTOR PERFORMED ACCEPTANCE TESTING

The CONTRACTOR shall notify the Contracting Officer a minimum of 20 days prior to performing any acceptance or "buy off" testing of the following systems, (1) Water Systems, (3) Sanitary Systems, (2) Fire Detection/Protection. Advance notification is not required for testing performed as part of fabrication or installation.

1.5 CONTRACTOR'S FILES

CONTRACTOR shall maintain "Approved (Action Code "A") and "Approved Except as Noted (Action Code "B") shop drawing files in fabrication shops and at project sites for government use.

1.6 SPECIAL SAFETY REQUIREMENTS:

All construction activities shall be conducted in strict compliance with the Corps of Engineers Safety and Health Requirements Manual EM 385-1-1, and Occupational Safety and Health Administration regulations, as applicable. The manual is available on line at: <http://www.usace.army.mil/inet/usace-docs/eng-manuals/em385-1-1/toc.htm>. A hardcopy will be provided at the preconstruction conference.

1.6.1 In addition to Safety and Health Requirements Manual EM 385-1-1, and all applicable OSHA standards, the CONTRACTOR shall comply with the requirements listed below. Paragraph numbers refer to EM 385-1-1 or are added thereto.

(a) Paragraph 01.A.12: Add new paragraph: Safety Engineer (1985 JAN OCE) (DAM 52.236/103):

(1) The Contractor shall employ at the project site to cover all hours of work at least one Safety and Occupational Health person to manage the Contractor's accident program. Duties which are not germane to the safety program shall not be assigned to the Safety and Health person(s). The principal safety person shall report to and work directly for the Contractor's on-site top manager, higher level official, or corporate safety office. The Safety and Health person(s) shall have the authority to take immediate steps to correct unsafe or unhealthful conditions. The presence of a Safety and Health person will not abrogate safety responsibilities of other personnel.

(2) Qualifications for Safety and Health person(s).

(A) Shall have a degree in engineering or safety in at least a four-year program from an accredited school; or

(B) Shall have legal registration as a Professional Engineer or a Certified Safety Professional and, in addition, shall have been engaged in safety and occupational health for at least one (1) year of experience, no time being credited to this one (1) year unless at least fifty (50) percent of the time each year was devoted to safety and occupational health; or

(C) Shall have a degree other than that specified in (A) above and, in addition, shall have been engaged in safety and occupational health for at least three (3) years' no time being credited to these three (3) years unless fifty (50) percent of the time each year was devoted to safety and occupational health; or

(D) In lieu of a degree, shall have been engaged in safety and occupational health for at least five (5) years, no time being credited to these (5) years unless at least fifty (50) percent of the time each year was devoted to safety and occupational health;

(E) First aid work is not a creditable experience.

(3) The name and qualifications of the nominated safety person(s) shall be furnished to the Contracting Officer for acceptability and a functional description of duties shall be provided prior to the pre-work conference.

(b) Paragraph 01.D.02, revise as follows:

(1) Replace paragraph 01.D.02c with the following:
"c. Property damage in excess of \$2,000.00

(2) Add new paragraph d as follows:
"An injury resulting in a lost workday, not including the day of injury."

1.7 TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER (ER 415-1-15 31 OCT 89)

This Paragraph specifies the procedure for the determination of time extensions for unusually severe weather in accordance with the CONTRACT CLAUSE entitled "Default (Fixed Price

Construction)". In order for the Contracting Officer to award a time extension under this clause, the following conditions must be satisfied:

1.7.1 The weather experienced at the project site during the contract period must be found to be unusually severe, that is, more severe than the adverse weather anticipated for the project location during any given month.

1.7.2 The unusually severe weather must actually cause a delay to the completion of the project. The delay must be beyond the control and without the fault or negligence of the contractor.

1.7.3 The following schedule of monthly anticipated adverse weather delays is based on National Oceanic and Atmospheric Administration (NOAA) or similar data for the project location and will constitute the base line for monthly weather time evaluations. The CONTRACTOR 's progress schedule must reflect these anticipated adverse weather delays in all weather dependent activities.

MONTHLY ANTICIPATED ADVERSE WEATHER DELAY
WORK DAYS BASED ON (5) DAY WORK WEEK

<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>
15	12	9	3	3	3	1	1	2	4	9	13

1.7.4 Upon acknowledgment of the notice to proceed (NTP) and continuing throughout the contract, the CONTRACTOR will record on the daily QCQ report, the occurrence of adverse weather and resultant impact to normally scheduled work. Actual adverse weather delays must prevent work on critical activities for 50 percent or more of the contractor's scheduled work day.

1.7.5 The number of actual adverse weather delay days shall include days impacted by actual adverse weather (even if adverse weather occurred in previous month), be calculated chronologically from the first to the last day of each month, and be recorded as full days. If the number of actual adverse weather delay days exceeds the number of days anticipated in paragraph 1.7.3, above, the Contracting Officer will convert any qualifying delays to calendar days, giving full consideration for equivalent fair weather work days, and issue a modification in accordance with the contract clause entitled " Default (Fixed Price Construction)".

1.8 PERMITS AND CONTRACTOR RESPONSIBILITIES

It will be the responsibility of the CONTRACTOR to obtain all permits/licenses required for this project in accordance with the Contract Clause paragraph entitled PERMITS AND RESPONSIBILITIES.

1.9 SALVAGE MATERIALS AND EQUIPMENT FOR THE GOVERNMENT

The Contractor shall maintain adequate property control records for all materials or equipment specified to be salvaged. These records may be in accordance with the Contractor's system of property control, if approved by the property administrator. The Contractor shall be responsible for the adequate storage and protection of all salvaged materials and equipment, and shall

replace, at no cost to the Government, all salvage materials and equipment which are broken or damaged during salvage operations as the result of his negligence, or while in his care. Point of contact concerning Government salvaged items is Bruce Crockett, Telephone (406) 329-3161.

1.10 COMPLIANCE WITH DAVIS-BACON ACT

1.10.1 Contractor POC

Within 14 days after award of the contract, the Contractor shall designate a point of contact (POC) within their organization who will be responsible for the Davis-Bacon Act Labor Program for the Contractor and all subcontractors under this contract as required by the Contract Clauses and FAR 52.222.

1.10.2 Responsibilities

The designated Contractor POC shall be responsible for Davis-Bacon Act Labor Program activities including, but not limited to:

- Documentation and record keeping
- Submittal and accuracy of certified payrolls
- Submittal of required labor forms including requests for additional classifications and rates, Statements and Acknowledgement, etc.
- Posting of the wage determination, approved additional classifications and rates, labor and EEO posters
- Coordination with the Contracting Officer's Labor Program POC

Prior to submittal to the Government, payrolls shall be reviewed for compliance to all applicable labor standards, to include, but not be limited to the following items: correct wage rates, correct overtime classification and pay, misclassification of workers for work actually performed, apprentice to journeyman ratios, and registration of apprentice. Corrective actions shall be taken as necessary to ensure Contractor compliance with applicable contract and FAR clauses.

1.10.3 Certification

The Contractor POC shall provide a signed certification stating the following: "I certify that the submitted items being forwarded have been reviewed in detail and are correct and in strict conformance with the Labor Standards of the contract except as otherwise stated."

PARTS 2 AND 3 NOT USED

END OF SECTION

This page is intentionally left blank.

SECTION 01005

SITE SPECIFIC SUPPLEMENTARY REQUIREMENTS

1. CONDUCT OF WORK:

1.1 COORDINATION AND ACCESS TO SITE

Coordination for this work shall be made through the Contracting Officer except elements of the work may require joint coordination by the CONTRACTOR with the Contracting Officer, Forest Service Facility Manager, and Municipal Airport Manager, and other administrative agencies as specified in the contract documents and as directed by the Contracting Officer.

1.2 WORK HOURS

There are no restrictions concerning work hours except the CONTRACTOR shall coordinate with the Contracting Officer for work hours other than 7:30 A.M. to 4:00 P.M Monday through Friday.

1.3 FIRE REGULATIONS

CONTRACTOR shall comply with NFPA 241 Building Construction and Demolition requirements. CONTRACTOR shall provide adequate fire extinguishers for the construction site and remove them upon acceptance of the facility.

1.3.1 Fire Extinguishers

Motorized equipment shall be equipped with fire extinguishers as follows:

- a. Pickup truck or other light passenger vehicles, one extinguisher per vehicle, rating 5 BC.
- b. All other trucks and heavy motorized equipment, two extinguishers per vehicle, rating 10 BC.

1.4 CONSTRUCTION SCHEDULE REQUIREMENTS

1.4.1 Constraints

The following special constraints have been identified as having an impact on the performance of the Work. It is not intended to be a comprehensive list of constraints that will result from the execution of the Work, but as an aid to the CONTRACTOR in development of schedules and in executing the Work. Additional constraints may exist or develop as a result of required Work execution or CONTRACTOR's proposed work methods or sequence. In any event, the CONTRACTOR is responsible for compliance with the requirements of the various specification sections and the work procedures and protection requirements contained therein and establishing all constraints associated with the Work execution and incorporating them into Work schedules and proposed construction activities.

a. The Missoula Fire and Technology Center (MFTC) will continue operations during the performance of this contract.

b. All project phasing and work hours shall be performed with the intent to minimize hindrances to the MFTC's mission, while also minimizing contract interruptions. Contract work schedules shall be coordinated through the Contracting Officer and Facility Manager responsible for the scheduling of flying operations. The peak fire fighting period is from July through September. Jump training occurs during a two week period of May.

c. The CONTRACTOR shall hold weekly meetings with the Contracting Officer and Facility Manager to discuss work plan.

d. The construction season for the Missoula area runs approximately from April through October.

1.4.2 Job Conditions

In conjunction with the completion schedule under Section 00800, paragraph SC-1 the CONTRACTOR shall incorporate the following conditions into the work sequence:

a. The work areas are defined on the contract drawings as Phases ~~1, 2, and 3~~ 1 and 2. Generally, the work in each phase may occur concurrently subject to the completion time specified under SC-1 for the item of work. Elements of work within certain phases may be subject to sequencing restrictions as noted on the contract drawings.

1.5 UTILITY OUTAGES

CONTRACTOR shall coordinate unavoidable utility outages with the Contracting Officer and Facility Manager at least 10 days in advance. The 'Utility Outage Notice' shall be completed by the CONTRACTOR and submitted to the Contracting Officer for approval. No interruptions shall be made until the approved Notice is returned to the CONTRACTOR. Outages shall be kept to a minimum and any one outage shall not last more than 2 hours. Unavoidable power or other utility system interruptions shall be scheduled in advance. All outages longer than 2 hours shall be after normal duty hours or on a weekend at the Government option. All outages that shut down motors which support a heating system shall require backup power by the CONTRACTOR to be connected during the outage, as requested by the Government. Unless indicated otherwise, CONTRACTOR shall give 14 days preliminary notice of future outage. Final notice shall be given 10 calendar days before outage and shall specify date and time of outage.

1.6 REPAIR OF ROAD CUTS AND SIDEWALK CUTS

Asphalt patches shall be in place within 48 hours after placement of aggregate base course. Between placement of asphalt, the CONTRACTOR shall keep the road in a driveable and passable condition. The CONTRACTOR shall replace cuts in sidewalks within 48 hours after preparation of the subgrade or aggregate base. The CONTRACTOR is responsible to keep the cut location in sidewalks handicap accessible until the finished surface is completed and ready for use for pedestrian traffic.

1.7 AIRPORT SECURITY

The Contractor shall be responsible for meeting all the security and safety requirements of the Missoula County Airport Authority and FAA while working on the Taxiway portion of this project. This responsibility includes, but is not limited to flagging construction equipment as required, providing security guards at either of the entrances to the secure areas during hauling of materials, ensuring that employees do not wonder beyond the construction area, etc. The Contractor will be provided with two key cards to the automatic gate at the back entrance to the secure area. The back entrance is the location that the contractor is expected to use to haul all material into the site as well as excess material to be removed from the site. The location where the excess materials that are approved to be disposed of on the Forest Service site is located just southwest of the gate.

PART 2. NOT USED.

END OF SECTION

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SECTION 02150

CONSTRUCTION OF FACILITIES IN HIGHWAY 10 RIGHT OF WAY

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. The following special provisions are hereby made a part of this contract and supplement and/or supersede any sections of the Standard Specifications for Road and Bridge Construction, 1995 Edition adopted by the Montana Department of Transportation and the Montana Transportation Commission and all supplements thereto in conflict therewith

The following books are also hereby made a part of this contract and are available upon request to the CONTRACT PLANS SECTION, MONTANA DEPARTMENT OF TRANSPORTATION, 2701 PROSPECT AVENUE, PO BOX 201001, HELENA, MT 59620-1001.

Book entitled "Standard Specifications for Road and Bridge Construction 1995 Edition." (Including supplements)

Most recent edition of Montana Department of Transportation drawings entitled "Detail Drawings English Edition"

1.2 SUMMARY

- A. This section includes all work required within the Highway 10 Right of Way as shown on the construction plans. The Highway 10 work involves striping and widening the existing roadway to provide a center turning lane and deceleration lane involving the following:
 - 1. Clearing and Grubbing
 - 2. Topsoil Removal and Replacement
 - 3. Pavement Removal & Disposal
 - 4. Construction Staking & Layout
 - 5. Excavation and Embankment
 - 6. Removal of Structures and Obstructions
 - 7. Culvert Excavation and Trench Excavation
 - 8. Culvert Installation and Pipe Extension
 - 9. Water Pollution Control and Stream Preservation
 - 10. Aggregate Surfacing- Furnishing and Placing
 - 11. Plant Mix Bituminous Surfacing
 - 12. Curb and Gutter With Concrete Median
 - 13. Seeding and Fertilizing
 - 14. Traffic Control
 - 15. Pavement Marking
 - 16. Sign Removal & Installation

1.3 MATERIALS OWNERSHIP

- A. All materials, except those indicated to remain under the Ownership of the Montana Department of Transportation, shall become Contractor's property and shall be removed from the site. Suitable excess excavation can be used on the Forest Service portion of the project. Excess material can be wasted in the designated waste area shown on the plans. Excess material can be used to flatten slopes as specified in these special provisions.
- B. All existing signs, and delineators not reset on the project remain the property of the Montana Department of Transportation. Deliver removed signs and post materials to the MDT District office at 2100 W. Broadway Avenue, Missoula MT.

1.4 SUBMITTALS

- A. The Contractor is responsible for all materials testing and quality assurance to comply with these specifications. The contractor shall employ an independent testing lab to perform the materials testing. Conform all materials testing with MDT requirements as contained in the MDT Materials Manual, including the following.

MT 601 - Materials Sampling, Testing and Acceptance Guide

MT 602 - Acceptance, Independent Assurance and Final Record Sampling

- B. Submittals shall be as listed under each individual section of the incorporated standard specifications and the above referenced documents. Submit test results and certifications for the engineer's approval. Failure to comply with the specifications will result in rejection of the materials.

1.5 PROJECT CONDITIONS

- A. Traffic: Contractor shall coordinate with the Missoula District of the Department of Transportation when working within their Right of Way. All necessary traffic control plans and sequence of operations shall be prepared by the Contractor, submitted to and approved by the Department of Transportation through the Contracting Officer.
- B. Montana Rail Link: It is the intent of this contract that the Contractor shall not have any equipment and that no construction shall occur within the Montana Rail Link Right of Way. If it appears that the Contractor will need to have equipment within the Montana Rail Link Right of Way, the Contractor shall obtain all necessary permits and coordinate its activities with Montana Rail Link.

1.6 STATUS OF UTILITIES

Attention is directed to the utility facilities which are potentially in conflict with proposed construction of Highway 10 improvements. In the event underground utilities are encountered in excavation work, coordinate work with utility companies in areas where utility moves are required to relocate or lower existing utilities. Delays resulting in work required in relocating utility facilities is not justification for additional contract time or compensation.

1.7 CONTRACTOR FURNISHED SOURCES - HAZARDOUS OR TOXIC SUBSTANCES

Add as a third paragraph to Subsection 106.02.3 of the Standard Specifications. Materials must meet statutory and regulatory requirements for being non-toxic and non-hazardous. Mine tailings and waste, slag, sources within state or federal superfund sites, or sources within areas known or suspected to be contaminated with toxic substances or petroleum products will not be allowed unless acceptable laboratory reports of Toxicity Characteristics Leaching Process (TCLP) and Total Petroleum Hydrocarbons (TPH) are provided.

1.8 CONSTRUCTION SURVEYING AND LAYOUT

A. General

Furnish all surveys and calculations necessary to lay out and control the work to specified lines, grades, and tolerances. Surveys must produce accuracy and control equal to or better than methods and accuracy requirements of the Montana Department of Transportation Survey Manual of 1993. Conduct all surveys under the responsible charge of a Registered Land Surveyor licensed in Montana.

B. Materials and Equipment

Furnish all materials and equipment required to perform this work.

C. Construction Requirements

1. Survey Controls.

Refer to the project plans for survey control information and centerline coordinates.

2. Staking. Set all stakes necessary to control all work under the contract. This includes but is not limited to:

- a) centerline stations
- b) reference points
- c) clearing limits
- d) slope stakes
- e) drainage structures
- f) surfacing courses
- g) pavement
- h) signs, pavement markings, guardrailing
- i) fencing

Special conditions for particular layout items are:

Slope Stakes. Determine on the ground the intersection point of the planned template and the existing ground for the slope stake catch point.

Do not begin grading operations until all slope stakes have been set on at least 20 percent of the project. Do not start grading operations within a balance until slope stakes within the balance have been set.

Culverts. Take cross sections, as well as profiles. Profiles and cross sections must be approved before culverts are ordered. Confirm elevations and lengths shown in the plans before culverts and pipe are ordered.

D. Inspection

The right to make inspections and random checks of any portion of the layout and control work is reserved. The engineer may order work not done with sufficient accuracy to be re-done. The contractor is solely responsible for securing proper dimensions, lines, grades, and elevations of all parts of the work. Inspection will not relieve the contractor of this responsibility.

1.9 COORDINATION

All submittals and coordination shall be made through the Contracting Officer.

PART 2 - INCORPORATED SPECIFICATIONS

2.1 GENERAL SUPPLEMENTS TO MONTANA DEPARTMENT OF TRANSPORTATION SPECIFICATIONS

Delete all references to MEASUREMENT and PAYMENTS
Delete all references to Engineer, Department and Project Manager and insert "Contracting Officers Representative."
Delete all references to Engineer, Project Manager or Owner staking and marking construction items. Contractor shall be responsible for all construction control staking.
Delete all references to Department or Project Manager testing. Contractor shall use an accredited testing lab to determine compliance with contract specifications.

2.2 SPECIFICATIONS

A. SECTION 201 – CLEARING AND GRUBBING

1. General
Delete Subsections 201.04 through 201.05.4

B. SECTION 202 – REMOVAL OF STRUCTURES AND OBSTRUCTIONS

1. General
Delete Subsections 202.04 through 202.05

C. SECTION 203 – EXCAVATION AND EMBANKMENT

1. General
203.01.1B.1. Delete last sentence
203.01.1B.2. Delete in its entirety

- 203.01.1C. Delete in its entirety
 - 203.03.1A. Delete last sentence
 - 203.03.4A. Delete 2nd and 3rd paragraphs
- Delete Subsections 203.04 through 203.05

2. DISPOSAL OF EXISTING PAVEMENTS

Dispose of all existing bituminous or Portland cement concrete pavement to be removed unless specified otherwise. Process, handle and transport these materials to utilize them in embankments on the project, or crush, screen, mix and otherwise process for use as base or traffic gravel or dispose of them as solid waste in conformance with applicable laws, rules, regulations and in particular the Montana Solid Waste Management Act. Existing pavement used as embankment or base gravel must meet requirements of specifications for the particular item. Pieces used as embankment must not exceed 6-inch (150 millimeter) in size. Do not use removed bituminous pavement in areas exposed to extended periods of water flow, in or near standing water, or close to groundwater wells.

3. COMPACTION OF SAFETY SLOPE FLATTENING EMBANKMENTS

Compact safety slope embankments to a minimum of 90% of maximum density. For purposes of this provision, safety slopes are defined as embankment placed from an existing roadway shoulder to a catch point on original ground and not supporting any portion of the surfacing. The Compaction Requirement Table 203-1 in Subsection 203.03.3 is hereby changed to a minimum of 90% of maximum density and the optimum moisture requirement is deleted for safety slopes.

4. COMPACTION EQUIPMENT

The contractor is responsible for all damage caused to the work or adjacent property through the use of vibratory compaction equipment.

5. P.T.W. EXCAVATION

Process and dry material excavated or subexcavated which contains excess moisture if it can be utilized as acceptable embankment material. If the material is acceptable and the contractor elects to waste the material, replace with acceptable embankment material. Disposal of excavated material to flatten slopes within the right-of-way is permissible, provided it does not affect drainage. If the Contractor elects to waste the material, replacement borrow material will not be measured or paid for.

D. SECTION 207 - CULVERT EXCAVATION AND TRENCH EXCAVATION

- 1. General
Delete Subsections 207.04 and 207.05

E. SECTION 208 - WATER POLLUTION CONTROL AND STREAM PRESERVATION

1. General

Subsection 208.03.2 First paragraph Delete last sentence and insert "Dispose of all wastes, refuse, and discarded materials meeting all Local, State and Federal rules and regulations.

Delete Subsections 208.04 through 208.05

F. SECTION 210 – EQUIPMENT USE

1. General

Delete Subsections 210.03.6 through 210.05

G. SECTION 301 – AGGREGATE SURFACING

1. General

Subsection 301.02.1 - Delete in its entirety and insert "Aggregates shall be furnished by the Contractor. Materials must meet Montana Department of Transportation minimum requirements for the materials specified. Contractor shall pay for all testing required to obtain approval of all Aggregates to be furnished and installed under this specification."

Delete Subsection 301.03.2C.

Delete Subsection 301.03.3

Subsection 301.03.5D. Delete references to Project Manager taking samples. All sampling and testing will be the responsibility of the Contractor

Delete Subsection 301.04.1 through 301.05

2. Materials

Provide Type A, Grade 2 Crushed Top Surfacing for roadway widening. Provide Type A, Grade 5 Crushed Base Course for roadway widening.

Replace Table 701-8 Table of Gradations – Crushed Base Course Type "A," Subsection 701.02.4, with the following:

Table 701-B
Table of Gradations – Crushed Base Course Type "A"

Percentage By Weight Passing Square Mesh Sieves

Sieve Size	Grade 5	Grade 6
2" (50mm)	100	100
1 1/2" (37.5 mm)	95-100	75-95
3/4" (19.0 mm)	70-89	40-75
3/8" (9.5 mm)	50-70	25-60
No. 4 (4.75 mm)	35-58	25-60
No. 40 (425µm)	9-30	13-34

No. 200 (75µm) 0-8 0-8

Replace Table 701-10 Table of Gradations-Crushed Top Surfacing Type "A," Subsection 701.02.6, with the following:

Table 701-10
Table of Gradations - Crushed Top Surfacing Type "A"

Percentage By Weight Passing Square Mesh Sieves					
Sieve Size	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
1" (25 mm)	100				
¾" (19.0 mm)		100			
N" (16.0 mm)			100		
½" (12.5 mm)				100	
M" (9.5 mm)					100
No. 4 (4.75 mm)	40-70	40-70	40-70	40-70	50-80
No. 10 (2.00 mm)	25-55	25-55	25-55	25-60	35-70
No. 200 (75 µm)	2-8	2-8	2-8	2-8	2-8

H. SECTION 401 – PLANT MIX PAVEMENT

1. General

Subsection 401.02.1 Aggregate. Delete first sentence and insert "Use aggregate sources which will produce aggregates meeting Section 701 requirements.

Subsection 401.03.1A. Delete second paragraph and insert "Furnish a mix design formula approved by the Montana Department of Transportation for the mix to be used.

Subsection 401.03.1B. Delete "The Engineer" and insert "An accredited testing lab....."

Delete Subsection 401.03.2A. through 401.03.2E.

Subsection 401.03.3B.2. First sentence Delete the word Project manager and insert "...accredited testing lab..."

Subsection 401.03.6 Delete the 5th paragraph

Delete the 9th paragraph

Delete Subsection 401.04 through 401.05.

2. Materials

PLANT MIX BITUMINOUS SURFACING - GRADE S

A. Description

This work is producing and furnishing hot mix asphalt pavement.

B. Materials

It is recommended that at least three separate aggregate stockpiles be produced. Ensure that the aggregate, when combined at the job mix target, meets Table 701-15B, and 701.03.1.

Table 701-15B					
19 mm Nominal Size					
Percent by Weight Passing Square Mesh Sieves					
Sieve	Gradation Limits		Job Mix Tolerance	Restricted Zone	
	Min.	Max.		Min.	Max.
1" (25mm)		100			
¾" (19mm)	90	100	?7		
½" (12.5mm)		89	?7		
(9.5mm)			?7		
#4(4.75mm)			?7		
#8 (2.36mm)	23	49	?6	34.6	34.6
#16(1.18mm)			?6	22.3	28.3
#30(0.600mm)			?4	16.7	20.7
#50(0.300mm)			?4	13.7	13.7
#100(0.150mm)			?2		
#200(0.075mm)	2.0	8.0	?1.5		

Use the restricted zone boundaries as guidelines in the mix design development. The job mix target gradation is not required to pass outside the restricted zone boundaries.

Meet the following aggregate requirements at the job mix target combined ratio:

Coarse Aggregate (4.75 mm and larger)

- Angularity (ASTM D-5821 or MT-217)See Table 701-AA
- Wear (AASHTO T-96 or MT-209)40% max.
- Flat and Elongated Particles (ASTM D-4791)
- (3:1 Ratio; by mass; 4.75 mm and larger)20% max.

Fine Aggregate (2.36 mm and smaller)

- Angularity (AASHTO T-304 Method A)45% min.
- Sand Equivalent (AASHTO T-176 or MT-213)45 min.

If aggregate cannot meet the Sand Equivalent, meet the following:

- Volume Swell (MT-305)10% max.

Aggregate must be non-plastic

(AASHTO T-89 & T-90 or MT-208)

Include 1.4% hydrated lime by total weight of mix.

1) Mix Design. Furnish the Grade S mix design if it is shown as a bid item in the contract. If the mix design is not shown as a bid item the department, if required in writing, will develop the Grade S mix design including the job mix targets for Contractor use.

a) Contractor Furnished. Submit a Superpave volumetric mix design following AASHTO PP28-99 and meeting AASHTO MP2-99, as modified by these provisions, for Department review and approval.

Use the following Table to develop the mix design.

Table 701-AA						
SUPERPAVE DESIGN REQUIREMENTS						
20 Year Design ESALs		Gyratory Compactive Effort			Coarse ¹ Aggregate Angularity	VFA ² %
Total (million)	Daily	N int.	N des.	N max.	1 face/ 2 face	
?0.3	?41	6	50	75	55 /-	70-80
0.3 to ?3	41-410	7	75	115	75/ 60	65-78
3 to ?10	410-1370	8	100	160	85 / 80	65-75
10 to ?30	1370-4110	8	100	160	95 / 90	65-75

¹Coarse aggregate is aggregate 4.75 mm and larger.

²Voids filled with asphalt.

If ESALs are not specified in the contract use the 20 Year design ESALS, 3-10 million row, to develop the mix design.

Meet the following volumetric requirements:

- Air Voids @ Ndes3.5%
- Voids in Mineral @ Ndes13.0% min.
- Dust/effective asphalt ratio0.8-1.6
Except: 0.6 – 1.2 for aggregate gradations passing above the restricted zone specified in Table 701-15B.
- % Rice @ N initial89% max.
Except 91.5% max. for 6 gyration N initial designs
90.5% max. for 7 gyration N initial designs
- % Rice @ N max.....98% max.

Follow AASHTO T283 to determine the mixture resistance to moisture induced damage, modified as follows:

Compact the 150 mm diameter specimens to approximately 95 mm at 7 ?1.0 percent air voids. Meet a tensile strength of 0.7 or greater.

Furnish adequate quantities of each aggregate stockpile to produce an 800 pound (362 kg) sample, when combined at the mix design blend ratio and 5 gallons (18.9 L) of the PGAB with the mix design submission.

The Department has 20 calendar days from receipt of the materials to review for approval the Contractor furnished mix design.

Plant mix bituminous surfacing produced before department approval of Contractor furnished mix design will not be accepted for payment.

b) Department Furnished Mix Design

Submit to the Project Manager a CB-30 QAS, with the stockpile blend ratio left blank, and 10 gallons (37.9L) of the PGAB along with 1,500 (680 kg) of the aggregate.

The Department has 30 calendar days from receipt of the mix design materials to furnish the mix design.

Contract time will be extended, day for day without any other compensation, for Department caused delays beyond the allowed 30 days, that delay aggregate or plant mix production.

C. Construction Requirements

Produce plant mix meeting Table 701-AA and the following targets, using a four test average:

Air Voids @ Ndes.....	3.5% ?0.3%
Voids in Mineral Aggregate @ Ndes	13.0% min.
Dust/effective asphalt ratio	0.8 – 1.6

Except: 0.6 – 1.2 for aggregate gradations passing above the restricted zone specified in Table 701-15B.

1) Meet Section 105.03 requirements, modified as follows:

a) Aggregate Evaluation for Acceptance. Aggregate is accepted under

Subsection 105.03.2.

b) Aggregate Quality Incentive Allowance. Revise subsection 105.03.3, first sentence to read: A 1.05 pay factor is applied to plant mix surfacing lots where the aggregate gradation test results for the No. 4 (4.75 mm), No. 30 (0.600 mm), and No. 200 (0.075 mm) sieves are not more than one-half the allowable tolerance from the job mix target value. Revise the second sentence to read: A 1.05 pay factor is applied to plant mix surfacing lots where the average density for lot (Xn) is from 94% to 95%, inclusive, of the maximum density and the range is three or less.

(2) Meet Section 401.03 requirements, modified as follows:

a) Job Mix Formula – Design. Remove the first two paragraphs of

Subsection 401.03.1A.

b) Job Mix Formula – Field Established. In the second paragraph of Subsection 401.03.1B remove “Marshall” and replace with “gyratory”.

c) Spreading and Finishing. Revise Subsection 401.03.10 as follows: place plant mix surfacing in compacted lifts between 50mm and 100mm thick.

d) Compaction, Compaction Control Testing, and Acceptance Testing.

Revise Subsection 401.03.12 as follows:

(1) 401.03.12 Compaction. Revise the first sentence to read: Once the plant mix is spread, struck-off, and surface irregularities are corrected, compact the plant mix to at least 93% of the target density.

(2) 401.03.12 (D) Acceptance Testing: If testing and acceptance of plant mix density by cores is included in the contract use the Coring Acceptance Testing Special Provision. Otherwise, revise the second paragraph to read: The average of the last four Rice gravity tests is used to establish a target density. The nuclear gauge density reading is divided by the target density currently in effect to arrive at a percentage. The target density is changed each time the average of the last four Rice gravity

density's change 0.5 pounds per cubic foot (8kg per cubic meter). The maximum specific gravity (Rice) is determined by the Project Manager from test results using AASHTO T-209 or MT-321.

D. Method of Measurement.

Plant mix pavement is measured under Subsection 401.04.1.

E. Basis of Payment.

Plant mix pavement is paid for under Subsection 401.05.

I. SECTION 402 - BITUMINOUS MATERIALS

1. General

Delete Subsection 402.04 through 402.05

2. Materials

Use Preform Penetration Grade 70-28 Asphalt Cement for all Highway 10 and approach paving.

J. SECTION 407 - BITUMINOUS PRIME AND TACK COAT

1. General

Delete Subsections 407.04 through 407.05.

2. Materials

Use SS-1 emulsified asphalt for tack coat. Use liquid calcium chloride or liquid magnesium chloride (dust palliative) for prime coat.

D20 Liquid Calcium Chloride or Liquid Magnesium Chloride (Dust Palliative) (Revised 3-15-02)

65. Liquid Calcium or Liquid Magnesium Chloride (Dust Palliative)

A. Description. Furnish and apply liquid calcium chloride or liquid magnesium chloride to be used for dust abatement on approved aggregate surface.

B. Construction Requirements

1) Pre-wet the aggregate surfacing before applying dust suppressant.

2) Apply liquid calcium chloride for dust suppression according to the manufacturer's recommendations, at the rate specified in the plans or as directed by the engineer project manager.

C. Materials.

Furnish liquid calcium meeting the following requirements.

Calcium Chloride

Calcium (CaC12) Min 29%

Sulfate (SO4) Max 2%

Specific Gravity 1.287 at 25°C (77°F)

D. Materials.

Furnish liquid magnesium chloride meeting the following requirements.

Magnesium Chloride
Magnesium (MgCl₂) Min 30.5%
Sulfate (SO₄) Max 2%
Specific Gravity 1.290 at 25°C(77°F)

- E. Method of Measurement. Liquid calcium chloride or liquid magnesium chloride is measured by the ton.
- F. Basis of Payment. Payment for liquid calcium chloride or liquid magnesium chloride is at the unit bid price for Dust Palliative. Payment includes all costs to furnish, deliver, haul, and apply liquid calcium or liquid magnesium chloride. The unit bid price for Dust Palliative will be reduced five percent for each one-percent (rounded to the nearest whole percent) the Calcium or Magnesium content is below the specified minimum requirement. The unit bid price for Dust Palliative will be reduced five percent for each one-percent (rounded to the nearest whole percent) the Sulfate content is above the maximum allowable limit.
- K. SECTION 551 – PORTLAND CEMENT CONCRETE
1. General
Delete Subsections 551.04 through 551.05
- L. SECTION 603 – CULVERTS, STORM DRAINS, SANITARY SEWERS, STOCKPASSES, AND UNDERPASSES
1. General
Subsection 603.03.1 First paragraph Delete last sentence and insert “Order pipe from field staking information.
Delete the 5th, 6th and 7th paragraphs.
Delete Subsection 603.04 through 603.05
Refer to MDT Detailed Drawings for culvert installation, racet, pipe extension, and pipe bedding details.
2. Optional Pipe
- A. Description
Corrugated polyethylene pipe is an option to RCP, CSP or CAP for approach drainage pipes as indicated in the plans.
- B. Material
Meet the requirements of Section 708.07 of the Standard Specifications for Road and Bridge Construction, and of Type S pipe as defined in Section 4 of AASHTO M294.
- C. Construction Requirements
Provide steel Flared End Terminal Sections (FETS) or Road Approach Culvert End Treatment (RACET) in accordance with MDT Detailed Drawing 603-02 and 603-14. Provide hardware for connection of the end section to the polyethylene pipe as approved by the project engineer.

M. SECTION 609 – CURBS AND GUTTERS

1. General
Delete Subsections 609.03.5 through 609.03.6
Delete Subsections 609.04 through 609.05

N. SECTION 610 - ROADSIDE VEGETATION

1. General
Subsection 610.03.1 Delete first two paragraphs and insert “Contractor shall spread topsoil conserved in the stripping operations. Topsoil will be spread uniformly over the disturbed areas to depths of 4 inches.”
Delete Subsections 610.03.2F. through 610.05

O. SECTION 618 – TRAFFIC CONTROL

1. General
Second paragraph delete the word alternate.
Subsection 618.03.5 Delete the last sentence.
Subsection 618.03.11 Delete in its entirety
Delete Subsection 618.04. through 618.05
2. Traffic Control Plan & Sequence of Operations

A. Traffic Control Plan

Submit a traffic control plan to the Montana Department of Transportation for approval in accordance with Subsection 618.03.2 and these contract provisions. Provide traffic control that results in the least amount of inconvenience possible to the traveling public.

Maintain two-way traffic on Highway 10 at all times at the end of each work day and at all times when specific grading, excavation, or paving work is not underway.

One way traffic control is permitted between the hours of 9:00 AM and 4:30 PM, Monday through Friday.

Under no circumstances close the present traveled way in both directions of travel for a period exceeding one-half hour in duration unless given specific approval by the engineer.

Maintain access to and from the premises of the adjacent property owners at all times.

Provisions, meeting approval of the County of Missoula, must be made to adequately provide for the travel of emergency and fire vehicles at all time.

Keep designated intersections open to general traffic at the end of each working day and on days when not working unless otherwise approved by the engineer. Submit the proposed detour and signing plan to the Montana

Department of Transportation and the Missoula County Surveyor for approval.

B. Sequence of Operations

Schedule operations in the sequences to provide the least amount of inconvenience possible to the traveling public. Before working in the area of the Highway 10 right-of-way, submit for approval a sequence of operations for this area that inconveniences, in the least possible degree, and assure the safety of the traveling public.

The left side of centerline must not be disturbed until all of the work through the first lift of plant mix bituminous base is completed on the right side of centerline.

Repair all damage to the primed surface and maintain a satisfactory riding surface for the traveling public. The contractor is responsible for all traffic control and maintenance costs of the primed roadway.

Culverts may be installed prior to grading operations. When the present traveled way is disturbed, replace the aggregate surfacing, place 0.20 foot (65 millimeters) of bituminous surfacing and maintain to provide a smooth riding surface. Costs of replacing and maintaining these areas must be absorbed in other culvert contract bid items.

Any of the above work sequences may be modified during construction upon request to the engineer, if such modifications would be in the best interest of the traveling public and adjacent property owners.

C. Public Notification

Notify the Missoula County Surveyor of all planned lane and roadway closures, and detours on a weekly basis. Submit a press release to the Missoulian for all planned lane and roadway closures, and detours, on a weekly basis. Submit notification no later than the Thursday prior to the upcoming week's work.

P. SECTION 619 – SIGNS, DELINEATORS, AND GUIDEPOSTS

1. General

All signs to be Type B high intensity grade reflective sheeting, designated as Type III per AASHTO M 268-84 Section 4.2.3.

Provide wooden sign posts per MDT standard details and specification. Drill posts for breakaway holes per detailed drawings.

Refer to MDT Detailed Drawings for mounting details, heights, and embodiment requirements.

Q. EPOXY PAVEMENT MARKING MATERIAL - 100% SOLID (REVISED 4-11-02) (Use on Projects paid by Liter)

Epoxy Pavement Marking Material – 100% Solid

A. Description. This work consists of surface preparation, furnishing, and applying epoxy pavement lines, words, and symbols shown in the Contract or directed by the Engineer.

B. Materials

- 1). General. Use a two component 100 percent solids epoxy material. No fillers or pigment extenders are permitted in the material. Part A consists of pigment and epoxy resins. Part B consists of the curing agent. Follow the manufacturer's mixing ratio when mixing the two components. Mix components within $\pm 2\frac{1}{2}$ percent of the manufacturers recommended mix ratio. The components, when combined, are not to contain or produce volatile solvents.

Assure Part A meets the following requirements:

<u>Pigment</u>	<u>White</u>	<u>Yellow</u>
TiO ₂ , meeting ASTM D-476, Type II	18-25	12-17
Organic Yellow		7-9
Epoxy Resin	75-82	74-82

Test the epoxy content of the epoxy resin in Part A under ASTM D 1652 and calculate as the weight per epoxy equivalent (WPE) for both white and yellow. Determine the epoxy content on a pigment free basis. The accepted epoxy content range (WPE) is ± 50 of the manufacturer's target value.

Assure Part B meets the following requirements:

Test the amine value of Part B in accordance with ASTM D 2074 to determine total amine value. Assure the total amine value meets the manufacturer's target value with the acceptance range being ± 50 of the manufacturer's target value.

- 1) Glass beads. Use glass beads meeting the requirements of Subsection 714.05.
- 2) Hardness. Use epoxy having a Shore D hardness between 75 to 100 when tested under ASTM D 2240. Apply epoxy to a metal substrate.
- 3) Tensile Strength. Test tensile strength under ASTM D 8638, resulting in a minimum tensile strength of 6000 psi (42 MPa). Cast Type IV specimens in a mold not exceeding $\frac{1}{4}$ inch (6.38 mm) per minute. Assure pour rate is $\frac{1}{4}$ inch (6.38 mm) per minute).
- 4) Compressive Strength. Test material under ASTM D 695, as modified herein; resulting in a cured sample with a minimum compressive strength of

12,000 psi (83 MPa), a maximum compression rate of ¼ inch (6.38 mm) per minute and measuring ½ inch (12.7 mm) high by ½ inch (12.7 mm) in diameter.

5) Weather Resistance. Apply mixed epoxy, both white and yellow, at 15 mils ± 1 mil (0.381 mm ± 0.0254 mm) thickness to 3 x 6 inch (75 mm x 150 mm) aluminum panels. Assure epoxy does not contain beads. Expose the cured sample in an Environmental Test Chamber as described in ASTM G 53. Conduct the test for 80 hours at 122°F (50°C), alternating 4 hour cycles of condensation and ultraviolet light.

	<u>SPECIMEN</u>	<u>REQUIREMENTS</u>
	White Material	ASTM E 1347, directional reflectance a minimum 80% after exposure
	Yellow Material	Initially conform to V+ to C+ limits when visually compared with the highway yellow color tolerance chart, PR #1 of June 1965. The exposed material color must be within V+, C+ and H+ limits when compared.

6) Laboratory Driving Time. Mix epoxy marking material at the manufacturer's specified ratio and apply at 15 mils ± 1-1/2 mils (0.0381 mm) wet film thickness at 75°F ± 2°F (24°C ± 1°C) with the specified glass bead application. Assure it has a maximum no tracking time of 30 minutes when tested using ASTM D 711.

7) Viscosity. Assure individual component's viscosity is within 10 percent of each other at the recommended spray temperature and that Component B has a constant viscosity at the recommended spray temperature.

8) Mixing and Application. Mix and apply components following all of the manufacturer's recommendations.

9) Packaging and storage. Transport and store the epoxy marking material at the project in the manufacturer's original container before being mixed for use. Follow the manufacturer's instructions regarding material storage and handling.

Mark each container identifying the color, batch or lot number, manufacturer's name, address, and date of manufacture.

10) Material Acceptance. Furnish a certification consisting of a certified copy of a laboratory report listing the results of the specified tests and certifying that the materials furnished meet the specifications. Refer to the applicable specification in the certification. Perform tests in the manufacturer's laboratory or another qualified independent laboratory. Conduct tests on samples obtained from the lot or lots of material supplied for use in the work.

C. Construction Requirements.

1) General. The applicable requirements of Subsection 620.03 apply to the installation of epoxy pavement marking material. Provide the Engineer the Manufacturer's certification before the material is delivered to the project. Materials not meeting the manufacturer's product specifications will not be approved for use on the project. The Engineer may request a manufacturer's sample or take field samples for testing. Use a sample weighing a minimum of two pounds (0.91 kg).

Remove from the work and replace material represented by samples falling on or more tests.

2) Allow a minimum 45 days after seal coat operations before placing epoxy pavement markings.

3) Application Instructions. Provide the Engineer a copy of the manufacturer's instructions for surface preparation and material application at least 24 hours before application work begins.

Include in the Instructions:

- Equipment Requirements
- Approved Work Methods and Procedures
- Material Application Range
- Ambient & Surface Temperature Requirements
- Weather Limitations
- Precautions

All other requirements for successful application and material performance.

Do not use materials with incomplete or without instructions.

4) Surface and Temperature Requirements. Apply epoxy pavement marking material following the manufacturer's surface and temperature requirements.

5) Application. Apply a wet film thickness of 20 mils \pm 2 mil (0.508 mm \pm 0.0508 mm) immediately followed by applying glass beads to the wet epoxy at 25 pounds per gallon (3 kg per liter). Match the existing markings configuration unless otherwise directed by the Engineer.

6) Surface Preparation;

a) All Surfaces: Clean the substrate free of debris and deleterious material by high pressure air blast immediately ahead of the epoxy application.

b) Chip seals, friction courses: Prepare surfaces with a tightly adhered single coat of traffic paint and surfaces with multiple coats of traffic paint by lightly grinding all lines on the roadway surface. Light grinding is defined as surface abrasion to a depth of 20 mils \pm 10 mils (0.508 mm \pm 0.254 mm) for the purpose of establishing a roughened surface, removal of loose paint chips, removal of loose seal aggregate and removal of surface impurities, for the purpose of effective epoxy bonding. Remove a depth of 20 mils \pm 10 mils (0.508 mm \pm 0.254 mm). Depth of removal is measured vertically down, from the bottom of a three foot (0.92 meter) or longer straight edge placed on the surface of the roadway, to the ground surface. Immediately suspend surface removal if the 30 mils (0.762 mm) depth is exceeded and take corrective action.

c) Concrete Surfaces: Treat concrete surfaces the same as asphalt surfaces by lightly grinding the surface to remove any foreign material and any curing compound.

d) Meet the limits of removal as follows:

(1) Not greater than 1 inch wider (25 mm) than the existing stripe.

(2) Not longer than 4 inches (100 mm) from the beginning or end of the stripe being removed.

(3) Any other removal deviating from 1 and 2 above will be at the direction of the Engineer.

e) Collect and dispose of all removed material and new traffic marking materials spilled during the performance of this contract. Process, handle, transport, and dispose of these materials as solid waste in conformance with applicable laws and regulations.

7) Equipment. Assure epoxy application machine precisely meters the two components, produces and maintains the mixing head temperature, all within the epoxy manufacturer's specifications. Equip the application machine with a high pressure air blast device for cleaning the surface ahead of the marking application. In addition, equip the machine with a guide pointer to maintain an accurate line; at least two spray guns operable separately or simultaneously; an automatic device that produces a broken line of the specified length; and an automatic glass bead dispenser(s) synchronized with the spray

gun(s). Assure the machine has a metering device to register the applied gallons (liters) for each gun.

8) Marking Protection. Assume responsibility for traffic control devices used to prevent tracking of the new stripe. These devices will not be paid for separately and payment will be included in other contract bid items. The only traffic control devices that will be paid for is when the Engineer requires that they be installed.

D. Method of Measurement. Epoxy pavement markings are measured by the gallon (liter) under Subsection 620.04 for the specified color and quantity actually placed and accepted.

E. Basis of Payment. Epoxy pavement markings are paid for at the Contract unit price bid per gallon (liter) under Subsection 620.05. Price and payment is full compensation for the work, including all labor, materials and equipment used in the work.

END OF SECTION

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