

NOTIFICATION OF ADDENDUM

ADDENDUM NO. 2

DATED 11/29/2007

Control	0158-02-060
Project	BR 2008(099)
Highway	US 67
County	TOM GREEN

Ladies/Gentlemen:

Attached please find an addendum on the above captioned project. Included in the attachment is an addendum notification which details the changes and the respective proposal pages which were added and/or changed.

Except for new bid insert pages, it is unnecessary to return any of the pages attached.

Bid insert pages must be returned with the bid proposal submitted to the Department, unless your firm is submitting a bid using a computer print out. The computer print out must be changed to reflect the new bid item information.

Contractors and material suppliers, etc. who have previously been furnished informational proposals are not being furnished a copy of the addendum. If you have a subcontractor on the above project, please advise them of this addendum. Acknowledgment of this addendum is not requested if your company has been issued a proposal stamped "This Proposal Issued for Informational Purposes."

You are required to acknowledge receipt of this addendum on the Addendum Acknowledgement form contained in your bid proposal by placing a mark in the box next to the respective addendum.

Failure to Acknowledge receipt of this addendum in your bid proposal will result in your bid not being read.

SUBJECT: PLANS AND PROPOSAL ADDENDUMS

PROJECT: BR 2008(099)

CONTROL: 0158-02-060

COUNTY: TOM GREEN

LETTING: 12/04/2007

REFERENCE NO: 1128

PROPOSAL ADDENDUMS

- PROPOSAL COVER
- BID INSERTS (SH. NO.:)
- X GENERAL NOTES (SH. NO.: B, E)

- SPEC LIST (SH. NO.:)
- SPECIAL PROVISIONS:)
- ADDED:

DELETED:

- SPECIAL SPECIFICATIONS:
- ADDED:

DELETED:

X OTHER: See changes below

DESCRIPTION OF ABOVE CHANGES
(INCLUDING PLANS SHEET CHANGES)

General Notes:

- Sheet B - basis of estimate table revised for item 316 aggregate from 133,719 SY to 1,776 SY and from 1573 CY to 21 CY
- Sheet E - Item 8 working day charges revised to 8.3.A.4 Standard Workweek

Plan Sheets:

- Sheet 4 - Replaced
- Sheet 5 - Replaced
- Sheet 5B - Replaced
- Sheet 95 - wording revised for percent of portland cement from ten to seven

GENERAL NOTES:

SPECIFICATION DATA

Item number	Description	Master Grading - Cumulative Percent Retained On Square Sieves					Soil Constants		Wet Ball Mill Max
		1 3/4"	7/8"	3/8"	No. 4	No. 40	L.L. Max	P.I. Max	
247	Flexible Base	0-5	18-35	35-55	50-75	75-90	35	12	40

Notes:

All tests will be in accordance with the Departments standard test methods.

Triaxial requirements will be Class 1 when tested in accordance with Test Method Tex-117-E, "Triaxial Compression for Disturbed Soils and Base Materials," Part II, Accelerated Method for Triaxial Compression of Soils.

Minimum compressive strength will be 175 psi at 15 psi lateral pressure when tested in accordance with Test Method Tex-117-E, "Triaxial Compression for Disturbed Soils and Base Materials," Part II, Accelerated Method for Triaxial Compression of Soils.

The maximum increase in material passing the number 40 sieve resulting from the wet ball mill test will not exceed 20.

Tolerances as set forth in the Standard Specifications will be permitted.

COMPACTION REQUIREMENTS

Item No.	Description	Course	Minimum Density
400	Excavation and Backfill for Structures	all	98

Note:

Percent of Density will be as determined by Test Method Tex-113-E, "Laboratory Compaction Characteristics and Moisture-Density Relationship of Base Materials," Test Method Tex-114-E, "Laboratory Compaction Characteristics and Moisture-Density Relationship of Subgrade and Embankment Soils," and Test Method Tex-115-E, "Field Method for Determining In-Place Density of Soils and Base Materials."

BASIS OF ESTIMATE

Item number	Description	Usage	Amount	Rate	Estimated Quantity
310	Prime Coat (Cutback Asphaltic Material)	Flexible Base	1,776 SY	0.15 GAL/SY	266 GAL
316	Surface Treatments	Asphalt	1,776 SY	0.36 GAL/SY	639 GAL
316	Surface Treatments	Aggregate	1,776 SY	85 SY/CY	21 CY
344	PRF-DSGN-MX-CMHB-C SAC-B PG 76-22	2 1/2 "	1,776 SY	275 LB/SY	244 TON
730	Full-Width Mowing	4 Times	2.81 AC		11.24 AC
734	Litter Removal	2 Times	2.81 AC		11.24 AC

GENERAL NOTES

The following Standard Sheets have been modified: *"none"*

All signs, markings and signals will conform to details shown in the plans, the Compliant Work Zone Traffic Control Device List (CWZTCDL), the Department's Standard Sheets, "Standard Highway Sign Designs for Texas" and "Sign Crew Field Book." These publications are available from the Department's Traffic Operations Division, 1st Floor, 118 E. Riverside Drive, Austin, Texas, telephone number (512) 416-3134.

In those instances where fixed features require, the governing slopes indicated in these plans may be varied from within the limits to the extent determined by the Engineer.

Dispose properly of all waste materials generated on the project site at locations outside of the right of way. All waste materials will be disposed at a State approved solid waste site. At the Preconstruction Meeting provide in writing to the Engineer the approved site. This will not be paid for directly, but will be subsidiary to the various bid items.

Provide, in a timely manner, payrolls to the Engineer for all Contractor and Subcontractor employees working on this project. Should payrolls not be provided, the Engineer will hold monthly estimate payments until the Engineer has received payrolls. The estimate payment that was retained will not be paid until the following month.

String used for construction purposes will be a biodegradable-type product such as twine. Polypropylene string will not be used. Remove any string from the work zone immediately after completing the work for which the string was used.

If a pit is established within 200 feet of a public road, construct a barrier or other device in accordance with Natural Resources Code, Chapter 133, Section 133.041.

Maintain, for the duration of the project, those sections of existing and proposed roadways and appurtenances that are to be constructed, reconstructed or modified. This will not be paid for directly, but will be subsidiary to the various bid items.

Construct and maintain haul roads and provide necessary openings in the right of way fence. This work will not be paid for directly but will be subsidiary to the various bid items.

Should hazardous materials be encountered during the construction of this project, work will be suspended within the affected area upon exposing the contamination. The Department will then mobilize a contract for the testing and removal of the contamination. No compensation only suspension of time will be allowed should this operation interfere with his work.

Existing delineators and driveable signs on this project will be removed and become property of the Contractor, as progress on the job requires. This work will not be paid for directly, but will be considered subsidiary to the various bid items.

All items described in the plans that have not been identified in the proposal as separate bid items or otherwise identified for payment are subsidiary. The work performed, materials

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furnished, equipment, labor, tools, and incidentals will not be measured or paid directly, but will be subsidiary to pertinent Items.

Item 5, "Control of the Work"

Responsibility for construction surveying will conform to Item 5, Article 5.6 (A) "Method A" of the Standard Specifications.

Before contract letting, electronically generated earthwork cross-section data will be available at the Engineer's office free of charge to the prospective bidders on magnetic media or by a computerized transfer of files. Earthwork cross-section data as provided above is for non-construction purposes only and it is the responsibility of the prospective bidder to validate the data with the appropriate plans and Specifications.

Before construction commences, the Engineer will provide permanent benchmarks. Replace any benchmarks disturbed by the construction work at own expense as directed and verified by the Engineer.

For subgrade and finished base, blue tops will be placed at a maximum of 50 feet intervals along the length of the roadway. At each interval and at each side, a row of (2) two blue tops will be placed along the width of the proposed roadway expansion.

Note that the coordinate system for this project is a surface coordinate system and not a state plane.

Use the coordinate system established by the Department. This coordinate system and control points will not be deviated from. Any additional control points will be established by the Department.

There may be utilities within the right of way. Not all utilities have been shown in the plans. Any utility locations shown in the plans should be considered to be approximate. Verify the locations of any utilities shown in the plans, and locate utilities not shown in the plans.

Item 6, "Control of Materials"

Furnish the Engineer with a list of vehicles used to deliver material to the project and the maximum legal load for each vehicle. This information will be required before any payment is made for material delivered in any vehicle.

Daily storage of equipment along the roadway will be in areas approved by the Engineer so that environmental impacts can be minimized.

Make all arrangements for equipment and storage areas, if located off the right of way.

Do not use non-legal load equipment to haul material on roads.

Item 7, "Legal Relations and Responsibilities to the Public"

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Request and coordinate any necessary de-energizing of existing overhead electric lines. This work will not be paid for directly, but will be subsidiary to the various bid items.

Maintain driveways in an accessible condition at all times, unless otherwise directed by the Engineer.

In addition to complying with the Texas One-Call Law (Utilities Code Title 5, Chapter 251), make suitable advance notification to the City of San Angelo regarding Class B underground facilities, and call the Department's San Angelo District Traffic office at telephone number (325) 947-9281 to have the Department's traffic signal and illumination utilities located.

Conduct operations so that all equipment will be removed from the roadway at sundown and work will not begin before sunrise, unless otherwise approved herein or directed by the Engineer.

Item 8, "Prosecution and Progress"

Create and maintain a project schedule showing the manner of prosecution of the work that he intends to follow in order to complete the contract within the allotted time. Use the latest version of Primavera System, Inc. (Primavera Project Planner or Suretrack Project Scheduler computer scheduling software or equal as approved by the Engineer). Provide the Engineer with a revised project schedule three days before the end of the month in order for the Engineer to process monthly payment estimates. Make corrections/revisions as requested by the Engineer.

Charges for working days shall conform to Section 8.3A.4, "Standard Workweek".

Coordinate work operation with other Contractors performing utility adjustments within the project limits. No additional time for utility adjustment delays or extra compensation will be granted for the utility Contractors who have not completed their utility adjustments by the time specified. This work will not be paid for directly but will be considered subsidiary to the various bid items.

The number of working days allowed to complete this project and interim milestones, if any, was calculated using a conceptual time determination schedule. The time determination schedule assumes generic resources, production rates and sequences of construction.

Furnish production rates for each activity on the time schedule.

Every effort has been made to schedule the work in accordance with the traffic control plans and sequence of work included in the proposal.

The Department will supply bidders upon written request one electronic copy of the time determination schedule. The electronic copy of the schedule will be compatible with primavera project planner software. The time determination schedule is provided for informational use only and is not intended for bidding or construction purposes. If the bidder utilizes the schedule for bidding or construction purposes, the bidder accepts the schedule as their own and the bidder assumes the responsibility for verifying all aspects of the schedule.

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The Department will not adjust the number of working days for the project and milestones, if any, due to differences in opinion regarding any assumptions made in the preparation of the schedule or for errors, omissions or discrepancies found in the time determination schedule.

Responsible for all delays caused by Subcontractors not providing an adequate work force and equipment to complete the project in a timely manner. No additional time or compensation will be granted to perform this work.

Item 9, "Measurement and Payment"

Provide a conversion rate for units of payment for work subcontracted to disadvantaged business enterprises if units of payment differ from those shown on plans. These conversion rates for units of payment will require written approval from the Engineer. Should no conversion rates be provided, the Engineer will hold the monthly estimate payment until the Engineer has agreed to and approved the conversion rates. The estimate payment that was retained will not be paid until the following month.

Item 100, "Preparing Right Of Way"

The entire right of way within the project limits will be considered as being included in the "100-Foot Station" as measured along the centerline of the road.

Removal of any structure or obstruction including small trees and brush, concrete slabs, fences, debris from demolished houses and pipes in the right of way will be considered as included in payment for this item.

Pumping and removal of water as directed by the Engineer will be considered as included in payment for this item.

Trim overhanging trees along the right of way as directed by the Engineer for the duration of the project. This work will be considered as included in payment for this item.

Item 104, "Removing Concrete"

For traffic signal and roadway illumination foundations to be removed, remove and neatly square off concrete to a depth of two feet below proposed finished grade. This will not be paid directly, but will be considered subsidiary to this item.

Item 110, "Excavation"

Prior to contract letting, electronically generated earthwork cross-section data will be available free of charge to the prospective bidders on magnetic media. This data will be available through the Engineer's office. Earthwork cross-section data as provided above is for non-construction purposes only and it is the responsibility of the prospective bidder to validate the enclosed data with the appropriate plans, specifications and estimates for the project.

All cross-section data provided will be in GEOPAK standard format.

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All material neither incorporated into the roadway nor used in backfilling structures will be termed waste, and will be properly disposed at a location outside of the right of way at a State approved solid waste site.

Item 132, "Embankment"

If the excavation and fill quantity does not fulfill the required embankment quantity, secure embankment from a borrow source.

The use of salt water with solids, as determined by evaporation, in excess of 10,000 parts per million will not be permitted.

Item 160, "Topsoil"

Topsoil will not be paid for directly, but will be considered as included in payment for Item 161, "Compost".

All areas that are designated to receive seeding will receive four inches of Compost Manufactured Topsoil (CMT) in accordance with Item 161, "Compost" and seeding in accordance with Item 164, "Seeding for Erosion Control".

Grading and excavation needed to place Compost Manufactured Topsoil (CMT) to finish grade will not be paid for directly but will be considered as included in payment for this item.

Roll Compost Manufactured Topsoil (CMT) with a light corrugated drum roller of the type approved by the Engineer. Rolling will be performed in a manner such that grass establishment is not impaired. This work will not be paid for directly but will be considered as included in payment for this item.

Topsoil will be sandy loam or clay loam. Topsoil will be typical of the surrounding area. Topsoil will have no noxious weeds, sticks, roots or stones larger than one inch. Topsoil will be consistent in texture. The maximum lump size permitted will be one inch.

The Engineer will determine whether material found on-site is acceptable for use. If the quantity of topsoil removed from the right of way does not fulfill the required topsoil quantity, furnish topsoil from a borrow source secured by the Contractor and approved by the Engineer.

Item 161, "Compost"

All areas that have a slope of 3:1 or flatter and are designated to receive seeding will receive compost manufactured topsoil application at a depth of four inches. Any grading, excavation and rolling necessary to accommodate the required compost manufactured topsoil depth will not be paid for directly but will be considered as included in payment for this item. Pre-blended (PB) compost manufactured topsoil will be required for this project.

Topsoil will not be paid for separately, but will be considered as included in payment for this item.

Item 162, "Sodding for Erosion Control"

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All areas to be seeded will be finished, seeded, and receive hay mulch applied after seed has been installed by drill seeding operation and as specified herein. A mulching machine will be used for spreading the hay. The equipment will be capable of injecting latex or guar as a tacking agent into the hay mulch. Engineer may accept finished areas as work on the roadway progresses.

Item 164, "Seeding for Erosion Control"

Engineer may delay seeding due to seasonal or weather conditions. No extra compensation will be allowed or awarded for this delay.

Notify the Engineer of scheduled seeding operation twenty-four hours prior to seeding application. Seeding operation will not commence until Engineer has approved seedbed preparation.

Permanent and temporary grass cover will consist of these grass types in rates as follows:

Rural application mix - (total of 25 pounds per acre):

Buffalo grass (*buchloe dactyloides*) "Topgun," "Plains," "Texoka," "Bison," "Cody," "Comanche," "Sharps," or "Tatanka" variety or another variety or a mix of varieties as directed by the Engineer. Minimum pure live seed at 75 percent and seed rate of 0.12 pounds per 1,000 square feet (5 pounds per acre).

Blue grama (*bouteloua gracilis*) "Hachita" or "Lovington" variety. Minimum pure live seed at 32 percent and seed rate of 0.12 pounds per 1,000 square feet (5 pounds per acre).

Sideoats grama (*bouteloua curtipendula*) "Haskell," "El Reno," "Vaughn," "Niner," variety. Minimum pure live seed at 65 percent and seed rate of 0.12 pounds per 1,000 square feet (5 pounds per acre).

Sand dropseed (*sporobolus cryptandrus*). Minimum pure live seed at 80 percent and seed rate of 0.12 pounds per 1,000 square feet (5 pounds per acre).

Tall fescue (*festuca elatior*) "Rebel" or another cool-season grass variety as directed by the Engineer. Minimum pure live seed at 90 percent and seed rate of 0.12 pounds per 1,000 square feet (5 pounds per acre).

Apply seed by drill seeding to provide seed-to-soil contact. Seed will be shipped in separate bags and provide original tags to the Engineer for verification of quantity and type. Seed source will be from the most recently harvested crop.

Drill seed equipment will be specifically designed for grass cover turf establishment, and will have a distance of one to four inches between drill lines.

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The following drill seed equipment is approved for use:

Agco Tye
Box 1120
Lockney, Texas 79421
(806) 652-3367

Brillion Iron Works, Incorporated
200 Park Avenue
Brillion, Wisconsin 54110
(800) 409-9749

or approved equal

No additional blading or vehicular disturbance of any kind will be permitted on accepted areas except for mowing as may be required. The intent of this requirement is to promote early growth of vegetation on open areas for permanent grass cover and erosion control.

In those areas where the Engineer determines that use of the drill seed equipment is not feasible, the Contractor will apply seeding by broadcast spreading, followed by raking seed into the soil. Any required broadcast spreading and raking will not be paid for separately but will be considered as included in payment for this item.

Item 166, "Fertilizer"

Fertilizer will be a granular-form commercial grade slow or time release fertilizer provided and applied as follows: 16-8-8 analysis, or similar analysis, "SCU" (sulfur coated urea) slow release or a "polyon" (polymer coated) slow or time-release fertilizer applied at a rate of three pounds per 1,000 square feet (130 pounds per acre).

Fertilizer will be applied prior to seeding or concurrently with drill seeding operation and prior to the hay mulch application.

Fertilizer will not be paid for separately but will be subsidiary to Item 164, "Seeding for Erosion Control."

Item 247, "Flexible Base"

Flexible base will be stockpiled prior to delivery on the road in such a manner as to provide a minimum working face of not less than thirteen feet.

Maintain flexible base stockpiled for this project separate from any other stockpiled material. Label this stockpile with project number and material type and grade.

Moisture content will be within two percentage points above or below optimum moisture, as determined by Test Method Tex-113-E, "Laboratory Compaction Characteristics and Moisture-

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Density Relationship of Base Materials,” and Test Method Tex-115-E, “Field Method for Determining In-Place Density of Soils and Base Materials.”

Flexible base will be placed in equal lifts not to exceed six inches in depth, unless otherwise shown on the plans.

Provide the Engineer with 24 hours written notice of intent to begin crushing operations. Any materials produced without this notice will not be accepted.

Item 302, “Aggregates for Surface Treatments”

All aggregate except limestone rock asphalt (LRA) will be precoated with AC asphalt. LRA aggregate will be precoated with a material containing a minimum of 25 percent asphalt.

The surface aggregate classifications for sources on the Aggregate Quality-Monitoring Program (AQMP) are listed in the Department’s Rated Source Quality Catalog. If the Contractor proposes to supply aggregates from a source that is not listed, the aggregates will be sampled and tested prior to use.

Coarse aggregate used in the travel lanes for the surface or finish course will meet the Department’s Wet Weather Accident Reduction Program (WWARP) surface aggregate classification, Class B requirements.

All aggregates, before being precoated with AC asphalt, will be inspected, tested and approved by the Engineer. Any aggregate that has been precoated without prior test will not be used.

After meeting the testing requirements, aggregates will be stockpiled separately and then labeled.

Item 310, “Prime Coat”

Apply prime coat to base course that has met the required density within 24 hours. Should the prime coat not be applied within the 24-hour period, then, rework the base material at own expense.

Allow for prime coat to cure for (7) seven days before conducting seal coat operations unless otherwise directed by the Engineer.

Item 316, “Surface Treatments”

Remove existing raised pavement markers and/or non-reflective traffic buttons from the roadway surface and immediately repair any damage to the roadway surface. Removed raised pavement markers and/or non-reflective traffic buttons will be termed waste, and will be properly disposed at a location outside of the right of way. This work includes areas that will only be overlaid with hot-mix only. This work will not be paid for directly but will be subsidiary to the various bid items.

Keep all concrete curbs and railing clean and free of asphalt and other stains during construction.

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Asphalt Type AC-5 will be the primary choice of asphalt to be applied between May 15 and September 15. Asphalt Type AC-3 will be used from September 16 to November 1 and from March 1 to May 14 unless otherwise approved in writing by the Engineer.

Suspension of time will be allowed from November 2 to February 28 provided this work falls in the Critical Path. No other work will be allowed during the time suspension. No additional compensation for suspension of time including barricades will be allowed.

Apply aggregate uniformly. Lack of uniformity, such as spots where coverage is not complete, will be corrected by hand spotting or another equally satisfactory method approved by the Engineer before any subsequent operations are undertaken.

All longitudinal joints will match lane lines.

Application rates of asphalt and aggregate shown on the plans are for estimating purposes only and may be varied by the Engineer.

Apply asphalt at temperatures near the minimum application temperatures as shown in Article 300.4, B. Storage and Application Temperatures of the Standard Specifications, unless otherwise directed by the Engineer.

Flat wheel rolling will not be allowed for this item.

Rolling Equipment will meet the requirements of Item 210, "Rolling (Pneumatic Tire Rollers)," medium pneumatic tire roller.

Do not place wet aggregate.

Item 344, "Performance-Designed Mixtures"

Asphalt material for this item is PG 76 -22.

If materials obtained for the production of asphaltic concrete are from a limestone quarry use a minimum of one percent lime anti-strip, and moisture susceptibility testing will be waived. Any other type of material used for the production of asphaltic concrete will require the moisture susceptibility test. This work is included in payment for this item.

If a limestone material source is utilized, Test Method Tex-531-C, "Prediction of Moisture Induced Damage to Bituminous Paving Materials Using Molded Specimens" will not be required.

Provide a thirty (30) foot ski for the asphalt paving operations.

Trial batches are required. This work is included in payment for this item.

Saw all transverse joints. This work is included in payment for this item.

Do not dump and reload hot mix asphalt.

Approved asphalt release agent products and dilution rates are listed in the Department's Material/Producer List, Section 2 "Asphalt Release Agents".

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Provide equipment that produces a continuous flow of material to the paving machine to allow for non-stop placement of asphaltic concrete for the surface course on the travel lanes. The equipment provided to satisfy these requirements will consist of either a material transfer vehicle or a windrow pick-up unit, along with a conventional paving machine and a sufficient number of haul units to insure such non-stop placement. Paving equipment will only be allowed to stop three times in one day when laying asphalt concrete pavement. Asphalt paving operations will be shut down until the next working day on the 4th stop. A working day will be charged for this operation.

Provide the Engineer with the manufacturer's set-up, operation and trouble shooting manuals for the asphalt paving machine and the material transfer vehicle or windrow pick-up equipment.

Any placement operation or transport operation that may cause contamination of the mixture or adversely affect mixture properties shall not be allowed, as determined by the Engineer.

Asphaltic concrete shall be measured by the composite weight method. Material haul tickets shall show weight of material contained in each truck as delivered to the laydown equipment.

All requirements of item 301, "Asphalt Antistripping Agents," for testing of the mixture during design and production shall apply.

The tensile strength ratio (TSR), as measured by Test Method Tex-531-C, "Prediction's Moisture Induced Damage to Bituminous Paving Materials Using Molded Specimens" shall be 0.85 minimum.

When Type A hydrated lime is used, then the lime will be thoroughly mixed with the aggregate in a pugmill, or use a vane feeder with weight pods to inject the proper amount of lime directly into the drum just below the point where the asphalt enters. Both points must be isolated from the airflow within the drum by an inverted cylinder.

Longitudinal joints shall conform to lane lines or centerline of roadway.

The shoulders and ramps are subject to in-place air voids determination.

Should the ACP joints not conform within 6 inches of the lane line or centerline, then no payment will be made for the ACP work performed for the entire width and length in which discrepancy is encountered.

The Engineer will randomly check weight on trucks containing Asphaltic Concrete Pavement material. Random weight checks will be based on 5 percent of the total number of vehicles required to haul material to the project. The truck will be sent to a public weigh station designated by the Engineer. The total cost associated for weighing the transport shall be subsidiary to Item 344 "Performance-Design Mixtures".

Suspension of time will be allowed from November 2 to February 28 provided this work falls in the Critical Path. No other work will be allowed during the time suspension. No additional compensation for suspension of time including barricades will be allowed to perform this work.

Construct longitudinal joints in accordance with sheet LJD1-1, "ACP Longitudinal Joint Detail".

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No tack coat is required, except for longitudinal joints.

The number of gyrations for design of the mixture is 75.

Item 400, "Excavation and Backfill for Structures"

Pea gravel material will not be used for bedding or backfilling structures.

Material may be used from roadway excavation or a borrow source.

Material used for backfill will be cement stabilized with two sacks of cement per cubic yard. Excavation beyond the dimensions shown in the plans will be cement stabilized. No additional compensation will be allowed for the additional cement stabilized backfill.

Class B bedding will be required and will be approved by the Engineer prior to use.

Item 416, "Drilled Shaft Foundations"

Provide positive means for flushing and containing slurry and contaminated concrete during concrete placement.

For all foundation installations, hire a Registered Engineer or Licensed Surveyor to determine the locations and elevations of any permanent foundation installation (traffic signal, illumination, etc.).

Item 421, "Hydraulic Cement Concrete"

Type II cement will be used for all concrete. Type II cement will be required for all precast concrete except for beams.

Test Method Tex-418-A, "Compressive Strength of Cylindrical Concrete Specimens" will determine acceptance of the concrete.

Type "F" fly ash will be required for all concrete to provide for a sulfate-resistant concrete. Twenty (20) percent fly ash by absolute volume will be used for all concrete except for beams. Mix Design Option 1.

Furnish and properly maintain all test molds. The Test Molds will meet the requirements of Test Methods 418-A and Tex- 448-A and in the opinion of the Engineer must be satisfactory for use at the time of use. In addition, furnish personnel to remove the test specimens from the molds and to transport them to the proper curing location as designated by the Engineer and in accordance with the Governing Specification. For all concrete items, have a wheelbarrow, or other container acceptable to the Engineer, available to use in the sampling of the concrete.

The Department will provide strength-testing equipment for hardened concrete.

No additional compensation will be allowed for providing all labor and equipment to perform this work. The Engineer will sample all concrete and make all test beams and cylinders in accordance with Test Methods Tex-418-A and Tex-448-A.

Item 427, “Surface Finishes For Concrete”

Concrete for bridges and cast-in-place and precast railings will receive a Surface Area 1 rub finish.

Item 432, “Riprap”

Concrete riprap will be reinforced with #4 reinforcing steel bars on one foot centers each way, unless otherwise shown on the plans.

Additional riprap may be required as directed by the Engineer for use as a permanent erosion control measure.

Excavation and embankment needed to place riprap will not be paid for directly but will be considered as included in payment for this item.

Place 1/2-inch thick asphalt-impregnated fiberboard between concrete riprap and adjacent curb and gutter, retaining wall, etc. and where directed by the Engineer. This will not be paid for directly but will be considered as included in payment for this item.

Edge all concrete riprap joints with an edging tool.

Concrete riprap will be 4 inches thick unless otherwise shown on the plans.

The Engineer may at his discretion, increase, reduce, or relocate riprap placement from the location shown on the plans.

Item 450, “Railing”

Furnish and install barrier reflectors on the top of concrete railing. Furnishing and installation of reflectors will be subsidiary to this item.

Construct railings to increased heights as shown on the plans to accommodate future overlay.

Item 496, “Removing Structures”

This item shall include the complete removal and proper disposal of existing structures, including but not limited to the following: culvert barrels, railing, wingwalls, headwalls, retaining walls, safety end treatments, pipe runners, riprap, deck, overlay, approach slabs, joints, beams, bracing, drains, conduits, pipes, bents, abutments, columns, pilings, footings, web-walls, drilled shafts, reinforcing steel, bridge protective assemblies, clearance signs, etc., unless otherwise shown on the plans.

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Item 502, "Barricades, Signs and Traffic Handling"

All requirements listed in the general notes under this item will not be paid for directly, but will be considered as included in payment for this item, unless otherwise indicated.

Type C (High Specific Intensity-grade) flat surface reflective sheeting and Type E (Fluorescent Prismatic), transparent cuttable film and screen inks and additives will conform to Departmental Material Specification "DMS-8300, Flat Surface Reflective Sheeting."

Maintain signs and barricades on a regular basis as directed by the Engineer.

Locations of signs shown are approximate only, and will be installed in accordance with the Department's Traffic Control Standard Sheets.

Temporarily cover or remove any existing signs that conflict with proposed signs shown in the plans, as directed by the Engineer.

Provide certified flaggers where it is necessary to haul material across lanes of traffic.

Provide certified flaggers at such times and locations as directed by the Engineer to ensure the safe passage of traffic through construction areas.

When certified flaggers are used to draw attention to traffic control devices, then use "FLAGGER AHEAD" (CW20-7a) signs.

Certified flaggers will use 24" STOP/SLOW paddles.

Furnish regulatory speed limit signs, constructed to Department Standards and mounted on portable sign supports. Engineer will determine placement locations and will provide immediate supervision to the Contractor in placing, removing and replacing these signs.

All signs detailed in the traffic control plan will be mounted in the ground unless otherwise approved by the Engineer.

Type III barricades will be eight feet long.

Type III barricades will be skid type.

Channelizing devices will be as shown on the plans.

Engineer will provide and maintain changeable message boards.

When conditions warrant, minor or emergency changes to the traffic control plan may be made at the direction of the Engineer. Provide for additional signs and/or barricades as deemed necessary by the Engineer. Provide, install, move, replace, maintain, clean and remove these additional signs and/or barricades as directed by the Engineer.

Interruption of through traffic by construction operations will not be permitted unless specifically authorized by the Engineer.

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Use "LOOSE GRAVEL" (CW8-7) signs as directed by the Engineer. These signs will be supplemented with "NEXT XX MILES" (CW7-a) signs as directed by the Engineer.

Use "NO CENTER STRIPE" (CW8-12) signs as directed by the Engineer.

Use "UNEVEN LANES" (CW8-11) signs as directed by the Engineer.

Provide plastic drums as channelization devices for uneven lanes greater than 2".

Shadow vehicles shown in the plans are required.

High level warning flags will be used on advance warning signs during daytime operations.

Operations such as planing and placement of surface treatment or hot mix asphaltic concrete will proceed in the direction of traffic unless otherwise directed by the Engineer.

Place one Type III barricade in advance of stockpiles located in the right of way.

Maintain the traffic control as shown on the plans or as directed by the Engineer. Engineer will hold monthly estimate payments should discrepancies not be addressed in a timely manner. The estimate payment that was retained will not be paid until the following month.

Item 504, "Facilities for Field Office and Laboratory"

Furnish the following types and numbers of structures:

- 1 Type C structure, field office and laboratory
- 1 Type D structure, asphalt mix control laboratory

Provide the following items in the Type C structure (all items are subject to approval by the Engineer):

- 2 Desks
- 6 Desk chairs
- 2 Drafting tables
- 2 Drafting chairs
- 1 Two-drawer filing cabinet
- 1 Telephone with live jack

Provide the following items in the Type D structure (all items are subject to approval by the Engineer):

- 1 Desk
- 3 Desk Chairs

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1 Two-drawer filing cabinet

1 Telephone with live jack

The field office should include at least one operational toilet, urinal and lavatory privately enclosed with capability of securing door when used and labeled for use by both sexes.

The Engineer will approve in writing the location of the Type C structure.

Parking areas will be of adequate material, shape and size to accommodate 6 (six) vehicles per structure. The field office and the parking area will be enclosed with a fence as described under Item 504.

Clean the structures as needed, but not less than weekly. This work will include at a minimum: sweeping and mopping floors, cleaning the toilet and lavatory, and emptying wastebaskets.

The Type D structure will have a minimum ceiling height of 7.5 feet and will provide either a minimum of 400 square feet of gross floor area for permanent asphalt plants or 200 square feet for temporary plants serving one project. The floor area will be partitioned into a minimum of two interconnected rooms. Each room will be furnished with an exterior door and a minimum of two windows. The floor will have sufficient strength to support the testing equipment and will have an impervious covering.

For electrical work on field offices and laboratories which also includes electrical service to said buildings, electrical license requirements will be as outlined by Item 7.15.

The Type C structure will include one built-in equipment cabinet or closet for the storage of nuclear testing equipment. The cabinet will be a minimum of three feet wide by two feet deep by three feet high and will have provisions for locking securely.

The Type C structure will be provided with a 240-volt electrical entrance service utilizing a minimum of three number four wires. The service will consist of a minimum of four 120-volt circuits with 20 amp breakers and no more than two grounded convenience outlets per circuit and provisions for a minimum of two 220 volt ovens with vents to the outside. The structure will have a minimum of two convenience outlets per wall. Full time electrical service will be required.

Space heaters for heating the field office or laboratory are unacceptable.

Portable structures will be support blocked for stability and will be leveled and tied down.

The Type D structure room to contain the ignition oven will be adequately power-ventilated and will include a NEMA 6-50R (208/240 volt, 50 amps) outlet within 2.5 feet of the ignition oven location and an independent exhaust outlet to the outside no further than seven feet from the oven. The surface for the ignition oven location will be level, sturdy, and fireproof with at least six inches of clearance between the furnace and other vertical surfaces.

The Type C structure will be located within the project limits. Bulletin board will be accessible to the traveling public.

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The Type D structure will be adequately air conditioned and have two grounded convenience outlets per circuit and provisions for a minimum of two 220 volt ovens with vents to the outside. The structure will have a minimum of 2 convenience outlets per wall, and a utility sink with an adequate clean potable water supply for testing. Space heaters for heating the structure are unacceptable. Portable structures will be support blocked for stability and will be tied down.

Provide mobile wireless broadband internet access with minimum speed of 512 kbs download if available, otherwise it shall be provided as soon as it becomes available. Provide wireless internet network at the field office with at least the minimum speed requirements as the mobile. Provide all hardware necessary to make connection to mobile and network wireless broadband internet access from a TXDOT-owned laptop computer.

Item 506, “Temporary Erosion, Sedimentation, and Environmental Controls”

The SWP3 for this project will consist of the following bid items applied as directed by the Engineer.

- Compost Manuf Topsoil (PB) (4”)
- Drill Seeding (Perm)(Rural)(Clay)
- Rock Filter Dams (Install) (Ty 2)
- Blading Work (Erosion & Sedm cont)
- Full Width Mowing
- Litter Removal

Designate, in writing, a competent person who will be responsible for and available to ensure compliance with this item and applicable regulations.

Correct SWP3 discrepancies within 48 hours of verbally being notified. Should discrepancies not be corrected within the 48 hours, then the Engineer will hold monthly estimate payment. The estimate payment that was retained will not be paid until the following month.

Rock filter dams will only be used after the topsoil and seeding operations have been completed.

Item 508, “Constructing Detours”

Application rates of asphalt and aggregate, as shown on the plans, are for estimating purposes and may be varied by the Engineer.

Remove temporary detours as indicated in the sequence of work and/or as directed by the Engineer. This work will not be paid for directly, but will be considered subsidiary to this item.

Item 540, “Metal Beam Guard Fence”

All guard fence posts shall be steel posts set in two sack cement per cubic yard cement stabilized mixture approved by the Engineer.

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The diameter of the hole for the metal beam guard post shall be 12" diameter round by 3'-8" in depth.

Class C (butterfly) reflectors shall be installed on 25 foot spacing. Guard fence shall require reflectors (white to right of traffic and yellow to left of traffic). These reflectors shall be considered as included in payment for this item.

Class C reflectors may be installed using construction adhesive or butyl rubber adhesive.

Class C reflectors shall conform to the color and reflectivity requirements of Specification D-9-8600.

Item 544, "Guardrail End Treatments"

Furnish and install object markers Type OB-3F on the front of the impact heads of single guardrail terminals as shown on Standard Sheet D&OM (VIA).

Item 585, "Ride Quality for Pavement Surfaces"

For this project, Surface Test Type A shall be used.

Item 610, "Roadway Illumination Assemblies"

Draw controlled 480-volt single-phase power for illumination from existing service poles. Wire roadway illumination assemblies in a 480-volt phase-to-phase configuration for type A and C electrical services.

Provide one empty raceway in the foundation of each terminal illumination assembly.

Fabricate steel roadway illumination poles in accordance with TxDOT standards RIP-07 (Roadway Illumination Poles -2007). Poles fabricated according to RIP-07 require no shop drawings. Alternate designs to RIP-07 or the use of aluminum to fabricate poles will require the submission of shop drawings electronically.

For instructions on submitting shop drawings electronically go to:

http://www.dot.state.tx.us/business/producer_list.htm

File is titled: Guide to Electronic Shop Drawing Submittal

Item 618, "Conduit"

Install a pull rope in conduit runs in excess of 60 feet.

A cleaner-primer will be used on all PVC joints before application of cement.

Seal the ends of all conduits. This will not be paid for separately, but will be considered as included in payment for this item.

Install a continuous bare or green insulated copper wire number 8 AWG or larger in every conduit throughout the electrical system in accordance with electrical detail sheets and the NEC.

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Do not use non-certified persons to perform electrical work. See Item 7.15 "Electrical requirements and special provision to Item 7" for additional details.

Item 628, "Electrical Services"

Primary line extensions, connection charges, meter charges, and other charges by the utility company to provide power to the location shown, when required, will be paid for under force account work. Gain approval of the costs associated with these charges before engaging the utility company to do the work.

Item 644, "Small Roadside Sign Supports and Assemblies"

All sign locations, heights and design details will be in conformance with the Department's Standard Sheets and "Sign Crew Field Book." Sign types and/or arrow details for which design details are not shown in the plans will conform to "Standard Highway Sign Designs for Texas."

Non-reinforced 12" drilled shafts and galvanized structural steel will be considered subsidiary to this item.

Stake all sign locations. These locations will be reviewed and approved by the Engineer.

Furnish and install 12" high by 12" wide fluorescent yellow reflective sheeting (Type C) with pressure sensitive backing on signposts except that the color of the stripe for the YIELD, DO NOT ENTER, and STOP signs will be red. These will be mounted on the side of signposts facing traffic, at a height of 4 feet above the edge of paved surface. Signs with I-Beams as posts will require four strips of 12" high by 2" wide per post. These will not be paid for directly but will be considered as included in payment for this item.

No existing sign will be removed if the new sign cannot be mounted the same day.

Where foundations for traffic signs protrude through riprap or other concrete areas, the foundation will be wrapped with a 0.25-inch thick asphalt-impregnated material approved by the Engineer prior to the placement or repair of the concrete area to prevent bonding of the concrete to the sign foundation and to provide for expansion. An asphalt-impregnated fiber tube, approved by the Engineer, may be used for forming the sign foundation in lieu of removable forms and will be left in place below the finished concrete or riprap surface. The asphalt-impregnated material or fiber tube extending above the riprap or concrete surface will be neatly trimmed flush with the finished surface after the concrete has properly cured. This work will be considered as included in payment for this item.

Drill and pour small roadside sign foundations on the same day.

Small roadside signs will have Texas Universal Triangular Slip Base mounts.

Signs indicated to be mounted on the back of another sign or on a traffic signal pole or mast arm may require punch spacing different from that shown on the Standard Sheets. Adjust punch spacing on affected signs.

Cover each unfinished sign base with a reflectorized traffic cone.

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The breakaway feature for sign supports will be positioned to function so that the sign is struck by traffic from the primary direction of traffic.

For this project, the casting and locking collar for the triangular slip base sign support will be replaced with a casting using a minimum of three set screws. This casting must be furnished from an approved manufacturer. The list of approved manufacturers may be obtained from the Traffic Operations Division.

Before removal from the project site, spray-paint (with an oil-based paint), an "X" across the face of non-salvageable signs as directed.

Sign assemblies determined salvageable shall remain property of the Department. Deliver to the nearest San Angelo District maintenance section.

Item 662, "Work Zone Pavement Markings"

Limits for work zone pavement markings are approximate and may be varied as field conditions demand.

Work zone pavement markings will be required on the seal coat prior to opening the roadway to traffic at the end of each day. Care will be exercised in placing these markings to insure proper spacing and alignment. Markings that are improperly placed or damaged will be removed and replaced at no additional expense to the State.

Item 666, "Reflectorized Pavement Markings"

Apply glass traffic beads at a rate of 12 pounds per 100 square feet of Type I marking materials.

Apply glass traffic beads at a rate of 12 pounds per gallon of Type II marking materials. The striper speed shall not exceed 8 MPH during application to prevent beads from "rolling" in the paint film. Convert to gravity-flow beaders (if not in use) to obtain optimum bead application, when directed.

Clean striper tanks before use if there is a build-up of dry paint, as directed. Flush lines and guns before use.

Record the beginning and ending stations of no-passing zones before commencing work that disturbs the markings.

Item 672, "Raised Pavement Markers"

Raised pavement markers will conform to Departmental Material Specification "DMS-4200, Pavement Markers (Reflectorized)."

Approved bituminous marker adhesive products are listed in the Department's Material Producer List, Section 7 "Prequalified Bituminous Marker Adhesive."

Do not place raised pavement markers on asphaltic concrete pavement surfaces until such surfaces have cured for a minimum of 14 calendar days, unless otherwise directed by the Engineer. When all other operations have been completed on the project, and the curing time

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period has not yet elapsed, the contract time will be suspended until the curing time period has elapsed. No additional payment for barricades will be allowed during this period.

Item 5010, “Transportable Cellular Telephones”

Provide the Engineer with two (2) handheld transportable cellular telephones (TCT) for the duration of the project. This service is for the business-related use of Department personnel only. The TCT will be a compact hand-held size, and will be furnished with operating manuals and all other necessary components including means for recharging the batteries. The TCT will properly function when used at any location within the project limits. Supply local service for the transportable cellular telephones provided for this project and submit on a monthly basis detailed invoices for the service of these cellular telephones.

This item will not be paid for directly, but will be subsidiary to the various bid items.