NOTIFICATION OF ADDENDUM

ADDENDUM NO. 1

DATED 8/31/2016

Control	**0384-01-021, ETC.**
Project	**STP 2017(021), ETC.**
Highway	**SH 142**
County	**CALDWELL**

Ladies/Gentlemen:

Attached please find an addendum on the above captioned project. Included in the attachment is an adendum 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.

04/99

SUBJECT: PLANS AND PROPOSAL ADDENDUMS
PROJECT: STP 2017(021) CONTROL: 0384-01-021
COUNTY: CALDWELL
LETTING: 09/09/2016
REFERENCE NO: 0829

PROPOSAL ADDENDUMS

_ PROPOSAL COVER
X BID INSERTS (SH. NO.: 1-4)
X GENERAL NOTES (SH. NO.: C THRU H)
X SPEC LIST (SH. NO.: 1 AND 2)
X SPECIAL PROVISIONS:
ADDED: 300---006

DELETED:

X SPECIAL SPECIFICATIONS:
ADDED: 3002

DELETED:

X OTHER: SEE CHANGES BELOW

DESCRIPTION OF ABOVE CHANGES
(INCLUDING PLANS SHEET CHANGES)

BID INSERT - DELETE ITEM 316.6465 AND ADD ITEM 316.6001

SPEC LIST - ADDED ITEM 3002 AS A REFERENCE TO ITEM 316
- ADDED SPECIAL PROVISION (300---006)
- ADDED SPECIAL SPECIFICATION 3002

GENERAL NOTES - SEE CHANGES BELOW

PLANS -

PLAN SHEET 3 - DELETED ALL REFERENCES TO (TFT-H) ON THE ASPHALT UNDERSEAL

PLAN SHEET 4 - DELETED ALL REFERENCES TO (TFT-H) ON THE ASPHALT UNDERSEAL

PLAN SHEET 5A (SPEC DATA C) - DELETED NOTE AND ADDED ALL NEW NOTES TO ITEM 316.

PLAN SHEET 5A - 5C (SPEC DATA C THRU H) - NOTES SHIFTED FROM PAGE TO PAGE

PLAN SHEET 5C (SPEC DATA G) - DELETED FIRST NOTE TO ITEM 752

DESCRIPTION OF ABOVE CHANGES (CONTINUED)
(INCLUDING PLANS SHEET CHANGES)

PLAN SHEETS 6 AND 7 - DELETED ITEM 316.6465 AND ADDED ITEM 316.6001

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	100	6002		PREPARING ROW DOLLARS and CENTS	STA	487.700	1
	104	6009		REMOVING CONC (RIPRAP) DOLLARS and CENTS	SY	943.000	2
	134	6001		BACKFILL (TY A) DOLLARS and CENTS	STA	463.000	3
	316	6001		ASPH (MULTI OPTION) DOLLARS and CENTS	GAL	44,466.000	4
	340	6246		D-GR HMA (SQ) TY-D PG64_22(LEVEL-UP) DOLLARS and CENTS	TON	4,076.000	5
	347	6003		TOM (ASPHALT) PG 70-22 DOLLARS and CENTS	TON	12,611.000	6
	347	6006		TOM - C (AGGREGATE) SAC - B DOLLARS and CENTS	TON	976.000	7
	351	6002		FLEXIBLE PAVEMENT STRUCTURE REPAIR(6") DOLLARS and CENTS	SY	17,084.000	8
	354	6020		PLANE ASPH CONC PAV(0" TO 1") DOLLARS and CENTS	SY	4,890.000	9
	432	6045		RIPRAP (MOW STRIP)(4 IN) DOLLARS and CENTS	CY	140.000	10
	500	6001		MOBILIZATION DOLLARS and CENTS	LS	1.000	11

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	502	6001		BARRICADES, SIGNS AND TRAFFIC HANDLING DOLLARS and CENTS	MO	3.000	12
	506	6038	002	TEMP SEDMT CONT FENCE (INSTALL) DOLLARS and CENTS	LF	10.000	13
	506	6039	002	TEMP SEDMT CONT FENCE (REMOVE) DOLLARS and CENTS	LF	10.000	14
	540	6001		MTL W-BEAM GD FEN (TIM POST) DOLLARS and CENTS	LF	1,512.500	15
	540	6006		MTL BEAM GD FEN TRANS (THRIE-BEAM) DOLLARS and CENTS	EA	20.000	16
	540	6010		MTL W-BEAM GD FEN ADJUSTMENT DOLLARS and CENTS	LF	150.000	17
	542	6001		REMOVE METAL BEAM GUARD FENCE DOLLARS and CENTS	LF	1,850.000	18
	542	6002		REMOVE TERMINAL ANCHOR SECTION DOLLARS and CENTS	EA	7.000	19
	544	6001		GUARDRAIL END TREATMENT (INSTALL) DOLLARS and CENTS	EA	21.000	20
	544	6003		GUARDRAIL END TREATMENT (REMOVE) DOLLARS and CENTS	EA	14.000	21
	644	6060		IN SM RD SN SUP&AM TYTWT(1)WS(P) DOLLARS and CENTS	EA	5.000	22
	658	6014		INSTL DEL ASSM (D-SW)SZ (BRF)CTB (BI) DOLLARS and CENTS	EA	16.000	23

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	658	6016		INSTL DEL ASSM (D-SW)SZ (BRF)GF1 (BI) DOLLARS and CENTS	EA	44.000	24
	662	6109		WK ZN PAV MRK SHT TERM (TAB)TY W DOLLARS and CENTS	EA	136.000	25
	662	6111		WK ZN PAV MRK SHT TERM (TAB)TY Y-2 DOLLARS and CENTS	EA	8,226.000	26
	666	6036		REFL PAV MRK TY I (W)8"(SLD)(100MIL) DOLLARS and CENTS	LF	683.000	27
	666	6042		REFL PAV MRK TY I (W)12"(SLD)(100MIL) DOLLARS and CENTS	LF	300.000	28
	666	6048		REFL PAV MRK TY I (W)24"(SLD)(100MIL) DOLLARS and CENTS	LF	83.000	29
	666	6054		REFL PAV MRK TY I (W)(ARROW)(100MIL) DOLLARS and CENTS	EA	2.000	30
	666	6057		REFL PAV MRK TY I(W)(DBL ARROW)(100MIL) DOLLARS and CENTS	EA	3.000	31
	666	6078		REFL PAV MRK TY I (W)(WORD)(100MIL) DOLLARS and CENTS	EA	2.000	32
	666	6102		REF PAV MRK TY I(W)36"(YLD TRI)(100MIL) DOLLARS and CENTS	EA	10.000	33
	666	6156		REFL PAV MRK TY I(Y)(MED NOSE)(100MIL) DOLLARS and CENTS	EA	8.000	34
	666	6170		REFL PAV MRK TY II (W) 4" (SLD) DOLLARS and CENTS	LF	97,028.000	35

ALT	ITEM-CODE			UNIT BID PRICE ONLY. WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC CODE	S.P. NO.				
	666	6178		REFL PAV MRK TY II (W) 8" (SLD) DOLLARS and CENTS	LF	683.000	36
	666	6205		REFL PAV MRK TY II (Y) 4" (BRK) DOLLARS and CENTS	LF	8,860.000	37
	666	6207		REFL PAV MRK TY II (Y) 4" (SLD) DOLLARS and CENTS	LF	54,204.000	38
	666	6312		RE PM W/RET REQ TY I (Y)4"(BRK)(100MIL) DOLLARS and CENTS	LF	1,312.000	39
	666	6315		RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL) DOLLARS and CENTS	LF	6,602.000	40
	666	6342		REF PROF PAV MRK TY I(W)4"(SLD)(100MIL) DOLLARS and CENTS	LF	97,574.000	41
	666	6344		REF PROF PAV MRK TY I(Y)4"(BRK)(100MIL) DOLLARS and CENTS	LF	7,548.000	42
	666	6345		REF PROF PAV MRK TY I(Y)4"(SLD)(100MIL) DOLLARS and CENTS	LF	47,602.000	43
	672	6007		REFL PAV MRKR TY I-C DOLLARS and CENTS	EA	51.000	44
	672	6009		REFL PAV MRKR TY II-A-A DOLLARS and CENTS	EA	1,526.000	45

The following standard detail sheet has been modified:

T202TR(MOD)

GENERAL NOTES: Version June 7, 2016
Perform work during good weather. If work is damaged by a weather event, the Contractor is responsible for all costs associated with replacing damaged work.

References to manufacturer's trade name or catalog numbers are for the purpose of identification only. Similar materials from other manufacturers are permitted if they are of equal quality, comply with the specifications for this project, and are approved.

If work is performed at Contractor's option, when inclement weather is impending, and the work is damaged by subsequent precipitation, the Contractor is responsible for all costs associated with replacing the work, if required.

Blade the side slopes to remove all grass from the area of construction before placing seal coat.

The roadbed shall be free of organic material prior to placing any section of the pavement structure.

Equip all construction equipment used in roadway work with highly visible omnidirectional flashing warning lights.

Provide a smooth, clean sawcut along the existing asphalt pavement structure, as directed. Consider subsidiary to the pertinent Items.

Match existing cross slopes, as directed. Consider subsidiary to the pertinent Items.

Superelevate all curves to conform to the slope(s) of the existing curves, as directed. Consider subsidiary to the pertinent Items.

Protect all areas of the right of way, which are not included in the actual limits of the proposed construction areas, from disturbance. Restore any area disturbed because of the Contractor's operations to a condition as good as, or better than, before the beginning of work at no cost to the state.

All locations used for storing construction equipment, materials, and stockpiles of any type, within the right of way, will be as directed. Use of right of way for these purposes will be restricted to those locations where driver sight distance to businesses and side street intersections is not obstructed and at other locations where an unsightly appearance will not exist. The Contractor will not have exclusive use of right of way but will cooperate in the use of the right of way with the city/county and various public utility companies as required.

When directed, designate an official backer/spotter or "dump-man" who shall wear specially marked clothing and a specially marked hard hat which specifically identifies them as the backer/spotter and identifies that they are the person who is directing the backing operations.

They shall be identified to all project personnel, Contractor and TxDOT, when dumping the various project materials, throughout the course of the project.

ITEM 6 - CONTROL OF MATERIALS
Give a minimum of 1 business day notice for materials, which require Inspection at the Plant.

ITEM 100 - PREPARING RIGHT OF WAY
Prep ROW must not begin until trees designated for preservation have been protected, items listed in the EPIC have been addressed, and SW3P controls installed. Burning brush is not allowed.

Follow requirements of Item 752 and corresponding general notes when working on or within the drip line of a tree when the diameter 4.5 ft. above the ground is 12 in. or greater.

Unless shown otherwise in the plans, perform pruning or removal for areas within 30' of edge of pavement under construction. Trim or remove vegetation along sidewalks, along paths, along guard fence, along rails, around signs, markers, and structures to provide visibility to traveling public, line of sight for travelers, and 5' of clearance. Trim to provide a minimum of 14' vertical clearance under all trees. Use work methods described in Item 752. Flailing equipment is not allowed on oak trees or in urban areas. This work is subsidiary.

Use hand methods or other means of removal if doing work by mechanical methods is impractical. This work is subsidiary.

Backfill material will be Type B Embankment using ordinary compaction.

ITEM 134 - BACKFILLING PAVEMENT EDGES
For TY A backfill, furnish flexible base meeting the requirement for any type or grade, except for Grade 4, in accordance to Item 247. Compressive strengths for Item 247 flexible base are waived when supplied for this item. In lieu of flexible base, RAP may be supplied for TY A backfill. RAP must be 100% passing a 2 ½" sieve in accordance to Tex-110-E. Compact using a light pneumatic roller. Install at 3:1 slope and tie into existing terrain. Apply SS-1 to front slope at a rate of 0.12 GAL/SY, after compaction is complete.

ITEM 300 – ASPHALTS, OILS, AND EMULSIONS
Asphalt season is May 1 thru September 15.

Apply tack coat at 0.06 GAL/SY (residual). Apply non-tracking tack coat using manufacturer recommend rates. In addition to tack allowed per the specification, an approved list of tack coats is maintained by the District Lab.

Application rates may be adjusted to meet field conditions. This shall be subsidiary to Item 340 and Item 347.

ITEM 316 – SEAL COAT

Aggregates (Multi Option) for seal coats not exposed to traffic and underseals shall be Type E, PA, PB, A or B. The Grade shall range between 4 and 5.

Use ionic compatible asphalt and pre-coat aggregate.

Use paper or other approved material at the beginning and end of each shot so that the transverse joint is straight and prevents overlap of asphalt shots.

Use a medium pneumatic roller in accordance with Item 210. Roll before opening to traffic.

Surface all transitions, tapers, climbing lanes and intersections to the limits as directed.

Remove and dispose off the ROW the audible/profile markings, reflectorized markings, and raised markers. Blade pavement edges to remove vegetation. Any areas with excessive asphalt or aggregate will be removed. Continue sweeping excess aggregate off the roadway, riprap, and shoulder up to two weeks after completing the work. This work is subsidiary.

Use Seal Coat or Polymer-Modified Asphalt Cement Non-Tracking Tack Coat – Hot Applied. Apply at a minimum residual rate of 0.20 GAL/SY for milled surfaces and 0.18 GAL/SY for non-milled surfaces. Apply Aggregates (Multi Option) at a Contractor selected rate to avoid "pickup" of the asphalt. Asphalts (Multi Option) shall be per Tier II of the Seal Coat Material Selection Table or requirements for Polymer-Modified Asphalt Cement Non-Tracking Tack Coat – Hot Applied. Aggregate, asphalts, and application shall be in accordance with the general notes and latest specification or provision for the method chosen by the Contractor. Payment will be made using Item 316 Asphalt (Multi Option). Aggregate will be subsidiary.

ITEM 340 THRU 348 - HOT-MIX ASPHALT PAVEMENT

The Contractor must sample asphalt binder, in accordance to the applicable item. Label the sample can with the corresponding CSJ, lot, and sublot numbers. Samples must be stored in a common area where they are readily available to the TxDOT representative at the plant. The Contractor will be responsible for supplying storage for all samples. Retain all asphalt samples until hot mix production is complete or directed otherwise. Contractor is responsible for disposal of all asphalt binder samples, in accordance to Local, State, and Federal regulations.

Core holes may be filled with a Asphaltic patching material meeting the requirements of DMS-9203 or with SCM meeting requirements of DMS-9202.

Mill a transverse butt joint to transition from the new ACP to the existing surface. Make the transition a minimum of 100' H: 1" V. Saw cut the existing pavement at the transverse butt joint. Use a device to create a maximum 3H: 1V notched wedge joint on all longitudinal joints of 2" or greater. This work is subsidiary.

Prior to milling, core the existing pavement to verify thickness. This work is subsidiary.

Ensure placement sequence to avoid excess distance of longitudinal joint lap back not to exceed one day's production rates.

Submit any proposed adjustments or changes to a JMF before production of the new JMF.

Tack every layer. Do not dilute tack coat. Apply it evenly through a distributor spray bar.

Provide a minimum transition of 10' for intersections, 10' for commercial driveways, and 6' for residential driveways unless otherwise shown on the plans.

Irregularities will require the replacement of a full lane width using an asphalt paver. Replace the entire sublot if the irregularities are greater than 40% of the sublot area.

When using RAP or RAS, include the management methods of processing, stockpiling, and testing the material in the QCP submitted for the project. If RAP and RAS are used in the same mix, the QCP must document that both of these materials have dedicated feeder bins for each recycled material. Blending of RAP and RAS in one feeder bin or in a stockpile is not permitted.

Asphalt content and binder properties of RAP and RAS stockpiles must be documented when recycled asphalt content greater than 20% is utilized.

No RAS is allowed in surface courses.

Department approved warm-mix additives is required for all surface mix application when RAP is used. Dosage rates will be approved during JMF approval.

The Hamburg Wheel Test shall have a minimum rut depth of 3mm.

ITEM 340 - DENSE-GRADED HOT-MIX ASPHALT
ACP level-up will be required once the contract is executed.

Target laboratory molded density is 97% for all mixtures for TGC mixture designs.

When using substitute binders, mold specimens for mix design and production at the temperature required for the substitute binder used to produce the HMA.

The Hamburg minimum # of passes for PG 64 or lower is reduced to 7,000.

The Engineer may accept Hamburg Wheel test results for production and placement if no more than 1of the 5 most recent tests is below the specified number of passes and the failing test is no more than 2,000 passes below the specified number of passes.

ITEMS 347 - THIN OVERLAY MIXTURES (TOM)
For SAC A, blending SAC B aggregate with an RSSM greater than the SAC A rating or 10, whichever is greater, is prohibited.

Furnish non-tracking tack coat.

A Warm Mix Asphalt additive is required with a discharge temperature greater than 300° F when the haul distance from the plant to the project is greater than 40 miles or the ambient temperature is between 60-70° F. WMA processes, such as water or foaming processes, are not allowed under these circumstances.

Water flow rate shall exceed 120 seconds when tested using Tex-246-F. Perform water flow rate testing once per lot.

Sawcut existing pavement as directed. Prior to milling, core the existing pavement to determine its thickness. Do not proceed with milling until directed. Consider this work subsidiary to the pertinent Items.

ITEM 351 – FLEXIBLE PAVEMENT STRUCTURE REPAIR
Flexible pavement structure repair will be required once the contract is executed.

Stockpile salvaged materials at 6655 Sea Willow Road, Lockhart, TX 78644. Contact the Unit Road Administrator, Dwight Jeffrey, at 512-398-7269 prior to stockpiling salvaged materials.

All repairs shall be made using HMA Type B PG64-22 unless specified in the plans.

ITEM 354 – PLANING AND TEXTURING PAVEMENT
Stockpile salvaged materials at 6655 Sea Willow Road, Lockhart, TX 78644. Contact the Unit Road Administrator, Dwight Jeffrey, at 512-398-7269 prior to stockpiling salvaged materials.

Keep separate stockpiles from the material for pavement structure repair.

Taper permanent traverse faces 100 ft. per 1 in. Taper permanent longitudinal faces 6 ft. per 1 in. Taper temporary traverse faces 25 ft. per 1 in. HMA may be used as temporary tapers. Provide minimum 1 in. butt joints at bridge ends and paving ends. This work is subsidiary.

Remove the loose material before opening to traffic.

Micromilling
In addition to standard planing machine requirements, use planing machines that are:

- designed for micromilling bituminous pavement full lane width;
- capable of removing pavement to an accuracy of 1/16 in. with a maximum tool spacing of 5/8 in.

Prior to commencement of the work, construct a test section that is 1000 ft. in length.
Maintain a constant cross slope between pavement edges in each lane. Provide positive drainage to prevent water accumulation on the micromilled pavement.

ITEM 502 - BARRICADES, SIGNS, AND TRAFFIC HANDLING
Cover, relocate or remove existing signs that conflict with traffic control. Install all permanent signs, delineation, and object markers required for the operation of the roadway before opening

to traffic. Use of temporary mounts is allowed or may be required until the permanent mounts are installed or not impacted by construction. Maintain the temporary mounts. This work is subsidiary.

Shadow Vehicle with TMA is required as shown in the TCP sheets and for setup/removal of traffic control devices.

Take immediate action to modify closures / traffic control, if at any time backup (roadway queuing) becomes unreasonable (greater than 20 minutes). Have in place, a contingency plan of how this will occur.

Submit an emailed request for a lane closure (LCN) to the TxDOT representative. The email will be submitted in the format provided. Receive concurrence prior to implementation. Submit a cancellation of lane closures a minimum of 18 hours prior to implementation. Blanket requests for extended periods are not allowed. Max duration of a request is 2 weeks prior to requiring resubmittal. Provide 2 hour notice prior to implementation and immediately upon removal of the closure.

Submit the request a minimum of 48 hours prior to the closure and by the following deadline immediately prior to the closure: 11A on Tuesday or 11A on Friday.

Meet with the Engineer prior to lane closures to ensure that sufficient equipment, materials, devices, and workers will be used. Take immediate action to modify traffic control, if at any time backup (queuing) becomes greater than 20 minutes. Have a contingency plan of how modification will occur. Consider inclement weather prior to implementing the lane closures. Do not set up traffic control when the pavement is wet.

Maintain access to all streets and driveways at all times, unless otherwise approved. Consider subsidiary to the pertinent Items

Use advance warning flashing arrow panels for the closing of traffic lanes. Furnish one stand-by unit, in good working condition at the jobsite, ready for immediate use.

ITEM 504 - FIELD OFFICE AND LABORATORY

All labs and offices will include cleaning at least once a week. The cleaning will include sweeping and mopping of floors, cleaning the toilet and lavatory, and emptying wastebaskets. Space heaters are not considered adequate heating.

Projects with HMAC, furnish a Type D structure for the Engineer's exclusive use. The structure will include high speed internet service with WIFI signal, one desk, two chairs, and one file cabinet. Provide a minimum of three 120-volt circuits with 20-amp breakers and at most two grounded convenience outlets per circuit.

ITEM 506- TEMPORARY EROSION, SEDIMENTATION, AND ENVIROMENTAL CONTROLS
Consider the SW3P for this project to consist of the following Item, as directed.

Temporary Sediment Control Fence

ITEM 540 - METAL BEAM GUARD FENCE
Adjust the limits of the Metal Beam Guard Fence (MBGF) to meet field conditions. Stake the locations for approval prior to installation. Install all permanent MBGF and delineators before opening the road to traffic.

Furnish round timber posts. Furnish steel posts at locations where the minimum embedment shown on the plans for wooden posts cannot be achieved. Field verify the steel post lengths before fabrication. Consider the steel posts subsidiary.

Adjust existing rail as per plans and in accordance with the latest TxDOT standard. Removal, replacement, or installation of mow strip block out material will be subsidiary. Constructing new or backfilling, using class B concrete, unused mow strip block outs will be subsidiary.

ITEM 542 – REMOVING METAL BEAM GUARD FENCE
Contractor retains all materials. Contractor may reuse steel posts, composite blocks, and metal beam rail elements that are undamaged, rust free, dent free, and in compliance with current standards. Drill or punch holes in existing MBGF as shown on GF(31)-14. Consider subsidiary to the pertinent Items. Structurally sound rust spots with the largest dimension of 4” may be cleaned and repaired in accordance with 540.3.5 Galvanizing Repair.

ITEM 585 - RIDE QUALITY FOR PAVEMENT SURFACES
Use Surface Test Type A for level-up operations and Surface Test Type B Pay Adjustment Schedule 3 for overlay operations to evaluate ride quality of travel lanes in accordance with Item 585, “Ride Quality for Pavement Surfaces.”

ITEM 662 - WORK ZONE PAVEMENT MARKINGS
Notify the Engineer at least 24 hours in advance of work for this item.

Maintain removable and short term markings daily. Remove within 48 hours after permanent striping has been completed.

Item 668 is not allowed for use as Item 662.

ITEM 666 - RETROREFLECTORIZED PAVEMENT MARKINGS
Notify the Engineer at least 24 hours in advance of work for this item.

When the raised portion of a profile marking is placed as a separate operation from the pavement marking, the raised portion must be placed first then covered with TY I.

Place longitudinal markings within 10 calendar days of placing surface for roadways with ADT greater than 5000. Except for IH 35, deadline may be extended to deadline per Item 662 if surface operations will complete within 7 calendar days.

Placement of markings using mobile operations will be limited to non-peak hours. Peak hours within Austin city limits are Monday thru Friday 6 AM to 10 AM and 2 PM to 7 PM. Peak hours outside Austin city limits are Monday thru Friday 6:30 AM to 9:30 AM and 3:00 PM to 6:30 PM. Peak hours for IH 35 are daily 5 AM to 9 PM.

TY II markings must cure 48 hr. prior to placing TY I markings.

Reference all existing stripes before commencing work. Obtain approval for placement of guide marks before installing permanent pavement markings. This work is subsidiary.

ITEM 672 - RAISED PAVEMENT MARKERS
Notify the Engineer at least 24 hours in advance of work for this item.

ITEM 752 – TREE AND BRUSH REMOVAL
Prior to begin tree trimming, provide on-the-job training for employees performing the trimming to demonstrate proper work methods. TxDOT shall observe the training. This work is subsidiary.

CONTROL : 0384-01-021, ETC
PROJECT : STP 2017(021), ETC
HIGHWAY : SH 142
COUNTY : CALDWELL

TEXAS DEPARTMENT OF TRANSPORTATION

GOVERNING SPECIFICATIONS AND SPECIAL PROVISIONS

ALL SPECIFICATIONS AND SPECIAL PROVISIONS APPLICABLE TO THIS PROJECT ARE IDENTIFIED AS FOLLOWS:

STANDARD SPECIFICATIONS: ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION NOVEMBER 1, 2014. STANDARD SPECIFICATIONS ARE INCORPORATED INTO THE CONTRACT BY REFERENCE.

ITEMS 1 TO 9 INCL., GENERAL REQUIREMENTS AND COVENANTS
ITEM 100 PREPARING RIGHT OF WAY
ITEM 104 REMOVING CONCRETE
ITEM 134 BACKFILLING PAVEMENT EDGES (162)(166)(168)(300)(314)
ITEM 316 SEAL COAT (210)(300)(302)(340)(520)(3002)
ITEM 340 DENSE-GRADED HOT-MIX ASPHALT (SMALL QUANTITY) (300)(301)(320)(520)(585)
ITEM 347 THIN OVERLAY MIXTURES (TOM) (300)(301)(320)(520)(585)
ITEM 351 FLEXIBLE PAVEMENT STRUCTURE REPAIR (132)(204)(247)(260)(263)(275)(276)(292)(310)(316)(330)(334)(340)
ITEM 354 PLANING AND TEXTURING PAVEMENT
ITEM 432 RIPRAP (247)(420)(421)(431)(440)
ITEM 500 MOBILIZATION
ITEM 502 BARRICADES, SIGNS, AND TRAFFIC HANDLING
ITEM 504 FIELD OFFICE AND LABORATORY
ITEM 506 TEMPORARY EROSION, SEDIMENTATION, AND ENVIRONMENTAL CONTROLS (161)(432)(556)
ITEM 540 METAL BEAM GUARD FENCE (421)(441)(445)(529)
ITEM 542 REMOVING METAL BEAM GUARD FENCE
ITEM 544 GUARDRAIL END TREATMENTS
ITEM 644 SMALL ROADSIDE SIGN ASSEMBLIES (421)(440)(441)(442)(445)(636)(643)(656)
ITEM 658 DELINEATOR AND OBJECT MARKER ASSEMBLIES (445)
ITEM 662 WORK ZONE PAVEMENT MARKINGS (666)(668)(672)(677)
ITEM 666 RETROREFLECTORIZED PAVEMENT MARKINGS (316)(502)(662)(677)(678)
ITEM 672 RAISED PAVEMENT MARKERS (677)(678)

SPECIAL PROVISIONS: SPECIAL PROVISIONS WILL GOVERN AND TAKE

---------- PRECEDENCE OVER THE SPECIFICATIONS ENUMERATED HEREON WHEREVER IN CONFLICT THEREWITH.

REQUIRED CONTRACT PROVISIONS, FEDERAL-AID CONSTRUCTION CONTRACTS
(FORM FHWA 1273, MAY, 2012)
WAGE RATES
SPECIAL PROVISION "SCHEDULE OF LIQUIDATED DAMAGES" (000---001)
SPECIAL PROVISION "NONDISCRIMINATION" (000---002)
SPECIAL PROVISION "CERTIFICATION OF NONDISCRIMINATION IN EMPLOYMENT" (000---003)
SPECIAL PROVISION "NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY" (000---004)
SPECIAL PROVISION "STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION CONTRACT SPECIFICATIONS" (000---005)
SPECIAL PROVISION "ON-THE-JOB TRAINING PROGRAM" (000---006)
SPECIAL PROVISION "DISADVANTAGED BUSINESS ENTERPRISE IN FEDERAL AID CONTRACTS" (000---007)
SPECIAL PROVISION "IMPORTANT NOTICE TO CONTRACTORS" (000---010)
SPECIAL PROVISION "CARGO PREFERENCE ACT REQUIREMENTS IN FEDERAL AID CONTRACTS" (000---241)
SPECIAL PROVISION "CERTIFICATE OF INTERESTED PARTIES (FORM 1295)" (000---249)
SPECIAL PROVISION TO ITEM 2 (002---004)
SPECIAL PROVISION TO ITEM 6 (006---001)
SPECIAL PROVISIONS TO ITEM 7 (007---001)(007---003)(007---004)
SPECIAL PROVISION TO ITEM 8 (008---003)
SPECIAL PROVISIONS TO ITEM 300 (300---006)(300---009)
SPECIAL PROVISION TO ITEM 421 (421---002)
SPECIAL PROVISION TO ITEM 506 (506---002)

SPECIAL SPECIFICATIONS:

ITEM 3002 SPRAY APPLIED UNDERSEAL MEMBRANE (320)

GENERAL: THE ABOVE-LISTED SPECIFICATION ITEMS ARE THOSE UNDER WHICH
--- PAYMENT IS TO BE MADE. THESE, TOGETHER WITH SUCH OTHER PERTINENT ITEMS, IF ANY, AS MAY BE REFERRED TO IN THE ABOVE-LISTED SPECIFICATION ITEMS, AND INCLUDING THE SPECIAL PROVISIONS LISTED ABOVE, CONSTITUTE THE COMPLETE SPECIFICATIONS FOR THIS PROJECT.

Special Provision to Item 300
Asphalts, Oils, and Emulsions

Item 300, "Asphalts, Oils, and Emulsions," of the Standard Specifications, is amended with respect to the clauses cited below. No other clauses or requirements of this Item are waived or changed.

Section 300.2.2., "Polymer-Modified Asphalt Cement," Table 3 is supplemented by the following:

Table 3
Polymer-Modified Asphalt Cement Non-Tracking Tack Coat – Hot Applied

Property	Test Procedure	Polymer-Modified Viscosity Grade	
		TFT-H	
		Min	Max
Viscosity, 275°F, cP	T 316	-	3000
Penetration, 77ºF, 100 g, 5 sec.	T 49	-	25
Softening Point, ºF	T 53	170	-
Dynamic shear, G*/sin δ, 82°C, 10 rad/s, kPa	T 315	1.0	-
Flash Point, C.O.C., ºF	T 48	425	-
Track Free Time[1], minutes	Test Strip	-	2

1. Spray a test strip of tack coat at a location on or near the project as directed. Allow the strip to cure for the maximum time specified. Drive over the test strip with equipment to simulate the effect of paving equipment. There should be no evidence tracking or picking up of the tack coat on the wheels of the equipment.

Special Specification 3002
Spray Applied Underseal Membrane

1. DESCRIPTION

Construct an underseal membrane composed of a warm spray-applied polymer-modified emulsion meeting the requirements of Table 1. The membrane is applied through a spray-paver and is covered immediately with a mixture of aggregate, asphalt binder, and additives mixed hot in a mixing plant.

Table 1
Polymer-Modified Emulsions Requirements

Test on Emulsion	Test Method	Min	Max
Viscosity @ 77°F, SSF	Tex-513-C	20	100
Storage Stability[1], %	Tex-521-C		1
Demulsibility[2] Anionic emulsions — 35 ml of 0.02 N CaCl2, % Cationic emulsions — 35 ml 0.8% sodium dioctyl sulfosuccinate, %	Tex-521-C	55	
Sieve Test[3], %	Tex-521-C		0.05
Distillation Test[4] Residue by distillation, % by wt. Oil portion of distillate, % by vol.	Tex-521-C	 63	 0.5
Test on Residue from Distillation	**Test Method**	**Min**	**Max**
Elastic Recovery @ 50°F, 50 mm/min., %	Tex-539-C	60	
Penetration @ 77°F, 100 g, 5 sec, 0.1 mm	Tex-502-C	100	150

1. After standing undisturbed for 24 hr., the surface must be smooth, must not exhibit a white or milky colored substance, and must be a homogeneous color throughout.
2. Material must meet demulsibility test for emulsions.
3. May be required by the Engineer only when the emulsion cannot be easily applied in the field.
4. The temperature on the lower thermometer should be brought slowly to 350°F ±10°F and maintained at this temperature for 20 min. The total distillation should be complete in 60 ±5 min. from the first application of heat.

2. EQUIPMENT

2.1. **Spray Paver.** In addition to the requirements of Item 320, "Equipment for Asphalt Concrete Pavement," furnish a spray paver that will spray the membrane and apply the type and grade of mix shown on the plans and level the surface of the pavement layer in a single pass. Configure the spray paver so that the mixture is placed no more than 5 sec. after the membrane is applied.

2.2. **Membrane Storage Tank and Distribution System**. Equip the spray paver with an insulated storage tank having a minimum capacity of 900 gal., unless otherwise approved. Provide a metered mechanical pressure sprayer on the spray paver to apply the membrane at the specified rate. Locate the spray bar on the spray paver so that the membrane is applied immediately in front of the screed unit. Provide a read out device on the spray paver to monitor the membrane application rate.

Unless otherwise directed, furnish a volumetric calibration and strap stick for the tank in accordance with Tex-922-K, Part I. Calibrate the tank within the previous 5 yr. of the date first used on the project. The Engineer may verify calibration accuracy in accordance with Tex-922-K, Part II.

3. CONSTRUCTION METHODS

3.1. **Surface Preparation.** Remove existing raised pavement markers. Repair any damage incurred by removal as directed. Remove dirt, dust, or other harmful material before sealing. When shown on the plans, remove vegetation and blade pavement edges.

3.2. **Membrane Placement.** Unless otherwise directed, uniformly apply the membrane at a rate between 0.15 and 0.25 gal. per square yard. The Engineer may adjust the application rate, taking into consideration the existing pavement surface conditions. Spray the membrane using a metered mechanical pressure spray bar at a temperature between 140°F to 180°F. Monitor the membrane application rate and adjust the rate when needed or when directed. If required, verify that the spray bar is capable of applying the membrane at a uniform rate across the entire paving width as directed. Do not let the wheels or other parts of the paving machine contact the freshly applied membrane. Apply a uniform membrane coat to all contact surfaces and all joints as shown on the plans. Prevent splattering of the membrane when placed adjacent to curb, gutter, and other structures.

3.3. **Quality Control.** Perform the quality control tests listed in Table 2. If operational tolerances in Table 2 are exceeded, adjust processes or cease production when directed. The Engineer may perform independent tests to confirm contractor compliance and may require testing differences or failing results to be resolved before resuming production.

3.4. **Membrane Sampling.** Obtain a 1-qt. sample of the polymer-modified emulsion for each lot of mixture produced. The Engineer will witness the sampling of polymer-modified emulsion. Take the sample from the emulsion tank located on the paving machine, but not from the emulsion spraybar. Obtain the sample at approximately the same time the mixture random sample is obtained. Take all samples in accordance with Tex-500-C, Part III. Label the can with the corresponding lot and sublot numbers, and immediately deliver the sample to the Engineer. The Engineer will randomly choose at least 1 sample per project and test it to verify compliance with Table 1.

Table 2
Operational Tolerance and Minimum Testing Frequency

Test Description	Test Method	Minimum Testing Frequency	Operational Tolerance
Membrane Application Rate	Tex-247-F	1 per day	±0.02
Emulsion Membrane Sampling[1]	Tex-500-C	1 per day (sample only)	Table 1

1. The Engineer may reduce or waive the sampling and testing requirements based on a satisfactory history.

4. MEASUREMENT

Unless otherwise noted on the plans, underseal membrane material will be measured by one of the following methods:

4.1. **Volume.** Underseal membrane material will be measured at the applied temperature by strapping the tank before and after road application and determining the net volume in gallons from the distributor's calibrated strap stick. The Engineer will witness all strapping operations for volume determination.

If the meter and readout device is accurate within 1.5% of the strapped asphalt volume, the Engineer may allow use of the meter and readout to determine asphalt volume used and application rate.

The Engineer may require redetermination of meter readout at any time and will require volume determinations by strapping if the meter is not accurate to within 1.5% of strapped volume.

4.2. **Weight**. Underseal membrane material will be measured in tons using certified scales meeting the requirements of Item 320, "Equipment for Asphalt Concrete Pavement," unless otherwise approved. The transporting truck must have a seal attached to the driving device and other openings. The Engineer may require random checking on public scales, at the Contractor's expense, to verify weight accuracy.

Upon completion or temporary suspension, any remaining membrane material will be weighed by a certified public weigher or measured by volume in a calibrated tank, and the quantity converted to tons at the measured temperature. The quantity to be measured will be the number of tons received, minus the number of tons remaining after all directed work is complete, and minus the amount used for other Items.

5. PAYMENT

The work performed and materials furnished in accordance with this Item and measured as provided above will be paid for at the unit bid price for "Membrane Underseal." These prices are full compensation for all materials, equipment, labor, tools, and incidentals necessary to complete the work.

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