***IF YOU ARE GOING TO USE THIS DOCUMENT FOR YOUR PARTICULAR PROJECT….PLEASE Open as “*Read Only*.”***

***“*Save As*” TO YOUR PROJECT FILES AND THEN* Modify *AS YOU NEED TO DO SO FOR YOUR PARTICULAR PROJECT~!!***

***THANKS…………………Kevin***

***Notes/Explanations to the Designers***

**There are several notes throughout the set of Master File General Notes that are in *Blue, Bold, or Italic.* Generally, these notes are written for the Designers’ use, to understand if that particular note is needed or wanted for the particular project that is being designed or it is explaining why a note may want to be used. Most often, they are found inside *(parentheses)* or they are found inside *[brackets].***

**To eliminate the “Austin Master File General Notes” Watermark click theDesign tab and then click on Watermark and then click Remove Watermark and it should be removed.**

# GENERAL NOTES: Version: March 20, 2024

| Item | Description | \*\*Rate |
| --- | --- | --- |
| \*\*204 | **Sprinkling**(Dust) (Item 132)(Item 247) | 30 GAL/CY30 GAL/CY30 GAL/CY |
| \*\*210 | **Rolling (Flat Wheel)**(Item 247)(Item 316) | 1 HR/200 TON1 HR/6000 SY |
| \*\*210 | **Rolling (Tamping and Heavy Tamping)** | 1 HR/200 CY |
| \*\*210 | **Rolling (Lt Pneumatic Tire)**(Item 132)(Item 247)(Item 316 - Seal Coat)(Item 316 - Two Course) | 1 HR/500 CY1 HR/200 TON1 HR/6000 SY1 HR/3000 SY |
| 247 | **Flexible Base (CMP IN PLC)** | 132 LB/CF |
| 310 | **Prime Coat**  | 0.20 GAL/SY |
| 314 | **Emulsified Asphalt Treatment (SS-1 or MS-2)**  | 0.30 GAL/SY |
| 316 | **Underseals Asphalts (Multi Option)** | 0.20 GAL/SY |
| **Surface Treatments** |  |
| **Seal Coat** |  |
| **Grade 4** |  |
| Asphalt  | 0.38 GAL/SY |
| Aggregate | 1 CY/120 SY |
| **Grade 5**  |  |
| Asphalt | 0.32 GAL/SY |
| Aggregate  | 1 CY/150 SY |
| **Two Course Surface Treatment** |  |
| Asphalt 1st Application | 0.28 GAL/SY |
| Asphalt 2nd Application | 0.24 GAL/SY |
| Aggregate 1st Application Grade 4 | 1 CY/110 SY |
| Aggregate 2nd Application Grade 4 | 1 CY/130 SY |
|  341/3076, 344/3077 | **Dense-Graded Hot-Mix Asphalt and Superpave**  | 110 LB/SY/IN |
| 342/3079 | **Permeable Friction Course (PFC)** | 90.0 LB/SY/IN |
| 346/3080 | **Stone-Matrix Asphalt** | 113 LB/SY/IN |
| 347/3081 | **Thin Overlay Mixtures (TOM)** SAC BSAC A | 113.0 LB/SY/IN116.0LB/SY/IN |
| 350 | **Microsurfacing** | 25 LB/SY |
| 3084 | **Bonding Course** | 0.09 GAL/SY |
| 3085 | **UnderSeal Course** | 0.20 GAL/SY |
|  | **Tack Coat** | 0.08 GAL/SY |

\*\* For Informational Purposes Only

**The following standard detail sheet or sheets have been modified:**

Modified Standards

|  |
| --- |
|  ***[Blind Note: List Standards here (To add Rows, “*Click a Row*” and then click the* Table *menu*, *and then click* Insert, *and then click either* Rows Above *or* Rows Below.*)]*** |
|  |
|  |

**GENERAL**

Contractor questions and requests for documents on this project are to be addressed to the following individual(s):

***(Blind Note: Delete the non-applicable area offices, these are default names and names may be replaced with project specific contact points.)***

Burnet Area        Joe.Muck@txdot.gov

Burnet Area Tyler.Brudnick@txdot.gov

Bastrop Area             [Diana.Schulze@txdot.gov](Diana.Schulze%40txdot.gov)

Bastrop Area Tanli.Sun@txdot.gov

Georgetown            Jason.Hudson@txdot.gov

Georgetown John.Peters@txdot.gov

North Austin           Matthew.Kelly@txdot.gov

North Austin           Kevin.Mackan@txdot.gov

South Austin            Mark.Baumann@txdot.gov

South Austin Shane.Swimm@txdot.gov

Traffic Mahendran.Thivakaran@txdot.gov

Traffic Cory.Jucius@txdot.gov

Questions and requests for documents will be accepted via the Letting Pre-Bid Q&A web page.  All questions and any corresponding responses that are generated will be posted through the same Letting Pre-Bid Q&A web page.  This webpage can be accessed from the Notice to Contractors dashboard located at the following Address:

<https://tableau.txdot.gov/views/ProjectInformationDashboard/NoticetoContractors>

The Letting Pre-Bid Q&A web page for each project can be accessed by using the dashboard to navigate to the project you are interested in by scrolling or filtering the dashboard using the controls on the left. Hover over the blue hyperlink for the project you want to view the Q&A for and click on the link in the window that pops up.

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.**

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

Contact the supervisor for the passenger facility at Capital Metro and request the relocation of Capital Metro signs. Contact the supervisor at (512) 385-0190.

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

Intelligent Transportation Systems (ITS) Infrastructure may exist within the limits of this project and that the system must remain operational throughout construction. The exact location of ITS Infrastructure is not known. Contact the TxDOT Area Engineer's or Inspection Team's Office for the location(s) at least 72 hours before commencing any work that might affect present ITS Infrastructure. In the event of system damage, notify TxDOT/CTECC at (512) 974-0883 within one hour of occurrence. Refer to Item 6000 for additional details.

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

Construct all manholes/valves to final pavement elevations prior to the placement of final surface.  If the manholes/valves are going to be exposed to traffic, place temporary asphalt around the manhole/valve to provide a 50:1 taper.  The asphalt taper is subsidiary to the ACP work.

Supply litter barrels in enough numbers at locations as directed to control litter within the project. Consider subsidiary to pertinent Items. ***(Blind Note: Only use for long duration contracts. A pay item maybe needed depending on contract. Federal funds cannot be used to pay for this item of work.)***

Keep the roadway free of debris and sediment caused by construction activities. Dispose of all material in accordance with federal, state, and local regulations. This work is subsidiary.

Damage to existing pipes and SET’s due to Contractor operations will be repaired at Contractor’s expense.

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.

Coordinate and obtain approval for all bridgework over existing roadways.

**Bridge Vertical Clearance and Traffic Handling.**

Notify TxDOT project staff and the local bridge engineer 10 business days prior to the following:  change in vertical clearance, placing beams/girders over traffic, opening or removing traffic from a bridge or portion of a bridge, and completion of bridge work.  This requirement includes bridge class culverts.  Provide vertical clearance for all structures (including signal mast arms, span wires, and overhead sign bridge structures) within the project limit.  Submit information and notices to local bridge engineer at AUS\_BRG\_Notify@txdot.gov.

**During evacuation periods for Hurricane events the Contractor will cooperate with Department for the restricting of Lane Closures and arranging for Traffic Control to facilitate Coastal Evacuation Efforts.**

**ITEM 2 – INSTRUCTIONS TO BIDDERS**

***(Blind Note: Include note for non-site specific contracts.)***

This Contract includes non-site specific work. Multiple work orders will be used to procure work of the type identified in the Contract at locations that have not yet been determined.

**ITEM 5 – CONTROL OF THE WORK**

Place construction or silt fence 2 ft. inside TxDOT ROW along the Railroad ROW. If work is to be performed inside the Railroad ROW, then the Contractor will coordinate with the Railroad for a Railroad Flagger. This work is subsidiary.

Obtain and maintain compliance with additional training requested by UPRR “Property Access Training”. ***(Blind Note: Include note for projects in coordination with UPRR).***

Place construction stakes at intervals of no more than 100 ft. This work is subsidiary.

Provide a 72 hour advance email notice to AUS\_Locate@TxDOT.gov to request illumination, traffic signal, ITS, or toll equipment utility locates. Provide AUS\_Locate@TxDOT.gov an electronic pdf of as-builts within 21 calendar days of illumination, traffic signal, ITS, or toll equipment being placed into operation.  As-built shall include GPS coordinates of manholes and junction boxes. Include final version of RFI’s and revised plan sheets.

**Precast Alternate Proposals.**

When a precast or cast-in-place concrete element is included in the plans, a precast concrete alternate may be submitted in accordance with “Standard Operating Procedure for Alternate Precast Proposal Submission” found online at [Alternate Precast Proposal Submission (txdot.gov)](https://ftp.txdot.gov/pub/txdot-info/brg/design/alternate-precast-proposal-submission.pdf). Acceptance or denial of an alternate is at the sole discretion of the Engineer.  Impacts to the project schedule and any additional costs resulting from the use of alternates are the sole responsibility of the Contractor.

**Thermoplastic Pipe Alternate Proposals**

When a reinforced concrete or corrugated metal pipe is included in the plans, a thermoplastic polypropylene pipe alternate may be submitted in a 2-phase process.  Acceptance or denial of an alternate is at the sole discretion of the Engineer.  Impacts to the project schedule and any additional costs resulting from the use of alternates are the sole responsibility of the Contractor.

Phase 1 submit an official request to TxDOT PM with a summary of proposed locations, max depth of placement for each location, cover depth, and pipe diameters. TxDOT goal is to review and respond within 10 days. Phase 1 approval does not guarantee Phase 2 approval.

Phase 2 submit the following documents with all documents signed and sealed by a licensed Engineer in the state of Texas.  1-Provide a redline or revised set of drainage plans reflecting the revised locations. 2-Provide certification that the use of the alternate pipe and proposed bedding are adequate for the proposed application, depth, etc.  3-Provide a completed thermoplastic pipe installation drawing using the following,

<https://ftp.txdot.gov/pub/txdot/brg/thermoplastic-pipe-installation-drawing.pdf>

<https://ftp.txdot.gov/pub/txdot/brg/thermoplastic-pipe-installation-drawing.dgn>

For all uses of thermoplastic pipe as an alternate, furnish, install, and inspect the thermoplastic pipe in accordance with SS4216 or latest thermoplastic pipe special specification at time of letting. Minimum values, such as cover depth, required by the specification, installation drawing, etc. will not be waived. Use granular backfill unless flowable fill or CSB is required by the alternate design. Backfill locations shown in the bid plans using flowable fill or CSB must use the backfill per the bid plans.

**Electronic Shop Drawing Submittals.**

Submit electronic shop drawing submittals according to the current Guide to Electronic Shop Drawing Submittal which can be found online at,

<https://www.txdot.gov/business/resources/highway/bridge/shop-drawing-submittal-cycle.html>.

Pre-approved producers can be found online at, <https://www.txdot.gov/business/resources/materials/material-producer-list.html>.

Use the following contact list for all submittals that are not required to be sent to Bridge Division and to copy the Engineer for all submittals to the Bridge Division.

Submittal Contact List

Burnet Area Joe.Muck@txdot.gov AUS\_BU-ShopReview@txdot.gov

Bastrop Area Diana.Schulze@txdot.gov AUS\_BA-ShopReview@txdot.gov

Georgetown Jason.Hudson@txdot.gov AUS\_GE-ShopReview@txdot.gov

North Austin Matthew.Kelly@txdot.gov AUS\_NA-ShopReview@txdot.gov

South Austin Mark.Baumann@txdot.gov AUS\_SA-ShopReview@txdot.gov

Traffic Operations Cory.Jucius@txdot.gov

Traffic Operations Dave.Henry@txdot.gov

Traffic Operations David.Goldstein@txdot.gov

***(Blind Note: Include the following when the project includes joint bid utilities.)***

**Cooperating with Joint Bid Utilities.**

The Engineer will designate a utility inspector at the pre-construction meeting.  Attend a utility preconstruction meeting with the utility owner.

The Engineer will designate a utility inspector at the pre-construction meeting.  Attend a utility preconstruction meeting with the utility owner. All designated safety points of contact, including traffic control, shall be present at the utility preconstruction meeting.

Utility contractors must provide, for information purposes only unless stated otherwise, the following information 60 calendar days prior to beginning utility work:

* If available, a copy of the contractor’s safety handbook.
* Designate a safety point of contact with OSHA 30-hour certification card.
* Designate and provide written summary of qualifications for an excavation safety point of contact meeting requirements for a trench and excavation competent person per OSHA [eTool : Construction - Trenching and Excavations - Competent Person | Occupational Safety and Health Administration (osha.gov)](https://www.osha.gov/etools/construction/trenching/competent-person)
* Temporary special shoring design in accordance with Item 403 for excavations 5ft. or greater in depth, including bore pits (Department reserves the right to reject designs).
* Trench excavation protection plans, bearing the seal of a licensed professional engineer, in accordance with Item 402.

All durations exclude utility owner holidays.

Provide a complete package of information for all resubmittals. Submit each item and individual components of that item under separate cover.

Prior to submitting a RFI, meet and discuss with TxDOT and the utility inspector. Include a proposed solution, existing and proposed line elevations, and redline of proposed changes with the RFI.  Make note of adjacent utilities in the RFI if it includes relocation of a line.  Submit RFIs via email to TxDOT and the utility inspector.

Complete pre-testing and have the utility inspector verify prior to formal testing and inspection.  Submit email to TxDOT and the utility inspector requesting a formal test and inspection 14 calendar days before the test date.  Pay retest fees directly to utility owner at current rates.

Submit an email to the utility inspector identifying the lines, valves, location, and date of shut offs or limited service 21 calendar days before for all lines and 60 calendar days before for water lines 24 in. or greater.  The utility owner will conduct a test shut off before actual shut off.  Do not shut off power or water lines 24 in. or greater between June 1st and August 31st.  Provide a verbal notification 7 calendar days and written notification 72 hours before impact to service to all customers.

Austin Energy (AE) work must be performed by a qualified electrical contractor using qualified material producer.  If the plans do not provide a list, the bidder must contact AE to obtain a list of qualified contractors and producers.  Contractor will execute an agreement directly with Austin Energy to work on their system. Bidder may request a draft copy of this agreement prior to bidding. Added cost for insurance related to this AE agreement will be reimbursed at invoice amount from carrier with only 1 percent markup.

Removal of trees and brush within 15 feet of proposed power lines is required and subsidiary.

AE Qualified Contractors and Producers: ***(Blind Note: Designer must coordinate with AE to provide list or internet link of qualified contractors and producers.)***

Notify the utility owner and TxDOT 60 calendar days prior to completion of electrical, communication or data infrastructure. Coordinate with the utility owner to schedule required utility owner work to complete their portion of utility installation. Allow 90 calendar day duration for the utility owner to complete their portion of the work. If the utility work requires multiple owners to adjust upon completion of the work, allow separate and sequential 90 calendars day duration for each utility owner.

Provide an electronic pdf of as-builts within 28 calendar days of a line becoming active.  Include GPS coordinates of items not installed per original plans including meters, manholes, valves, bends, and fire hydrant locations in the as-builts. Include limits of encasements such as steel and flowable fill.   Include final version of RFI’s and revised plan sheets.

**Alignment and Profile.**

Unless shown in the plans, profile and alignment data for roadways being overlaid or widened are for design verification only.  Provide survey and construct the roadway in accordance with the typical section.  Bid items and data may be provided to adjust cross slope and super elevations.

**ITEM 6 - CONTROL OF MATERIALS**

Give a minimum of 1 business day notice for materials, which require inspection at the Plant.

For structures with paint containing hazardous materials, provide locations of material removal 60 days prior to begin removal.  For metal elements to be removed, mechanical shear or unbolting for removal and disposal does not require paint abatement but requires 60-day advance notice.

The area designated as the potential habitat for the Houston Toad will not be allowed as a source for embankment unless approved by the Engineer. The general area is Bastrop County north of the Colorado River and east of SH 95 unless provided in the plans. ***(Blind Note: If project is in above area include the “Lost Pine Habitat Conservation Plan Area” map. Please call the Bastrop Area Office to obtain the latest copy of the map.)***

For removal, tie, or tap of asbestos concrete (AC) pipe, contact TxDOT and the local utility company 60 days prior to performing the work.  Expose the AC pipe to provide a minimum of 1 ft. of clearance around the top and sides.  A minimal amount of soil may remain around the AC pipe to avoid disturbance.  The local utility company will be responsible for the demo notice to DSHS and removal of the AC pipe.  Tie or tap into existing AC pipe may require removing an entire section of pipe from collar to collar and replacement of pipe with new pipe using existing bid items.

For Federally Funded Contracts, comply with the latest provisions of Build America, Buy America Act (BABA Act) of the Bipartisan Infrastructure Law, by submitting an original of the TxDOT Construction Material Buy America Certification Form for all items classified as construction materials. This form is not required for materials classified as a manufactured product. Refer to the Buy America Material Classification Sheet, located at the following link, for clarification on material categorization. [Buy America material classification sheet (txdot.gov)](https://www.txdot.gov/business/resources/materials/buy-america-material-classification-sheet.html)

**Storage of Material Near Structures**

Do not store equipment or flammable material within 100 ft. of bridges, culverts, or near their openings (portals). Flammable materials include all material that is not metal or aluminum.

**ITEM 7 – LEGAL RELATIONS AND RESPONSIBILITIES**

TxDOT will coordinate with TDLR regarding pedestrian elements and sidewalks. The contractor will procure and provide all permits, licenses, and inspections; pay all charges, fees, and taxes regarding TDLR rules governing industrialized housing and buildings.

***(Blind Note: Designers choose Note 1 for no*** ***significant traffic generator events identified***

***OR Note 2 for Roadway closures during key dates and/or special events are prohibited.  See notes for Item 502 for the key dates and/or special events.)***

***Note 1:***

No significant traffic generator events identified.

***Note 2:***

Roadway closures during key dates and/or special events are prohibited.  See notes for Item 502 for the key dates and/or special events.

Refer to the Environmental Permits, Issues and Commitments (EPIC) plan sheets for additional requirements and permits.

When any abandoned well is encountered, cease construction operations in this area and notify the Engineer who will coordinate the proper plugging procedures. A water well driller licensed in the State of Texas must be used to plug a well.

Perform maintenance of vehicles or equipment at designated maintenance sites. Keep a spill kit on-site during fueling and maintenance. This work is subsidiary.

Maintain positive drainage for permanent and temporary work for the duration of the project. Be responsible for any items associated with the temporary or interim drainage and all related maintenance. This work is subsidiary.

Suspend all activities near any significant recharge features, such as sinkholes, caves, or any other subterranean openings that are discovered during construction or core sampling. Do not proceed until the designated Geologist or TCEQ representative is present to evaluate and approve remedial action.

Locate aboveground storage tanks kept on-site for construction purposes in a contained area as to not allow any exposure to soils. The containment will be sized to capture 150% of the total capacity of the storage tanks.

**PSL in Edwards Aquifer Recharge and Contributing Zone.**

Obtain written approval from the Engineer for all on or off right of way PSLs not specifically addressed in the plans.  Provide a signed sketch of the location 30 business days prior to use of the PSL.  Include a list of materials, equipment and portable facilities that will be stored at the PSL. TxDOT will coordinate with the necessary agencies. Approval of the PSL is not guaranteed. Un approved PSL is not a compensable impact.

**Work within a USACE Jurisdictional Area.**

Do not initiate activities within a U.S. Army Corps of Engineers (USACE) jurisdictional area that have not been previously evaluated by the USACE as part of the permit review of this project. Such activities include, but are not limited to, haul roads, equipment staging areas, borrow and disposal sites. Obtain written approval from the Engineer for activities not specifically addressed in the plans. Provide a signed sketch and description of the location 60 business days prior to begin work at the location. Complete and return any forms provided by TxDOT. Approval of the work is not guaranteed. Un approved work is not a compensable impact.

***Blind Note: Below note required when work is within 100 ft. of a waterway. This includes dry/seasonal waterways.)***

**Work over or near Bodies of Water (lakes, rivers, ponds, creeks, dry waterways, etc.).**

Keep on site a universal spill kit adequate for the body of water and the work being performed.  Debris is not allowed to fall into the ordinary high-water level (OHWL). Debris that falls into the OHWL must be removed at the end of each work day.  Debris that falls into the floodway must be removed at the end of each work week or prior to a rain event.  When not in use and at the end of each work shift, all material and equipment must be stored more than 100 ft. away from the ordinary high water mark. This work is subsidiary.

Install and maintain traffic control devices to maintain a navigable corridor for water traffic.  Install devices to restrict water traffic during bridge demo and beam placement.  This work is subsidiary.

Prior to begin construction, install construction fence, silt fence, rock filter dam, or other temporary barrier from ROW to ROW at a distance 25 feet from the OHWL.  This barrier is used to deter construction equipment and personnel from accessing the waterway. Use items that exist in the plans to create the barrier. If items do not exist, payment will be paid using force account in accordance with Item 9.7, “Payment for Extra Work and Force Account Method.”  Sections of the barrier may be removed and replaced to access the work shown on the plans. Upon completion of the work located within the barrier, the barrier must be restored ROW to ROW and remain until the project is complete.

Equipment is / is not (select one, use “is not” as default unless “is” approved by Andy Blair) allowed to access the area below the OHWL.  If allowed to access the area below the OHWL, provide a 14 calendar day notice to the Engineer prior to accessing the water with equipment. Provide a sketch of the pad that will be placed in the water to support the equipment. The pad should be made of 3 in. x 5 in. rock or other material that can be removed when the work is complete. All pads thicker than 2 ft. shall be enclosed by portable concrete traffic barrier to help contain the material. This work is subsidiary.

Equipment is / is not (select one, use “is not” as default unless “is” approved by Andy Blair) allowed to cross the waterway from bank to bank. If allowed to cross the water, provide a 14 calendar day notice to the Engineer prior to installing a temporary crossing.  The crossing shall be constructed in accordance with the AUS district temporary stream crossing detail.  Temporary crossing may not remain in place longer than 12 months unless approved by the Engineer. All work that utilizes the temporary crossing must be completed within 12 months.  This work is subsidiary.

**DSHS Asbestos and Demolition Notification.**

Complete and provide the Texas Department of State Health Services (DSHS) notification form to the Engineer and email to AUS\_BRG\_Notify@txdot.gov at least 30 calendar days prior to bridge removal or renovation for each phase or step of work.  Notify the Engineer via email of any changes to the work start and end dates.

**Vehicle Idle Restrictions**

(Blind note: this is added based on TCEQ [Vehicle Idling Restrictions - Texas Commission on Environmental Quality - www.tceq.texas.gov](https://nam11.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.tceq.texas.gov%2Fairquality%2Fmobilesource%2Fvehicleidling.html&data=05%7C02%7CKevin.Kirchoff%40txdot.gov%7Cb72b173f23174726391108dc3e153e66%7C39dba4765c094c6391dace7a3ab5224d%7C0%7C0%7C638453508151913255%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C0%7C%7C%7C&sdata=ysK3IaEDcceopWRBXnpDQwFgIOPEB1bvM6VuwlhxPQk%3D&reserved=0))

With in the limits of City of Austin, Bastrop County, and Travis County, on road vehicles may not idle more than 5 minutes except for following exemptions: vehicle 14,000 pounds or less, vehicles over 14,000 pounds are certified clean ideal as defined by the EPA, or other exemptions as listed in TAC Title 30, Part 1, Chapter 114, Subchapter J, Division 2, 114.517.

**Migratory Birds and Bats.**

Migratory birds and bats may be nesting within the project limits and concentrated on roadway structures such as bridges and culverts. Remove all old and unoccupied migratory bird nests from any structures, trees, etc. between September 16 and February 28. Prevent migratory birds from re-nesting between March 1 and September 15.  Prevention shall include all areas within 25 ft. of proposed work.  All methods used for the removal of old nesting areas and the prevention of re-nesting must be submitted to TxDOT 30 business days prior to begin work.  This work is subsidiary.

If active nests are encountered on-site during construction, all construction activity within 25 ft. of the nest must stop. Contact the Engineer to determine how to proceed.

**Tree and Brush Trimming and Removal.**

Work will be conducted September 16 thru February 28. Work conducted outside this timeframe will require a bird survey.  Submit a survey request to TxDOT 30 business days prior to begin work.

If within the removal time period, removal work may be conducted during delayed start period using proper traffic control per TCP standards.

Upon begin removal operations, all removal work for the project must be completed within 21 calendar days.  Completion of removal includes removing from ROW or mulching of all debris.

No extension of time or compensation will be granted for a delay or suspension due to the above bird, bat, and tree/brush requirements.

**Law Enforcement Personnel.**

Submit charge summary and invoices using the Department forms.

Patrol vehicles must be clearly marked to correspond with the officer’s agency and equipped with appropriate lights to identify them as law enforcement. For patrol vehicles not owned by a law enforcement agency, markings will be retroreflective and legible from 100 ft. from both sides and the rear of the vehicle. Lights will be high intensity and visible from all angles.

No payment will be made for law enforcement personnel needed for moving equipment or payment for drive time to/from the event site. A minimum number of hours is not guaranteed. Payment is for work performed. If the Contractor has a field office, provide an office location for a supervisory officer when event requires a supervising officer. This work is subsidiary.

A maximum combined rate of $85 per hour for the law enforcement personnel and the patrol vehicle will be allowed. Any scheduling fee is subsidiary per Standard Specification 502.4.2.

Cancel law enforcement personnel when the event is canceled. Cancellation, minimums or “show up” fees will not be paid when cancellation is made 12 hours prior to beginning of the event. Failure to cancel within 12 hours will not be cause for payment for cancellation, minimums, or "show up" time. Payment of actual “show up” time to the event site due to cancellation will be on a case-by-case basis at a maximum of 2 hours per officer.

Alterations to the cancellation and maximum rate must be approved by the Engineer or pre-determined by official policy of the officer’s governing authority.

**Select Tree Preservation.**

***(Blind Note: Designer needs to review and provide direction in the plans for protecting the tree and roots for trees that meet the following:  diameter 4.5 ft. above the ground is 18 in. or greater and is one of the following species: Texas Ash, Bald Cypress, American Elm, Cedar Elm, Texas Madrone, Bigtooth Maple, All Oaks, Pecan, Arizona Walnut, and Eastern Black Walnut.  If unable to address prior to letting, include the following note for trees that meet the above requirements.)***

Provide a certified arborist to review the condition of the following trees: *(provide station, offset, and species)*. An arborist shall provide a condition assessment of these trees and written direction for additional protection at least 5 business days prior to beginning work. TxDOT will approve additional work.  Payment for the arborist and work in addition to work shown on the plans will be paid for under the force account method in accordance with Article 9.7, “Payment for Extra Work and Force Account Method.”

**Houston Toad.**

***(Blind Note: See Designers Quick Reference Guide Appendix P. Is the project on a toad road?)***

**Back Up Alarm.**

***(Blind Note: Consider for projects located near residential areas.)***

For hours 9 P to 5 A, utilize a non-intrusive, self-adjusting noise level reverse signal alarm.  This is not applicable to hotmix or seal coat operations.  This is subsidiary.

**Water Quality Ponds.**

***(Blind Note: Include the following when the project includes a water quality pond.)***

Provide a sample of filter media for approval prior to installation. Confirm elevations of underdrain pipe after installation and prior to covering with filter media. Provide an electronic pdf of as-builts within 60 calendar days of a water quality pond becoming active. As-built shall include GPS coordinates and elevations of all flowlines for inlets, flowlines for outlets, elevations of underdrain pipes, top of the pond, and bottom of the pond. Schedule and conduct a walk thru inspection with a TxDOT registered professional engineer prior to providing the as-built. Clean the pond as directed. Cleaning of the pond will be paid using force account in accordance with Item 9.7, “Payment for Extra Work and Force Account Method.”

**ITEM 8 – PROSECUTION AND PROGRESS**

***(Blind Note: Include the following note when a project includes a construction management  plan (CMP), utility conflict special provision, or ROW conflict special provision.)***

The sequence of work shown on the plans demonstrates a volume of work available in each phase of construction that will ensure the Contractor is not impacted by the unclear ROW, railroad, and utilities.  A deviation from the sequence of work shown on the plans must be approved by the Engineer.

***(Blind Note: When Form 2699 indicates the requirement for additional project-specific liquidated damages (APSLD), the following note is required with the dollar amount calculated from the Road User Cost (RUC) calculator. Unless approved by Dir of Const, the APSLDs must be below the maximum shown in below table. Delete the below table from the General notes.)***

|  |  |
| --- | --- |
| **Engineer's Construction Estimate** | **Maximum APSLD** |
| **More than** | **To and Including** |
| $                            -    |  $           1,000,000  |  $                30  |
| $             1,000,000  |  $           3,000,000  |  $              130  |
|  $             3,000,000  |  $           5,000,000  |  $              230  |
|  $             5,000,000  |  $         15,000,000  |  $          1,300  |
|  $          15,000,000  |  $         25,000,000  |  $          3,300  |
|  $           25,000,000  |  $         50,000,000  |  $          7,300  |
|  $          50,000,000  |   | $          8,300  |

***Delete the above table from the General notes.***

In addition to the daily contract administration liquidated damages (LDs), the project specific LDs will be increased by $**X,XXX** per working day for Road User Cost (RUC).

***(Blind Note: For guidance and note requirements on A+B Bidding projects, please reference The Austin District Designers Guide and the A+B guide.)***

Electronic versions of schedules will be saved in Primavera P6 format.

***(Blind Note: Following note for use of non-Standard Workweek. Standard is default.)***

***(Blind Note: Use method based on AUS designers Guide or Area Office preference.)***

Working days will be charged in accordance with 8.3.1.?, “?? Workweek.”

***(Blind Note: Include a reason for use of a delayed start SP 008-002, 003, 004, 009, & 010. Also, the SP will need to be submitted through TxDOTConnect for approval on each project.)***

A Special Provision to Item 8 to revise the begin work date has been included for the following reason(s):

***(Blind Note: All Overlay and Seal Coat projects will include SP 008-005 and the following notes with default late start date. Asphalt season should be listed in Item 300. Also, the SP will need to be submitted through TxDOTConnect for approval on each project.)***

In accordance with SP 008-005, the latest work start date is the August 1st immediately following the authorization to begin work.

***(Blind Note: Use note for CPM based on AUS Designers Guide. Default is bar chart.)***

A CPM schedule in Primavera format and a PSSR is required. Use software fully compatible with Primavera P6.

***(Blind Note: Include for overlay and seal coat preventive maintenance projects and MBGF update safety projects.)***

Early Safety Completion No Excuse Incentive

Early safety completion no excuse incentive will be paid for the early safety completion of work.  The deadline for the early safety completion will be 90 percent of the contract duration.  A no excuse incentive for early safety incentive completion will be paid at daily rate shown in Table NE for each day prior to the deadline. The incentive will have a maximum of 30 working days for computing the credit.  A disincentive will not be applied for late completion.

Early safety completion for the no excuse incentive occurs when traffic is following the lane arrangement as shown on the plans for the finish roadway; all pavement construction and pavement surfacing are complete; and signs, delineation, traffic signals, illumination, traffic control devices, raised pavement markers, and pavement markings are in their final position. The Engineer may make an exception for Type I permanent pavement markings and raised pavement markers provided the work can be completed with a mobile operation.  Early safety completion will include the completed installation of all crash safety features such as crash cushions, cable barrier, safety end treatment, guard fence, guardrail end treatments, and their mow strips as shown on the plans for the finish roadway. All installed items must be operating as intended.

Table NE

|  |  |
| --- | --- |
| Dollar Amount of Original Contract | Daily Rate Early Safety Completion |
| More Than | To |
| 0 | 5,000,000 | 3,000 |
| 5,000,001 | 10,000,000 | 6,000 |
| 10,000,001 | Over 10,000,001 | 10,000 |

All no excuse incentives will not be adjusted for any reason including but not limited to impacts/delays caused by contract duration added by change order, suspension of work, time charge suspension, added work, changes in scope, third parties, holidays, third party damage, material supply shortage, design errors, TxDOT, utilities known and unforeseen, differing site conditions, overruns, added work, change orders, acts of God, weather, railroad, special event traffic accommodations, unforeseeable events, and right of way. At the sole discretion of TxDOT, the date may be adjusted due to Acts of God such as earthquake, tidal wave, tornado, hurricane, or other cataclysmic phenomena of nature. Contractor expenditures (overtime, equipment cost, etc.) in attempt to obtain the incentive are not reimbursable or a reason for payment of the incentive. This incentive will be separate and independent from other incentives.

***(Blind Note: Include for major projects with duration over 36 months or value over $100 million.)***

Substantial Completion No Excuse Incentive

A No Excuse incentive of 1.5 percent of original contract value up to a maximum of $5,000,000 will be paid if substantial completion of the project is obtained prior to 105 percent of the planned substantial completion date provided in the accepted baseline schedule. Calculate the 105 percent substantial completion date by adding 5 percent of the working days duration for substantial completion to the substantial completion date. This date will not be revised based on monthly progress schedules, recovery schedules, etc. Upon acceptance of the baseline schedule, the 105 percent substantial completion date will be this set date for the duration of the project. Include an activity in the baseline schedule to reflect the substantial completion date as defined by this no excuse incentive. The no excuse activity will remain a static date in the schedule and not a floating date that changes based on updates and other activities.

Substantial completion date for the no excuse incentive occurs when traffic is following the lane arrangement as shown on the plans for the finish roadway; all pavement construction and pavement surfacing are complete; and signs, delineation, traffic signals, illumination, traffic control devices, raised pavement markers, and permanent pavement markings are in their final position. The Engineer may make an exception for Type I permanent pavement markings and raised pavement markers provided the work can be completed with a mobile operation.  Substantial completion will include the completed installation of all crash safety features such as crash cushions, traffic/bridge rail, cable barrier, safety end treatment, guard fence, guardrail end treatments, and their mow strips as shown on the plans for the finish roadway. All installed items must be operating as intended.

All no excuse incentives will not be adjusted for any reason including but not limited to impacts/delays caused by contract duration added by change order, suspension of work, time charge suspension, added work, changes in scope, third parties, holidays, third party damage, material supply shortage, design errors, TxDOT, utilities known and unforeseen, differing site conditions, overruns, added work, change orders, acts of God, weather, railroad, special event traffic accommodations, unforeseeable events, and right of way. At the sole discretion of TxDOT, the date may be adjusted due to Acts of God such as earthquake, tidal wave, tornado, hurricane, or other cataclysmic phenomena of nature. Contractor expenditures (overtime, equipment cost, etc.) in attempt to obtain the incentive are not reimbursable or a reason for payment of the incentive. This incentive will be separate and independent from other incentives.

***(Blind Note: Include notes & SP008-006 for use with milestone or substantial completion.)***

***For substantial completion:***

Substantially complete the project in \_\_ working days. The disincentive/incentive for substantial completion is $\_\_\_\_ per day with a maximum of \_\_working days for computing the credit.

***For milestones (Duplicate note as necessary depending on number of milestones used.):***

Substantially complete Milestone \_\_ in \_\_ working days. The disincentive/incentive for completion is $\_\_\_\_ per day with a maximum of \_\_working days for computing the credit. The time charges for Milestone \_\_ will begin \_\_\_\_\_ and end \_\_\_\_\_\_.

**Lane Closure Assessment Fee.**

***(Blind Note:  All projects must in include below fee table & SP008-045. With Dir. Of Const. approval, a project specific fee table may be created in accordance with the designers guide appendix O.)***

The monthly estimate will be deducted a fee per 15-minute interval according to the following schedule for each closure or obstruction that extends beyond the allowable closure time.  Fee will be based on Annual Average Daily Traffic (AADT) of the roadway.   Use AADT information as shown on the plans. If AADT is not found on the plans please use TxDOT – Statewide Planning Map [TxDOT - Statewide Planning Map](https://www.txdot.gov/apps/statewide_mapping/StatewidePlanningMap.html). If the roadway has a peak direction of traffic, the Engineer may reduce the fee by 25 percent for off-peak direction of traffic for up to 30 minutes.

|  |  |
| --- | --- |
| **AADT** | **Lane Closure Assessment Fee (per lane per 15 minutes)** |
| **More than** | **To and Including** |
| 0 | 10000 | $150.00 |
| 10000 | 20000 | $300.00 |
| 20000 | 40000 | $600.00 |
| 40000 | 60000 | $900.00 |
| 60000 | 80000 | $1,200.00 |
| 80000 | 100000 | $1,500.00 |
| 100000 |   | $1,800.00 |
| All of IH 35 Mainlanes |   | $2,000.00 |

**ITEM 100 - PREPARING RIGHT OF WAY**

Prep ROW must not begin until accessible trees designated for preservation have been protected, items listed in the EPIC have been addressed, and SW3P controls installed in accessible areas.

Backfill material will be Type B Embankment using ordinary compaction.

Follow Item 752.4 Work Methods and Item 752 general notes when removing or working on or near trees and brush.

***(Blind Note: Include below unless requested removal by AE due to bird season or project type.)***

Unless shown otherwise in the plans or a designated non-mow area, perform trimming or removal for areas within 30 ft. of edge of pavement under construction. Trim or remove to provide minimum of 5 ft. of horizontal clearance and 7 ft. of vertical clearance for the following: sidewalks, paths, guard fence, rails, signs, object markers, and structures. Trim to provide a minimum of 14 ft. vertical clearance under all trees. This work is subsidiary.

**ITEM 105 – REMOVING TREATED AND UNTREATED BASE AND ASPHALT PAVEMENT**

Existing typical is based on information available. This typical may not account for all maintenance work such as overlays or pavement repairs. A change in material type or thickness does not warrant additional payment.  Payment is full compensation for removing all material to the depth specified.

**ITEM 110 – EXCAVATION**

The Engineer will define unsuitable material.

**ITEM 132 – ALL EMBANKMENT**

At no time will the retaining wall backfill material exceed the adjacent embankment operation by more than one lift. At no time will the embankment adjacent to the retaining wall backfill exceed the wall backfill by any elevation. Embankment placed over the area of MSE backfill must meet the same backfill requirements for the type specified under Item 423.

The Engineer will define unsuitable material. Material which the Contractor might deem to be unsuitable due to moisture content will not be considered unsuitable material.

Prior to begin embankment of existing area, correct or replace unstable material to a depth of 6 in. below existing grade. Embankment areas will be inspected prior to beginning work.

Rock or broken concrete produced by the project is allowed in earth embankments. The size of the rock or broken concrete will not exceed the layer thickness requirements in Section 132.3.4., “Compaction Methods.” The material will not be placed vertically within 5 ft. of the finished subgrade elevation.

Embankment placed vertically within 5 ft. of the finished subgrade elevation or within the edges of the subgrade and treated with lime, cement, or other calcium-based additives must have a sulfate content less than 3000 ppm. Allow 5 business days for testing. Treatment of sulfate material 3000 ppm to 7000 ppm requires 7 days of mellowing and continuous water curing, in accordance TxDOT guidelines for Treatment of Sulfate-Rich Soils and Bases in Pavement Structures (9/2005). Material over 7000 ppm is not allowed.

**ITEM 132 – EMBANKMENT TY C**

The Department must approve all Type C embankment material before use on the project.  Do not furnish shale clays.  Furnish embankment with sulfate content less than 3000 ppm if treated with calcium-based chemicals or within 5 ft. of the finished subgrade elevation.    Existing material from within the project limits that meets the Type C Substitute requirements may substituted for Type C but is not allowed to substitute for C1, C2, or density-controlled material.  Offsite material may be used to blend with onsite material to achieve the Type C requirements. The Type C substitute may also be existing material in accordance with 132 for rock embankment.  The Type C substitute material may only be placed vertically beyond 5 ft. below the finished subgrade elevation or 5 ft. beyond the edge of the subgrade.

| **Type C** |
| --- |
| **Percent Retained** | **LL Max** | **PI** | **PI** |
| **3”** | **#4** | **Max** | **Min** |
| 0 | MIN 45 | 55 | 20 | 6 |
| **Type C Substitute** |
| **Percent Retained** |  | **PI** |  |
| **3”** | **#4** | **Max** |  |
| Max 10 |   10-90 |  | 25 |  |

***(Blind Note: TY C1 and C2 table requires Lab approval.)***

**TY C1 and C2**

| **Description** | **Percent Retained** | **LL Max** | **PI** | **PI** |
| --- | --- | --- | --- | --- |
| **3”** | **1 3/4"** | **3/8"** | **#4** | **#40** | **Max** | **Min** |
| Embankment (Ordinary) (TY C1) | 0 | 0-10 | - | 45-75 | 60-85 | 45 | 20 | 6 |
| Embankment (Ordinary) (TY C2) | - | - | 0 | 30-75 | 50-85 | 55 | 25 | 8 |

**ITEM 134 - Backfilling Pavement Edges**

If seal coat is final surface, install backfill prior to placing seal coat.

For all backfill, compact using a light pneumatic roller, install at 3:1 slope to tie into existing terrain, and apply at rate of 0.12 GAL/SY a typical erosion control material per Item 300.

For TY A backfill, furnish flexible base meeting the requirement for any type or grade, except Grade 4, in accordance with Item 247. Compressive strengths and wet ball mill for flexible base are waived for this item. Alternate materials include RAP, salvaged material from Item 105, and salvaged material from Item 351. The alternate materials are not required to be tested but visually verified as 100% passing a 2.5 in. sieve.

**ITEM 160 - TOPSOIL**

Off-site topsoil will have a minimum PI of 25.

No Sandy Loam allowed.

Obtain approval of the actual depth of the topsoil sources for both on-site and off-site sources.

Construct topsoil stockpiles of no more than five (5) feet in height.

It is permissible to use topsoil dikes for erosion control berms within the right of way, as directed.

Seed or track slopes within 14 days of placement.

Salvage topsoil from sites of excavation and embankment. Maximum salvage depth is 6 inches.

Windrowing of topsoil obtained from the Right of Way (ROW) is not allowed.

**ITEM 161 - COMPOST**

***(Blind Note: Use this note if there is topsoil to be salvaged.)***

Furnish and install a inches layer of Compost Manufactured Topsoil (CMT) (BOS, BIP, or PB). Salvage approximately cubic yards of topsoil from areas shown on plans. Maximum salvage depth is inches.

***<or>***

Furnish and install Erosion Control Compost. Roll ECC as specified.

***<or>***

Furnish and install a 1-inch layer of General Use Compost.

**ITEM 162 – SODDING FOR EROSION CONTROL**

***(Blind Note: Type of sod must be shown.)***

Provide common Bermuda. Provide St. Augustine if the adjacent grass is St. Augustine.

**ITEM 164 – SEEDING FOR EROSION CONTROL**

Hydro mulch seeding will be allowed as a substitute for drill seeding if placed October 1 thru January 31. It may only be substituted in areas with a slope less than 1 in. vertical to 12 in. horizontal.  It may not be used in the bottom of a ditch or channel.  Payment will be made using the existing drill seed item.

**ITEM 168 – VEGETATIVE WATERING**

Water all areas of project to be seeded or sodded.

Maintain the seedbed in a condition favorable for the growth of grass. Watering can be postponed immediately after a rainfall on the site of **½** inch or greater, but will be resumed before the soil dries out. Continue watering until final acceptance.

Vegetative watering rates and quantities are based on **¼** inch of watering per week over a
3-month watering cycle. The actual rates used and paid for will be as directed and will be based on prevailing weather conditions to maintain the seedbed.

*(Blind Note: Added to indicate how Basis of Estimate was derived.)*

Obtain water at a source that is metered (furnish a current certification of the meter being used) or furnish the manufacturer’s specifications showing the tank capacity for each truck used. Notify the Engineer, each day that watering takes place, before watering, so that meter readings or truck counts can be verified.

**ITEM 169 – SOIL RETENTION BLANKETS**

Type A blankets containing straw fibers are not allowed. Type B and D blankets shall be a spray type blanket.

**ITEM 180 – WILDFLOWER SEEDING**

***(Blind Note: See Designers Quick Reference Guide for default seeding mixture.)***

**ITEM 204 – SPRINKLING**

Apply dust control to haul roads, construction traffic routes, staging areas, field office areas, material storage areas, parking areas, and stockpiles as directed.  If dust control is not being maintained, the Department may cease operations until dust is controlled.   This work is subsidiary.

**ITEM 216 - PROOF ROLLING**

Correct and perform “Proof Rolling” retest at the Contractor’s expense, to the satisfaction of the Engineer, when initial “Proof Rolling” yields a failing result.

**ITEM 247 - FLEXIBLE BASE**

The layer thickness will be 4 in. to 6 in. unless shown on the plans. Placing in a single layer is allowed when total thickness of base is 8 in. or less.  When placed in multiple layers, compact the bottom and middle layers to at least 95% and 98% of the maximum dry density, respectively.  When placed in a single layer or the final layer, compact to at least 100%.

Correction of subgrade soft spots is subsidiary.

Complete per plans the subgrade, ditches, slopes, and drainage structures prior to the placement of base.

Do not use a vibratory roller to compact base placed directly on top of a drainage structure.

Grade 4 will have the same material requirements as Grade 5 except minimum compressive strength at lateral pressure 3 psi will be **70** psi and at lateral pressure 15 psi will be 150 psi. Grade 4 does not have a minimum compressive strength at lateral pressure 0 psi.

***(Blind Note: Include the following note for off system bridge projects with ADT <8,000)***

Flex base may use ordinary compaction. Proof rolling of the base is required and subsidiary.

**ITEMS 260 THRU 276 – SUBGRADE TREATMENTS AND BASE**

***(Blind Note: Have Lab test existing subgrade for pounds per square yard of treatment material.)***

Use ordinary compaction for subgrade treatment.

Provide soil and base samples 5 business days prior to perform treatment work to allow time to test soil and confirm treatment rate.

**ITEM 260 - LIME TREATMENT (ROAD-MIXED)**

Apply **??** pounds per square yard.

For sulfate content greater than 3000 ppm, mix in an additional 4.0% points above optimum moisture after initial mixing and prior to mellow.

If the sulfate content is greater than 7000 ppm, do not treat. Undercut the unsuitable material to the depth per bid item for lime treatment and replace unsuitable material in accordance with Item 110. Payment will be made in accordance with Item 110.

**ITEM 265 – FLY ASH OR LIME-FLY ASH TREATMENT (ROAD-MIXED)**

Apply **??** pounds per square yard of lime and **??** pounds per square yard of fly ash.

If the plasticity index of the soil is greater than 25, apply half of the lime prior to applying fly ash. Once the fly ash application is complete, apply remaining lime.

**ITEM 275 – CEMENT TREATMENT (ROAD-MIXED)**

Apply **??** pounds per square yard.

Unless shown on the plans flexible base will be as follows: Type A Grade 4 or 5, microcracked, and 7-day unconfined compressive strength of 150 psi.

**ITEM 276 – CEMENT TREATMENT (PLANT-MIXED)**

Unless shown on the plans, flexible base will be as follows: Class N, Type A Grade 4 or 5, and microcracked.

**Class N Requirements**

|  |  |  |
| --- | --- | --- |
| **Description** | **Minimum** | **Maximum** |
| Cement Content (by dry weight of base) | 2% (Flexible Pavement)3% (Rigid Pavement) | 5% |
|  | **Test Method** | **Requirement** |
| 7-Day Unconfined Compressive Strength (min.)1 | Tex-120-E, Part I | 300 psi (Flexible Pavement) |
| 500 psi. (Rigid Pavement) |
| Retained Strength after Moisture Conditioning (min.) | Tex-120-E, Part I (10-day capillary soak) | 100% of 7-Day Unconfined Compressive Strength |
| Expansion2 | ASTM C 1567 | 0.10% (maximum) |

1. Meet the unconfined compressive strength after addition of stabilizer.
2. Required when using crushed concrete or other material that contains cement. Provide the certified test report signed and sealed by a licensed professional engineer. This may be waived by the Engineer when the material has a known performance history based on previous ASTM C 1567 or ASTM C 1260 tests.

**ITEM 300s – SURFACE COURSES AND PAVEMENTS**

For seal coat applications: Asphalt cements, cutback, performance-graded asphalt season is May 1 thru September 15. Emulsified asphalt season is April 1 thru October 15.

The latest work start date for asphalt season is August 1 when a date is required per special provision to Item 8.1.

Overlay and seal coat projects must include placement of surface material on the existing mailbox turnouts, including turnouts that are worn paths without a pavement structure.  Apply a new surface and material as necessary to create a mailbox turnout with a cross slope that matches the adjacent pavement. Payment of work will be in accordance with the item for the type of material placed.

**ITEM 302 – AGGREGATES FOR SURFACE TREATMENTS**

Previously tested aggregates delivered to the project, which are found to contain excessive quantities of dust (more than 0.5 percent passing the no. 40 sieve) during pre-coating, stockpiling or hauling operations, will be rejected. Use test method Tex-200-F, Part II, for testing.

Table 3 Los Angeles Abrasion, % Max, is lowered from 35 to 30 and is applicable to all aggregates.

When TY E is allowed, furnish coarse fractionated recycled asphalt pavement (CF-RAP). CF-RAP aggregate stockpiles must be approved on a stockpile-by-stockpile basis, unless approved by the Engineer. Do not exceed stockpiles greater than 2000 tons. CF-RAP will meet the below gradation requirement (after ignition burn off of asphalt) or finer than Grade 4. CF-RAP will meet deleterious material and decantation requirements in accordance with Table 3.

Furnish SAC A or SAC B with a RSSM ST of 13 or less.

**CF-RAP Requirements**

| **Percent Retained** |
| --- |
| **5/8”** | **1/2"** | **3/8"** | **#4** | **#8** |
| 0 | 10-25 | 60-80 | 85-100 | 90-100 |

**ITEM 305 – SALVAGING, HAULING, AND STOCKPILING RECLAIMABLE ASPHALT PAVEMENT**

***(Blind Note: Discuss with Area Office and select one of the below. Default is TxDOT retains.)***

Stockpile the material at \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (location address).

***or***

Contractor retains ownership of the material.

**ITEM 310 – PRIME COAT**

Apply blotter material to all driveways and intersections. This work is subsidiary.

When Multi Option is allowed, provide MC 30, EC 30 or AE-P. MC 30 is not allowed in Travis County.

Rolling to ensure penetration is required.

**ITEM 314 - EMULSIFIED ASPHALT TREATMENT**

Process the top 1.5 inches of base material. Use 30% of total volume emulsified asphalt in the mixture.

Use emulsified asphalt, AEP or equal, for dust control. This work is subsidiary.

**ITEM 316 – SEAL COAT**

Ensure that all underseals are covered by HMACP before exposing to traffic for roadways listed in Table 1 of Item 502 or ADT greater than 5,000.

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 a medium pneumatic roller in accordance with Item 210.

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

Remove and dispose of 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.

When a new layer of HMA is placed under a seal coat surface, provide a ride quality on the top layer of HMA in accordance with Item 247 before placement of the seal coat surface. This work is subsidiary.

**ITEM 320 - EQUIPMENT FOR ASPHALT CONCRETE PAVEMENT**

Use of motor grader is allowed for placement of mixtures greater than 10 inches from the riding surface, when hot-mix is used in lieu of flexible base, or as allowed.

**ITEMS 341, 344, & 3076 THRU 348/3082 - HOT-MIX ASPHALT PAVEMENT**

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

Remove and dispose of off the ROW the audible/profile markings, reflectorized markings, and raised markers.

Install transverse butt joints with 50 ft. H: 1 in. V transition from the new ACP to the existing surface.  Install a butt joint with 24 in. H: 1 in. V transition from the new ACP to a driveway, pullout or intersection. Saw cut the existing pavement at the butt joints.  This work is subsidiary.

Use a device to create a maximum 3H:1V notched wedge joint on all longitudinal joints of 2 in. 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.

Lime or an approved anti-stripping agent must be used when crushed gravel is utilized to meet a SAC “A” requirement.

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 will have a minimum rut depth of 3mm except for SMA with HPG or PG 76.

**ITEMS 341/3076 - DENSE-GRADED HOT-MIX ASPHALT**

Use the SGC for design and production testing of all mixtures.  Design all Type D mixtures as a surface mix, maximum 15% RAP and no RAS.  Contractor may not use a substitute PG binder for 76-22.  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 Wheel minimum number 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 1 of 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.

**ITEM 342/3079 - PERMEABLE FRICTION COURSE (PFC)**

For SAC A, blending SAC B aggregate with an RSSM greater than the SAC A rating or 10, whichever is greater, is prohibited.

The use of RAP is prohibited.

Submit the A-R binder design to the District Laboratory for approval.

Permeability test shall not exceed 20 seconds.

Install a butt joint when the edge is adjacent to a driveway or intersection. The taper for the butt joint shall be 24H:1V beyond the normal edge line of the PFC. This work is subsidiary.

**ITEM 346/3080 - STONE-MATRIX ASPHALT (SMA)**

For SAC A, blending SAC B aggregate with an RSSM greater than the SAC A rating or 10, whichever is greater, is prohibited for travel lanes.

The use of RAP is prohibited.

The minimum rut depth at 20,000 passes of the Hamburg Wheel test is 3 mm.

In-place air voids are waived for SMA-F placed at a 1” compacted lift. Use of a pneumatic roller is prohibited for SMA-F. Water flow rate for SMA-F will exceed 120 seconds when tested using Tex-246-F. Perform water flow rate testing once per lot.

**ITEMS 347/3081 - 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.

When using a Thermal Imaging System follow the Weather Condition requirements for When Not Using a Thermal Imaging System.

Produce mixture with a Department approved WMA additive or process to facilitate compaction when the haul distance is greater than 40 miles or when the air temperature is 70°F and falling. WMA processes such as water or foaming processes are not allowed under these circumstances.

**ITEM 351 – FLEXIBLE PAVEMENT STRUCTURE REPAIR**

Use materials and lift thickness per SS3076. Type C and D mixes will receive an underseal per SS 3085 if the repair surface is the final surface. This work is subsidiary.

Unless otherwise shown on the plans, use the following for repairs:

Type C and D mix will use PG 76 -22 and will be placed with a paver.

Type B mix will use PG 64 -22 and may use a blade to place the mix.

For up to 2 in. deep repairs use Type D PG 76-22 SAC B.

For up to 6 in. deep repairs use Type C PG 76-22 SAC B.

For greater than 6 in. deep repairs use 2 in. Type C or D surface and Type B for the bottom lifts.

For greater than 6 in. deep repairs will be milled then overlaid, adjust the depth of the Type C or D to provide Type C or D to a depth 1.5 in. below the bottom of the milling.

**ITEM 354 - PLANING AND TEXTURING PAVEMENT**

***(Blind Note: Standard 354.3.4 TxDOT retains material. Default is override standard with Option A.  Option B allowed if approved by Area Office.)***

***Option A – AUS District Default***

Contractor retains ownership of salvaged materials.

***Option B***

Stockpile salvaged materials at **??**.

Unless shown on the plans, mill and resurface the work area during each shift on roadways with ADT greater than 20,000 or if milling will expose the flex base or subgrade per the typical section. Unless shown on the plans, mill and resurface a work area within 5 days for roadways with ADT 20,000 or less.

Taper permanent transverse faces 50 ft. per 1 in.  Taper temporary transverse faces 25 ft. per 1 in.  Taper permanent longitudinal faces 6 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.

Milled surfaces directly covered by a mat thickness of 1 in. or less shall produce a milled texture with a ridge to valley depth (RVD) no greater than 0.25 in. (6.5 mm).

***(Blind Note: Micro-milling requires OTU SP354-004.)***

Micro-milling equipment may use a drum narrower than 12 ft.

**ITEM 356 - FABRIC UNDERSEAL**

Longitudinal, full width underseal use a string line, remove pavement markers, and remove vegetation and blade pavement edges. Use roll width ??. Apply asphalt binder the rate of ??. Pavement joint underseal use a roll with width ??.

**ITEM 358 – HOT IN-PLACE RECYCLING OF ASPHALT CONCRETE SURFACES (HIR)**

Furnish a mobile testing laboratory meeting requirements of TX-237-F and a Level 1A certified laboratory technician who is qualified under the Department’s approved program.

Design the mixture to restore the in-place asphalt concrete pavement to mixture type \_\_\_\_\_ and binder properties of \_\_\_\_\_\_.

Furnish a scarifier with height adjustments to clear manholes or other obstructions. ***(Optional)***

Provide an onboard pug mill. ***(Optional)***

**ITEM 360 – CONCRETE PAVEMENT**

Provide Class K concrete as necessary to follow work sequence, comply with closure restrictions, and meet requirements for opening to traffic. This work is subsidiary.

Tining will be longitudinal.

After preparation of subgrade and base courses for CRCP, saw cut and remove 2 in. of existing CRCP prior to widening CRCP to create a clean vertical joint for widening. Unless otherwise specified on the plans, the work performed, materials furnished, equipment, labor, tools, and incidentals will not be paid for directly but will be subsidiary.

**ITEM 400 - EXCAVATION AND BACKFILL FOR STRUCTURES**

Unless shown on the plans, the following backfill will apply to cutting and restoring flexible pavement. Backfill with cement-stabilized backfill. The cement-stabilized backfill is subsidiary.

Cap the backfill with Type B hot-mix to a depth equal to the adjacent hot-mix. At locations where the backfill surface is final, place 1-1/2 in. Type D for the surface. The minimum hot-mix depth will be 4 in.

Unless shown on the plans, flowable fill option 1 item will be used for pavement widening.

Saw-cut the pavement at the edge of the excavation. This work is subsidiary.

Backfill the bridge ends in accordance with the limits shown on TxDOT “CSAB” Standard. Use material in accordance with “CSAB” or Item 423, Type BS. The “CSAB” optional bond breaker materials are allowed. This work is subsidiary.

**ITEM 416 - DRILLED SHAFT FOUNDATIONS**

Stake all Foundations, for approval, before beginning drilling operations.

Calculate the vertical signal head clearance before placing any signal pole foundation.

For mast-arm signal and strain pole anchor bolts, set two in tension and two in compression.

Obtain approval of placement prior to placing concrete.

Remove spoils from a flood plain at the end of each workday.

**ITEMS 420, 425, 441, & 462 - STRUCTURES**

**Bridge Vertical Clearance and Traffic Handling.**

Notify TxDOT project staff and the local bridge engineer 10 business days prior to the following:  change in vertical clearance, placing beams/girders over traffic, opening, or removing traffic from a bridge or portion of a bridge, and completion of bridge work.  This requirement includes bridge class culverts.  Provide vertical clearance for all structures (including signal mast arms, span wires, and overhead sign bridge structures) within the project limit.  Submit information and notices to local bridge engineer at AUS\_BRG\_Notify@txdot.gov.

**ITEM 420 – CONCRETE SUBSTRUCTURES**

Do not use PMDF in areas where a “Free Joint” is indicated in the plans.

Check the sign plans for locations of clearance signs and brackets on structures, which will require inserts in the pre-stressed beams.

Where Retaining Walls are integral parts of the abutment header, do not place the abutment cap prior to backfilling the wall and the abutment area up to the elevation of the bottom of the abutment cap.

Mass placements are defined as placements with a least dimension greater than or equal to 5 ft. or designated elsewhere on the plans.

The “H” values shown on Bridge Layouts are estimated column heights. Calculate the actual column heights based on field conditions.

**Perform work during good weather unless otherwise directed. If work is performed at Contractor’s option, when inclement weather is impending, and the work is damaged by the weather, the Contractor is responsible for all costs associated with repairs/replacement.**

Upon completion of the structure, stencil the National Bridge Inventory (NBI) number (structure number) using black paint and 4 in. tall numbers at 4 locations designated by TxDOT.  This work is subsidiary.

Bonding agents are required at construction joints. Do not use membrane curing for structural concrete as defined in Item 421, Table 8.

Remove all loose Formwork and other Materials from the floodplain or drainage areas daily.

***(Blind Note: Include below if project has bus stops.)***

Bus stop pads pavement structure will be 6” thick and 4” base bedding unless detailed in the plans. Furnish base meeting the requirement for any type or grade in accordance with Item 247. Compressive strengths for flexible base are waived. In lieu of flexible base, RAP may be supplied. RAP must be 100% passing a 1-3/4” sieve. Base and RAP will be placed using ordinary compaction. Class A concrete is required and may use Coarse Aggregate Grades 1-8. Expansion joints will be placed every 20’. Expansion joints will be constructed as detailed in the latest TxDOT Concrete Curb and Curb and Gutter standard. Reinforcement will be No. 3 or No. 4 bars placed in accordance with concrete riprap Item 432.3.1.

**ITEM 421 - HYDRAULIC CEMENT CONCRETE**

***(Blind Note: All Item 421 notes below are examples for use if applicable.)***

High Performance Concrete (HPC) is required for Class \_\_\_, \_\_\_, \_\_\_, and \_\_\_ concrete.

Minimum 28-day design strengths for the following classes are:

 Class ??: \_\_\_\_\_\_\_\_\_\_ (psi.)

 Class ?? (HPC): \_\_\_\_\_\_\_\_\_\_ (psi.)

For Class K concrete, use grade(s) \_\_\_\_\_\_ coarse aggregate and only for \_\_\_\_\_\_\_\_\_ usage.

Apply corrosion inhibiting admixture at a rate of \_\_\_\_\_ oz / yd.

**ITEM 423 - RETAINING WALLS**

Mow strip shall be 2 ft. wide unless otherwise shown on the plans.  Immediately backfill the face of the retaining wall after the wall height gets above the finish grade in front of the wall.  Retaining wall coping gap from the face of the wall panel to the inside face of coping shall not be more than 1.5 in.

Provide a sample for approval of the surface finish prior to beginning fascia work and precast operations.  Unless otherwise shown on the plans, the wall fascia shall receive an ashlar stone finish.  This work is subsidiary.

**Type BS backfill will use modified gradation limits as shown below.**

|  |  |  |
| --- | --- | --- |
| **Type** | **Sieve Size** | **Percent Retained** |
| **BS MOD** | **3 in.** | **0** |
|  | **No. 4** | **85-100** |

**ITEM 424 - PRECAST CONCRETE STRUCTURAL MEMBERS (FABRICATION)**

Submit shop drawings for the following non-stressed members:

***[Blind Note: List, default does not require shop drawings.] (Optional)***

**ITEM 425 - PRECAST PRESTRESSED CONCRETE STRUCTURAL MEMBERS**

Conduct a pre-placement meeting for the erection of structural members.

**ITEM 427 - SURFACE FINISHES FOR CONCRETE**

***(Blind Note: This is a required note for all jobs that include Item 420 and 450 bid items.)***

Provide a rub finish to Surface Area I.

Color coatings may be applied using concrete paint or opaque sealer.

**ITEM 429 - CONCRETE STRUCTURE REPAIR**

**Use the following types of repair materials:**

***[Blind Note: List if some of the types in the spec are not desired.] (Optional)***

**ITEM 432 - RIPRAP**

Mow strip riprap will be 4 in. and all other riprap will be 5 in. unless otherwise shown on the plans. Mow strip for cable barrier may be placed monolithically with the barrier foundations if using concrete in accordance with Item 543. Fiber reinforcement is not allowed except in mow strip for cable barrier if foundation and mow strip are placed monolithically. GFRP is allowed reinforcement for all applications.

Saw-cut existing riprap then epoxy 12 in. long No. 3 or No. 4 bars 6 in. deep at a maximum spacing of 18 in. in each direction to tie new riprap to existing riprap. This work is subsidiary.

Provide Type A Grade 3 or 5 flexible base for cement stabilized riprap. Compressive strengths for flexible base are waived.

SGT approach taper, paid for using mow strip item, will be installed using concrete, flexible base coated with SS-1 at a rate of 0.12 GAL/SY, or HMA Type B/C/D. Placement will be ordinary compaction and does not require placement using an asphalt paver.

**ITEM 434 - BRIDGE BEARINGS**

Fabricate bearings (or special components) in accordance with Item **XXX**.

***[Blind Note: For bearings with special components, indicate if fabrication is under a different specification.] (Optional)***

**ITEM 439 - BRIDGE DECK OVERLAYS**

Provide grout for bonding new concrete to existing concrete.

**ITEM 441 - STEEL STRUCTURES**

Conduct a pre-placement meeting for the erection of structural members. Submit erection drawings for rolled-beam units.

Stress-relieve the following items: ***(Optional)***

**ITEM 450 - RAILING**

Use the elliptical tube option for rails T401, T402, and C402.

**ITEM 454 - BRIDGE EXPANSION JOINTS**

Apply protection System II in accordance with Item 446 to armor joint.

***(Blind Note: Required note for Header-Type Expansion Joints.)***

For Header-Type Expansion Joints, go to the following TxDOT website for approved systems:

<https://www.txdot.gov/inside-txdot/division/bridge/approved-systems/expansion-joints.html>

<http://ftp.dot.state.tx.us/pub/txdot-info/cmd/mpl/polyconc.pdf>

***(Blind Note: Required note for Asphalt-Plug Expansion Joints.)***

For Asphalt-Plug Expansion Joints, go to the following TxDOT website for approved systems:

<https://www.txdot.gov/inside-txdot/division/bridge/approved-systems/expansion-joints.html>

<http://ftp.dot.state.tx.us/pub/txdot-info/cmd/mpl/jtsealrs.pdf>

**ITEM 460 - CORRUGATED METAL PIPE**

Field adjust pipe end to maintain the necessary slope. Field cutting of pipe end is allowed. Coat all field cuts with asphalt paint. Cut ditches to grade before laying pipe.

**ITEM 462 - CONCRETE BOX CULVERTS AND DRAINS**

***(Blind Note: If necessary due to project specific reason, insert a note to not allow precast or cast in place.)***

**ITEM 465 – JUNCTION BOXES, MANHOLES, AND INLETS**

Maintain drainage at curb inlets until the final roadway surface is placed.

For inlets not placed in roadway, construct cast-in-place reinforced concrete apron as shown in the standards. This work is subsidiary.

Backfill shall use cohesionless material per Item 400 or flowable fill if width between structure and extent of excavation is 2 ft. or less. This is subsidiary.

**ITEM 466 - HEADWALLS AND WINGWALLS**

Remove all loose formwork and materials from the waterway at the end of each work week or prior to a rain event.  Debris that falls into the waterway must be removed at the end of each work day.  Upon completion of the structure, stencil the National Bridge Inventory (NBI) number (structure number) using black paint and 4 in. tall numbers at 4 locations designated by TxDOT.  This work is subsidiary.

**ITEM 467 - SAFETY END TREATMENT**

Field adjust pipe end to maintain the necessary slope.  Field cutting of pipe end is allowed. Coat all metal field cuts or exposed reinforcement with asphalt paint.

For all Type II SETs, provide riprap apron shown in the cast-in-place standards and precast riprap detail standard. This work is subsidiary.

Cast-in-place or precast will be allowed unless stated otherwise.

**ITEM 474 - LINEAR DRAINS**

Provide reformed circumferential corrugation ends if helical corrugated pipe is furnished.

Provide continuous draw openings in slotted drainpipes.

**ITEM 479 – ADJUSTING MANHOLES AND INLETS**

Use style SL, per standard PSL, for capping inlets and manholes unless otherwise shown on the plans. The cap may be cast in place. The cap must be level and overhang 6 in. beyond the outside edge of the structure. Dowel or attachment of the cap to the existing structure is not required.

**ITEM 496 - REMOVING STRUCTURES**

Submit a demolition plan to the Engineer. Have the plan signed and sealed by a licensed professional engineer when the structure will continue to accommodate traffic after removal has begun and the removal impacts any part of the structure below the deck or riding surface. If applicable, the plan must detail requirements for meeting the U.S. Army Corps of Engineers’ Section 404 Permit.  The demolition plan must detail handling of roadway and waterway traffic.  Waterway traffic must be maintained at all times unless a closure is approved by the Engineer.

No debris is allowed to fall into a body of water. Debris that falls into the water must be removed at the end of each workday.  Debris that falls into the floodway must be removed at the end of each work week or prior to a rain event.

No debris is allowed to fall directly onto existing pavement.  Existing pavement must be protected from damage by debris with a minimum of 1 ft. sand cushion.  Submit an alternate roadway protection or cushion material to Engineer for approval. If existing pavement is PFC, use a vacuum truck to remove embedded sand after removal of sand cushion and debris. This work is subsidiary.

**ITEM 502 - BARRICADES, SIGNS, AND TRAFFIC HANDLING**

Table 1

Roadway Limits Allowable Closure Time

IH 35 All (1 lane closed) 9 P to 5 A

IH 35 All (2 lanes closed, see allowable work below) 9 P to 5 A

IH 35 All (2 lanes closed, all work) 11 P to 5 A

SH 45 US 183 to SH130 8 P to 5 A

LP 1 William Cannon to Parmer Lane 8 P to 5 A

US 183 SH 29 to FM 1327 8 P to 5 A

SH 71 SH 130 to IH 35 8 P to 5 A

SH 71 SH 304 to Tahitian Drive 8 P to 5 A

SH 71 US 290 W to RM 3238 8 P to 5 A

US 290 W IH 35 to Nutty Brown Rd 8 P to 5 A

US 290 E IH 35 to SH 95 8 P to 5 A

FM 734 FM 1431 to US 290 E 8 P to 5 A

US 79 IH 35 to Bus 79 in Taylor 8 P to 5 A

RM 1431 Lohmans Ford Rd to IH 35 8 P to 5 A

SH 29 LP 332 western terminus to SH 130 8 P to 5 A

SH 80 Charles Austin to River Road 8 P to 5 A

RM 2222 All 8 P to 5 A

RM 620 All 8 P to 5 A

RM 2244 All 8 P to 5 A

SPUR 69 All 8 P to 5 A

LP 360 All 8 P to 5 A

LP 343 All 8 P to 5 A

LP 275 All 8 P to 5 A

FM 1325 All 8 P to 5 A

All Within 200’ of a signalized intersection 9 P to 5 A

All All (Full Closure, see allowable work below) 11 P to 4 A

Table 2

Roadway Limits Allowable Closure Time

?? ?? to ?? ?? P to ?? A

Table 3 (Mobile Operations)

Roadway Allowable Sun Night thru Fri Noon Allowable Sat thru Sun Morn

Within Austin City Limits 10 A to 2 P and 7 P to 6 A 7 P to 10 A

Outside Austin City Limits 9 A to 3 P and 7 P to 7 A 6 P to 11 A

IH 35 main lanes 10 P to 5 A 9 P to 9 A

AADT over 50,000 8 P to 6 A 8 P to 10 A

***(Blind note: Table 1 contains default times for major roadways and should remain in all the plans. A revision to Table 1 requires coordination with the Area Office. Table 2 is for designer to insert project specific times for roadways not listed in Table 1. If the project is not listed in the tables, the allowable times will default to the following paragraph.)***

For roadways without defined allowable closure times, nighttime lane closures will be allowed from 8 P to 6 A.

Daytime or Friday night lane closures will not be allowed unless otherwise shown on the plans.  One lane in each direction will remain open at all times for all roadways unless otherwise shown on the plans.

Two lanes closed on IH 35 allowed to begin at 9 P.M. for main lane (shoulder work not included) hotmix overlay or pavement repair operations (does not include bridge joint work).

Full closures only allowed Friday night thru Monday morning for bridge beam installation, bridge demolition, or OSB truss removal/installation. Full closures only allowed for roadways with frontage roads or if a designated detour route is provided in the plans.

No closures will be allowed on the weekends, working day prior, and working day after the National Holidays defined in the Standard Specifications, Good Friday, and Easter weekend.

No closures will be allowed 1 P.M. to 11 P.M. the Sunday of the Super Bowl.

Time charges will not be suspended during the large and special events listed below. These events are provided in the contract to allow scheduling of work around these lane closure restrictions.

All lanes will be open by noon of the day before the large events listed in below table. No closures will be allowed on Friday and the weekends for projects within 20 miles of these large events:

Table 4 (Large Events)

|  |  |  |
| --- | --- | --- |
| **Event** | **City** | **Dates** |
| Formula 1 @ COTA | Austin | Annually (See Event Website) |
| Moto GP @ COTA  | Austin | Annually (See Event Website) |
| ACL Fest | Austin | Annually (See Event Website) |
| SXSW  | Austin | Annually (See Event Website) |
| ROT Rally | Bastrop | Annually (See Event Website) |
| UT Football Games | Austin | Annually (See Event Website) |
| Sales Tax Holiday | All | Annually (See Event Website) |
| Rodeo Austin | Austin | Annually (See Event Website) |

All lanes will be open by noon of the day before the special events listed in below table. No closures will be allowed on Friday and the weekends for projects within 10 miles of these special events:

(Designer may insert additional events that would be impacted by the project).

Table 5 (Special Events)

|  |  |  |
| --- | --- | --- |
| **Event** | **City** | **Dates** |
| Eaker BBQ Competition | Fredericksburg | March 10, 2024 |
| Sherwood Forest Faire | McDade / Paige | Weekends in March and April |
| Smithville Jamboree | Smithville | April 4-6, 2024 |
| Wiener Dog Races | Buda | April 29-30, 2023 |
| Founders Day Festival | Dripping Springs | April 28-30, 2023 |
| Red Poppy Festival | Georgetown  | April 26-28, 2024 |
| Crawfish Open | Llano | 3rd Friday and Saturday in April |
| Fair and Rodeo | Liberty Hill  | May 18, 2023 |
| Founders Day Ceremony | Fredericksburg | 2nd Weekend in May |
| Crawfish Festival | Fredericksburg | Saturday before Memorial Day |
| Lakefest Boat Races | Marble Falls | June 10-11, 2023 |
| Watermelon Thump | Luling | Last Full Weekend in June |
| Pie in the Sky | Kyle | Sept 1-2, 2023 |
| Wine and Music Festival | Georgetown  | Last Saturday of September |
| Deer Season Opening Weekend | All Counties in Burnet Area Office | 1st Friday and Saturday of Season |
| Christmas Nights of FBG Lights | Fredericksburg | Nov 21, 2023 |
| Christmas on Mercer | Dripping Springs | Dec 2, 2023 |
| Lady of Guadalupe Procession    | Fredericksburg | Dec 12, 2023 |
| Texas State Graduation Fall | San Marcos | TBD |
| Texas State Graduation Spring | San Marcos | TBD |

All the large and special events listed in the above tables occur annually. Coordinate with the Department and review the city/event website to plan around the future events.

To account for directional traffic volumes, begin and end times of closures may be shifted equally by the Engineer.  The closure duration will remain.  Added compensation is not allowed.

One-way traffic control, including work performed under Item 510, must be set up to provide a maximum of 20 minutes of delay to the traveling public.

Submit an emailed request for a lane closure (LCN) to TxDOT. 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.

For roadways listed in Table 1: Submit the request 96 hours prior to implementation.

For roadways not listed in Table 1: 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.

For all roadways: Submit request for traffic detours and full roadway closures 168 hours prior to implementation. Submit request for nighttime work 96 hours to implementation date.

Cancellations of accepted closures (not applicable to full closures or detours) due to weather will not require resubmission in accordance with the above restrictions if the work is completed during the next allowable closure time.

Closures that conflict with adjacent contractor will be prioritized according to critical path work per latest schedule. Conflicting critical path or non-critical work will be approved for first LCN submitted. Denial of a closure due to prioritization or other reasons will not be reason for time suspension, delay, overhead, etc.

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 current and future traffic control, if at any time the queue becomes greater than 20 minutes.

Consider inclement weather prior to implementing the lane closures.  Do not set up traffic control when the pavement is wet.

Cover, relocate, or remove existing small, large, and overhead signs that conflict with traffic control.  Cover large and overhead signs to remain using latest standard TS-CD. This work is subsidiary.

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.

Place a 28-inch cone, meeting requirements of BC (10) and Ty III barricades, on top of foundations that have protruding studs.  This work is subsidiary.

Vertical panels used on roadways with speed limit 55mph or greater must be round in shape or have a self-righting mechanism. The “flat” or “oblong” shaped vertical panels are not allowed.

A series of sequential flashing warning lights, per BC(7), must be installed in a merging taper for long term stationary TCP.  This includes all TCP setups, such as those shown on the plans or TCP setups per the standards.

Edge condition treatment types must be in accordance with the TxDOT standard. Installation and removal of a safety slope is subsidiary.

To determine a speed limit or an advisory speed limit, submit a request to TxDOT 60 business days prior to manufacture of the sign.

For non-site-specific signal projects, 2 months of barricades will be paid per work order location.

The Contractor Force Account “Safety Contingency” that has been established for this project is intended to be utilized for work zone enhancements, to improve the effectiveness of the Traffic Control Plan, that could not be foreseen in the project planning and design stage. These enhancements will be mutually agreed upon by the Engineer and the Contractor’s Responsible Person based on weekly or more frequent traffic management reviews on the project. The Engineer may choose to use existing bid items if it does not slow the implementation of enhancement.

**ITEM 504 - FIELD OFFICE AND LABORATORY**

***(Blind Note: Item 504 note is required for projects that meet one of the conditions below.)***

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 more than 500 CY of structural class concrete, 5000 SY of Class P concrete, and/or 2000 CY of non-structural concrete will include a concrete testing facility. Provide a structure with at least 200 sq. ft. of gross floor area in room 8 ft. high. The structure will include the laboratory equipment and all other related items to perform the contract-controlling test procedures.

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.

***(Blind Note: The Following may be used when approved by DOC.)***

Provide a Type E Field Office structure with at least 400 sq. ft. of gross floor area in room(s) 8 ft. high. The structure will include high speed internet service with WIFI signal, minimum of two desks, four chairs, and a storage cabinet. The cabinet will be lockable and a minimum of 3 ft wide by 2 ft deep by 3 ft high. If a field office is required, a concrete testing facility will be required regardless of quantity of concrete.

**ITEM 506 - TEMPORARY EROSION, SEDIMENTATION, AND ENV CONTROLS**

If SW3P plan sheets are not provided, place the control measures as directed.

Install, maintain, remove control measures in areas of the right of way utilized by the Contractor that are outside the limits of disturbance required for construction.  Permanently stabilize the area.  This work is subsidiary.

Erosion control measures must be initiated immediately in areas where construction activities have ceased and will not resume for a period exceeding 14 calendar days.  Vertical track all exposed soil, stockpiles, and slopes.  Re-track after each rain event or every 14 days, whichever occurs first. Sheep foot roller is allowed for vertical tracking.  This work is subsidiary.

For routine or anticipated dewatering, notify the engineer 72 hours before beginning dewatering. Notify the Engineer within 1 hour of beginning emergency or recent rainfall dewatering. Water located within the ROW that will leave the ROW must appear free of pollutants such as suspended sediment, oil sheen, floating solids, etc.  Dirty water must pass thru adequate BMPs prior to leaving the ROW to prevent discharge of dirty water.  Bypass pumping of water found in a navigable waterway that enters from outside the ROW and is discharged downstream of the ROW will not require the use of BMPs. Dewatering BMPs will be paid for in conformance with the applicable bid items. However, if the necessary BMP item is not included in the Contract, payment for the BMP will be in accordance with Article 9.7., “Payment for Extra Work and Force Account Method.”  The act of dewatering and the equipment used to dewater will not be paid for directly but will be subsidiary to pertinent bid items.

Unless a specific pay item is provided in the plans, the installation of the 6:1 or flatter for RFD side slopes in the safety zone will be subsidiary to pertinent bid items.

Cover small waste containers (100 gallons or less) at all times. This work is subsidiary. Large waste containers (more than 100 gallons) must have a secondary discharge containment system around the container using erosion control logs.  Installation of the log for each container location will be paid using existing bid items.  Repair, remove, or replace of the log will not be paid.  Revisions, repairs, remove or replace of the log during exchange of empty/full containers at the same location will not be paid.

Portable restrooms must be located more than 50 ft. from a waterway. Tie or stake down portable restrooms to prevent tipping due to vandalism or weather.  This work is subsidiary.

Provide a designated location for disposal when excess and waste, including waste generated from cleaning of all equipment used for mixing, hauling, and transfer concrete is disposed in the ROW or PSL.  Manufactured disposal containers must be metal or a plastic material with minimum 10 mil thickness.  Paper, earthen berms, or pits must be lined with minimum 10 mill thickness polyethylene sheeting.  Disposal locations must be located a minimum of 50 ft. from a waterway, tree, or sensitive feature.  The disposal location must have a minimum height of 6 in.  Maintain a minimum 4 in. of freeboard at all times. Disposal locations are not required for cleaning of small hand tools.  Hardened concrete waste may be used as embankment if placed in accordance with Item 132.

**Dust Control**

Stockpiles that will be inactive for greater than 14 days must be treated to contain dust by covering with chemical dust suppressant, soil blanket, vertical tracking, or method other than sprinkling with water.  Stockpiles that are actively being used must be treated to contain dust by vertical tracking or a method determined by the Contractor. This work is subsidiary.

Provide designated construction traffic routes when feasible. Construction site traffic must be directed to use designated routes.

**ITEM 508 – CONSTRUCTING DETOURS**

Detour typical section must match the adjacent roadway section, unless shown on the plans.

Flexible base will be Type A Grade 5 placed using ordinary compaction. Base compressive strengths are waived for roadways not listed in Item 502, Table 1.

**ITEM 512 – PORTABLE TRAFFIC BARRIER**

***(Blind Note: Default is contractor furnish and install PTB; however, it may not be feasible on short duration or small projects.  For these projects, use designated source and reserve the required amount through Dist Const Office 2 months prior to letting.***

***Low profile PTB can only be placed where the actual speed limit is 45mph or less.***

***For use of Single Slope Concrete Barrier you will need to use the Non-Sacrificial type Attenuators/Crash Cushions due to height of barrier.)***

Designated source barrier stockpile locations:  SH 45 just west of US 183 South, SH 130 @ Harold Green, or SH 130 @ Greg Manor Rd.  Upon completion of the project, designated source PTB deemed unsalvageable by the Engineer will become the property of the contractor and paid for removal using Item 104.  Connection hardware is NOT available for designated source, furnish and retain all hardware to install the PTB.

In lieu of a crash cushion, place 25:1 Class C concrete transition where concrete PTB terminates adjacent to existing concrete barrier.  Installation and removal will be paid using existing Item 512 bid items.

If bid item allows concrete or steel, the steel barrier must provide a maximum deflection of 2 ft. 3 in. Pinning and other work to obtain the required deflection is subsidiary.

Any increase in temporary barrier quantities that occur due to Contractor changes in the sequence of work or the traffic control plan will not be paid.

**ITEM 514 – PERMANENT CONCRETE TRAFFIC BARRIER**

Provide a 40:1 transition taper for Type 3. Backfill for Type 3 will be coarse aggregate capped with 4” Class B concrete. Concrete cap is subsidiary.

**ITEMS 528, 529, 530, 531, & 536 – MISCELLANEOUS CONSTRUCTION**

Reinforcement will be in accordance with Section 432.3.1 unless shown on the plans.  Fiber reinforcement is not allowed.  GFRP is allowed reinforcement for all applications. Class A and B Concrete are allowed to use Coarse Aggregate Grades 1-8.

Unless shown on the plans, all concrete will be 5 in. thick and have 2 in. sand, base, or RAP bedding. Furnish base meeting the requirement for any type or grade in accordance with Item 247.  Compressive strengths for flexible base are waived. RAP must be 100% passing a 1 in. sieve.  Bedding and flexible base must be placed using ordinary compaction.

Expansion joints will be placed every 40 ft.  Expansion joints must be 1 in. wide asphalt board and flush with the surface. The bottom of the asphalt board will be at half the depth of the concrete. The reinforcement will be continuous thru the expansion joint.

Sidewalk cross slope must not exceed 1.5%.

If roots are encountered verify with the Engineer before accommodating or removing 2 in. diameter or larger roots. Root removal must be in accordance with Section 752.4.2. Roots may remain in the bedding or base. For improvements within 6 in. of a root, the concrete thickness may be reduced by 1 in. and the bedding increased by 1 in. to minimize impacts to the roots. Adjust bedding and surface profile to provide a 1 in. bedding cushion around the roots. The surface profile may be adjusted to the extent allowed by ADA. This work is subsidiary.

**ITEM 528 - COLORED TEXTURED CONCRETE AND LANDSCAPE PAVERS**

Concrete and pavers will use a 90° herringbone pattern with 8 in. x 4 in. Pavestone Holland series or equivalent with adjacent sidewalks banded with a soldier course unless otherwise shown on the plans. Concrete or pavers will be terra cotta finish. Concrete will have an antique finish attained by application of Scofield Lithochrome color hardener A-29 and A-57 as the release agent or equivalent. Seal concrete with a clear sealer provided by the color manufacturer. Paver joint-filling sand will be tan colored polymeric sand. Do not use expansion joint material between pavers and adjacent concrete.

**ITEM 530 – INTERSECTIONS, DRIVEWAYS, AND TURNOUTS**

Notify property owners at least 48 hr. before beginning work on their driveway. Use a means and methods to construct the driveway while maintaining access to the property at all times. Full closure of a driveway is allowed for reconstruction if duration and alternate access are approved by Engineer. Install and maintain material across a work zone as temporary access. This work is subsidiary.

The following typical section notes apply to all driveways and turnouts:

For ACP or SURF TREAT, the pavement structure will match the adjacent roadway unless detailed on the plans. HMA, including surface, may use a maximum allowable quantity of 40% RAP and 5% RAS for private driveways, public driveways for 2-lane roadways or smaller, and turnouts. Blending of 2 or more sources is allowed.

For CONC, the pavement structure will be 6 in. thick and have 3 in. flexible base bedding unless detailed on the plans.

Driveways that are public (county road and city street) the pavement structure will match the adjacent roadway.

**ITEM 533 – MILLED RUMBLE STRIPS**

If surface is a seal coat, rumble strips shall be installed prior to placing the seal coat.

For edge line rumble strips: Use Option 1 for shoulder width equal to or less than 2 ft. Use Option 3 for shoulder width greater than 2 ft. but less than 4 ft. Use Option 4 for shoulder width equal to or greater than 4 ft.

**ITEM 538 – RIGHT OF WAY MARKERS**

***(Blind Note: Use when ROW Markers are required to be installed by the Contractor.)***

Place order through the Engineer for Right of Way (ROW) markers at least two weeks prior to installing ROW markers to insure available stock at the Department Warehouse.

**ITEMS 540, 542, & 544 - METAL BEAM GUARD FENCE AND GUARDRAIL END TREATMENTS**

Furnish round timber posts for guard fence.  Steel posts for low fill culvert applications is subsidiary including use of low fill culvert application due to other concrete structures such as inlets.  Long span application at inlets may be used as an alternate to low fill culvert.  Unless otherwise specified on the plans, use of low fill culvert or long span at inlets will be subsidiary to pertinent items.  Stake the locations for approval before installation.  Adjust the limits of the fence to meet field conditions.   Install delineators before opening the road to traffic.

Retain all materials. Existing materials that are structurally sound and dent free may be reused.  All reused material will be from this project and in compliance with current standards. Structurally sound rust spots with the largest dimension of 4 in. may be cleaned and repaired in accordance with Section 540.3.5.  Punch or field drill holes in the metal rail element to accommodate post spacing.  Additional holes for splice or connections are not allowed. Space the field holes in accordance with the latest standard but no closer than the minimum spacing shown on the current standard.

Remove, replace, and install mow strip block out material.  Construct new block outs and backfill unused block outs with class B concrete. This work is subsidiary.

Repair of mow strip damage, not caused by contractor negligence, and installation of new mow strip will be paid with appropriate bid items.  Backfill and shoulder up of area around fence and mow strip will be paid using embankment item.

**ITEM 543 – CABLE BARRIER SYSTEM**

Before installation stake end terminal locations for approval. Changes to the location may be necessary to accommodate slopes or other obstructions in the field. This work is subsidiary.

Retain all materials. Existing materials that are structurally sound may be reused. All reused material must be from this project and in compliance with current standards.

Revise cross slopes as necessary to provide a slope in compliance with the barrier standard. Reuse of excavated material from installation of the barrier and mow strip is subsidiary.  Use of additional material will be paid using embankment.

Delineators must be GF2 or CAB3 style per D & OM standard with a delineator post and support color that matches the color of the reflector.

**ITEM 545 - CRASH CUSHION ATTENUATORS**

Use a coring machine or saw cut to remove the mounting hardware/bolts from the existing pavement.  Cutting the hardware flush with the surface is not allowed.  Refill voids in accordance with the pavement specification.  This work is subsidiary.

Install and maintain three 42 in. cones, vertical panels, or plastic drums in advance of the attenuator. Place at spacing per channelizing devices on BC (9).  This work is subsidiary.

**ITEM 556 – PIPE UNDERDRAINS**

***(Blind Note: Provide a pay item for pipe underdrains in the Retaining Wall Areas.)***

**ITEM 560 – MAILBOX ASSEMBLIES**

All wedge anchor sockets must be set in a concrete foundation per Type 4 support/foundation detail on MB standards.

**ITEM 585 - RIDE QUALITY FOR PAVEMENT SURFACES**

***(See Designers Guide for guide to selecting pay schedule. Default is schedule 3.)***

Use Surface Test Type B Pay Schedule ?? to evaluate ride quality of travel lanes, including service roads.

**ITEMS 600s & 6000s – ITS, TOLLING, LIGHTING, SIGNING, MARKINGS, AND SIGNALS**

***(Blind Note: Include these notes when 600 or 6000 Items are used.)***

Meet the requirements of the NEC, Texas MUTCD, TxDOT standards, and TxDOT Standard Specifications. Notify the Engineer if existing elements to remain do not meet code or specification.

Provide all service, equipment and material required to provide a functional item and interface with existing equipment and software.

For signals and illumination contact Robert Bolin (Robert.Bolin@txdot.gov) and Kevin Plumlee (Kevin.Plumlee@txdot.gov).

For ITS contact Doug Turner (Douglas.L.Turner@txdot.gov) and Kevin Plumlee (Kevin.Plumlee@txdot.gov).

Use the TxDOT provided form to submit an electrical, illumination, and signal checklist prior to request for signal activation or a punch list.

Provide a 14-day advance email notice to the Engineer to request illumination or traffic signal punch list inspection.

All items must be completed per the plans prior to traffic signal activation including deficiencies found in the punch list.

Provide a 14-day advance notice prior to planned traffic signal activation. Send notice by email to Kevin.Plumlee@txdot.gov, Robert.Bolin@txdot.gov, Rick.Thomas@txdot.gov, Gabriela.Perales@txdot.gov, and the Project Engineer.

The contractor must have a qualified technician and a representative from the controller and detection supplier on the project site to place the traffic signals in operation.

For existing traffic signals, provide a 14-day advance email notice to the Engineer with Contractor signal technician contact information and signal locations prior to working or assuming operations of illumination or traffic signal.

Provide a 60-day advance email notice to the Engineer to request signal timing if timing is not provided in the plans.

Provide a 180-day advance email notice to the Engineer for equipment to be provided by TxDOT.

Provide equipment that requires TxDOT programming, etc. to TxDOT 180 days in advance.

Prior to relief of maintenance, a 30-day Test Period is required for signals and ITS equipment in accordance with Item 680.3.1.8. Response time to reported trouble calls shall be less than 2 hours.

Complete repairs within 24 hours. Notify the Engineer and maintain a logbook in the controller cabinet of each trouble call. Do not clear the error log in the conflict monitor without approval.

Maintain the existing ITS equipment and keep HUB buildings operational during construction. ITS downtime is allowed from 12A to 4A and must be approved in advance by the Engineer. Submit the request 7 days prior to planned outage. Downtime is restricted to one time per HUB or equipment.

Definitions of abbreviations used to designate ITS equipment, material, etc. can be provided by the Engineer.

Provide email notice to TxDOT and toll road owner 60 business days prior to begin work that impacts tolling equipment. Attend a pre-construction meeting with TxDOT and toll road owner prior to begin work.

Coordinate with toll road owner during construction that impacts or installs tolling equipment. Toll owner will assist with inspection to ensure tolling equipment will operate correctly. Provide email notice to TxDOT and toll road owner 30 business days in advance of completion of toll equipment work. Once toll equipment work is complete, allow 60 calendar days for toll road owner to complete their portion of the work and testing.

Stakes or other physical method shall be installed to hold down conduit prior to placement of concrete/flow fill encasement.

Minimum distance between HDPE joints will be 200 ft.

For conduit mounted to bridges in hangers, fiberglass can be substituted for RMC only when the height between the conduit and ground is greater than 8 feet. Furnish and install per Special Specification 6390.

**ITEM 610 - ROADWAY ILLUMINATION ASSEMBLIES**

Upon removal, contact signal shop to stockpile a maximum of 10 assemblies that meet the current TxDOT standards at the Austin District Headquarters located at 7901 North IH 35, 78753. If signal shop declines receipt of these assemblies, Contractor will be responsible for disposal.

For each assembly, paint the service, circuit, run and assembly number/letter using 3 in. tall characters and black paint. The marking shall be stacked vertically with the service on top and the assembly number/letter on the bottom. Paint 6 ft. above the roadway surface on the hand access door side of the pole or adjacent to the assembly if mounted to a structure. This work is subsidiary.

For both transformer and shoe-base type illumination poles, provide double-pole breakaway fuse holder.

Provide 10-amp time delay fuses.

Maintain all new and existing illumination for the duration of the contract. All existing illumination will remain operational until replaced by new illumination or required to be removed due to construction.

**ITEM 618 - CONDUIT**

Shift the locations of conduit and ground boxes to accommodate field conditions.  Install conduit not exceeding 2 feet in any direction from a straight line.  Install conduit at a minimum depth of 2 ft. below finished grade.  Installation of the conduit by jacking or boring method will be at a depth of at least 1 ft. below subgrade.

Install a high tension, non-metallic pull rope in all empty conduit runs.  This work is subsidiary.

Use a coring device, not a hammer drill, when drilling holes through concrete structures.

Structurally mounted junction boxes will be as shown on the plans.  When used for traffic signal installations, these boxes will be 12" x 12" x 8".  This work is subsidiary.

For underground conduit, smooth wall schedule 40 equivalent HDPE can be substituted for schedule 40 PVC.  Schedule 80 bore can be replaced with a schedule 40 equivalent HDPE carrier pipe of adequate size to carry the proposed conduits.  HDPE must transition to RMC/PVC per ED (11)-14.

When using existing conduit, ensure that all conduits have bushings and cleaned of dirt, mud, grease, and other debris.  Re-strap existing or relocated conduit per the specification.  This work is subsidiary.

Abandoned underground conduit must have all conductors removed.

**ITEM 620 - ELECTRICAL CONDUCTORS**

Provide 10-amp time delay fuses.

For Flashing Beacons (Item 685) and Pedestal Poles (Item 687), provide single-pole breakaway disconnects.

Install a minimum size 8 AWG equipment grounding conductor (EGC) in all conduits including loop detectors and traffic signal cables. Payment and the size of the EGC will be in accordance with standard ED (3)-14 note 12.

Permanently mark “Illumination” on the luminaire conductors installed inside a traffic signal pole. Make the marks easily visible from the hand hole.

**ITEM 624 – GROUND BOXES**

Aggregate for fill under the box will be crushed, have a maximum size of 2 in., minimum size of ½ in., and requirements per Item 302 are waived.

**ITEM 628 – ELECTRICAL SERVICES**

Contact the utility company upon execution of contract and prior to the pre-construction meeting to make arrangements for all work and materials provided by the utility company.  Contact AUS\_Auditors@txdot.gov for account approval and information.  Accounts shall be placed in the name of TxDOT.

**ITEM 644 – SMALL ROADSIDE SIGN ASSEMBLIES**

Triangular slip base must be the clamp style to secure the post to the slip base.  Set screw style slip base will not be allowed.

**ITEM 650 - OVERHEAD SIGN SUPPORTS**

Use lengths of trusses, tower heights, and posts shown in the summaries for bidding purposes only.

Verify these dimensions and vertical clearances prior to shop drawing production.

**ITEM 658 – DELINEATOR AND OBJECT MARKER ASSEMBLIES**

All delineator post and supports, excluding metal components, must be manufactured in the same color that matches the color of the reflector.  Field painting is not allowed.

Flexible posts YFLX and WFLX must be tubular in shape. The “flat” flexible posts are not allowed.

Installation and maintenance of portable CTB reflectors will be subsidiary to the barrier.

CTB delineators must be placed on top of the CTB.

**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.

Roadways with existing profile pavement markings or rumble strips must supplement work zone solid lines with traffic buttons spaced at 12 in.  Traffic buttons used to supplement the work zone markings will be paid by the each in addition to the work zone item.

**ITEM 666 - RETROREFLECTORIZED PAVEMENT MARKINGS**

Notify the Engineer at least 24 hr. before beginning work.

All projects, including resurfacing, must increase center-to-center width for center line markings to 18 in. unless the plans or existing is greater than 18 in.

Place longitudinal markings nightly for IH 35 main lanes or roadways with AADT greater than 100,000. Use of temporary flexible reflective roadway marker tabs is subsidiary and at the Contractor’s option. Replace missing or damaged tabs nightly. If using tabs, place longitudinal markings weekly by 5 AM Friday for all weekday work and by 5 AM Monday for all weekend work. Failure to maintain tabs or place longitudinal markings by deadline will require nightly placement of longitudinal markings.

Place longitudinal markings no later than 7 calendar days after placement of the surface for roadways with AADT greater than 20,000.

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.

When using black shadow to cover existing stripe apply a non-retroreflective angular abrasive bead drop. The marking color shall be adjusted to resemble the pavement color. If Item 677 is not used prior to placement of black shadow, scrape the top of the marking with a blade or large piece of equipment unless surface is a seal coat. The scraping of the marking is subsidiary.

**ITEM 672 – RAISED PAVEMENT MARKERS**

***(Blind Note: Include the following 40’ spacing when required per the AUS Dist Project Development Manual.)***

Place Type I-C and II-C-R markers at 40 ft. spacing for all lane lines.

**ITEM 677 - ELIMINATING EXISTING PAVEMENT MARKINGS AND MARKERS**

Dispose of removed materials and debris at locations off the right of way.

Elimination using a pavement marking will not be allowed in lieu of methods listed in specification.

Remove pavement markings on concrete surfaces by a blasting method. Flail milling will be allowed when total quantity of removal on concrete surfaces is less than 1000 ft.

Strip seal is only method allowed on seal coat surface unless project includes placement of a new surface. If total quantity of removal on a seal coat surface is less than 2000 ft., elimination using a pavement marking is allowed if a test section is approved by the Engineer. Test section shall demonstrate the thermo marking color matches the existing pavement color.

Remove pavement markings outside the limits of the new surface by a blasting method.

Use a TRAIL or a non-retroreflective paint to cover stripe remnants that remain after elimination.

The test requirements for these materials are waived. The paint color shall be adjusted to resemble the existing pavement color. Installation and maintenance is subsidiary.

**ITEM 680 - HIGHWAY TRAFFIC SIGNALS**

For traffic signal head installation use Austin District MAD-14 detail.

Testing is required for all traffic signal cabinets including when the plans specify a signal cabinet to be used as an overhead flashing beacon cabinet.

Provide a minimum of 48 working hour’s notice prior to dropping off a cabinet.  Notice should be sent by email to Robert.Bolin@txdot.gov, Rick.Thomas@txdot.gov, and the TxDOT engineer.  The signal plan sheets must be included in the email.

After providing the required notice, deliveries are accepted Monday through Thursday 6:30am to 5:00pm.  Delivery address is 7901 N IH 35 Austin, Tx 78753.  All cabinet components (other than detection) must be included in the delivery.

The signal shop will complete testing within 72 hours and provide notice of the test results.

Provide a minimum of 48 working hours’ notice prior to picking up a cabinet.  Upon pickup the contractor will be provided documentation that the cabinet passed inspection.

Luminaire arms shall be aligned with the signal head support. If multiple signal head supports, the luminaire arm shall be aligned with the support over the higher volume roadway.

All signal head housing components must be aluminum. Polycarbonate is not permitted.

Install 250W EQ LED illumination fixtures as shown in the plans. Test in accordance with Item 616. This work is subsidiary.

Furnish all materials and install signs mounted on the traffic signal wire, traffic signal poles, mast arms, and pedestal pole assemblies. Remove all conflicting signs and sign foundations when signal is placed into operation. This work is subsidiary.

Use a Vulcan swinger sign mounting bracket or equivalent for all signs mounted on span wires.

Upon removal of existing signal, illumination, and ITS components, contact the signal shop to deliver materials to the Austin District Headquarters located at 7901 North IH 35, 78753. If signal shop declines receipt of material, Contractor will be responsible for disposal.

All signal poles/arms will be stripped of heads, signs, brackets, wire, and banding and must include all hardware including nuts and bolts. Contact signal shop 48 hours before delivery. Deliveries are only accepted Monday thru Thursday between 6:30am and 5:00pm. The Contractor must supply equipment to unload poles/arms at the TxDOT facility.

For city operated signals, the city may assist in determining how the detector loop lead-in cables are to be connected, and will also program the controller for operation, the video detection, hook up the conflict monitor, detector units and other equipment, and turn on the controller.

If shown on the plans, install the Emergency Response Detection equipment supplied by the City.

**ITEM 681 - TEMPORARY TRAFFIC SIGNALS**

The scope of this contract will include modifications of existing signal systems as required to support the traffic control plan at the following locations: ***List locations.***

***(Blind Note: If maintained by others during construction, such as City of Austin, add a general note and contact information.)***

Maintain 18 ft. vertical clearance. Place signal heads in accordance with the latest version of the TMUTCD.

Operate and maintain all signals within the project limits as shown on the plans, to commence when the signal system or roadway capacity is affected, or within 30 days after the start of work, whichever comes first.

Provide all items for temporary traffic signal including temporary controller and Video Imaging Vehicle Detection System (VIVDS) equipment. Controller will be an eight-phased NEMA controller. Controller cabinet will meet all the requirements of DMS-11170. Have a qualified technician and a representative from the controller supplier on the project site to place the traffic signal in operation.

Adjust or relocate video detection and signal heads as required by project phasing or as directed. This work is subsidiary.

Response time to reported trouble calls will be less than 2 hours. Make appropriate repairs within 24 hours. Place a logbook in the controller cabinet and keep a record of each trouble call reported. Notify the Engineer of each trouble call. Do not clear the error log in the conflict monitor without approval.

Furnish all sign materials and install signs mounted on the traffic signal wire, traffic signal poles, mast arms, and pedestal pole assemblies. This work is subsidiary.

If intersection illumination is not shown on the plans, install 2 temporary illumination fixtures (250W equivalent LED) per intersection.  This work is subsidiary.

**ITEM 682 – VEHICLE AND PEDESTRIAN SIGNAL HEADS**

Install signal head attachments so the wiring to each passes from the signal pole through the attachment hardware to the signal head. Use UV rated tie wraps.

Traffic signal heads will be aluminum unless otherwise shown on the plans. Back plates will be black aluminum with reflective borders.

Provide louvers, which have five vanes with a black finish on inside surfaces when required.

Fasten a hardware cloth screen, securely, with **⅝**" or smaller mesh size to the front face of each louver to prevent bird nesting.

Use the four-point mounting system (TY A) for signal heads, except in cases of skewed or vertical heads when (TY B) will be used.

**ITEM 684 – TRAFFIC SIGNAL CABLES**

For Type A cables, cables meeting the requirements of IMSA 19-1 can be substituted for IMSA 20-1. For all types of cables, an increase of one size larger wire diameter and thickness can be substituted for plan size without additional cost to the Department. For example, 12 AWG can be substituted for 14 AWG.

For each cable run, coil an extra 2 ft. of cable in each steel pole and 5 ft. in the controller cabinet.

Provide a separate multi-conductor signal cable (14 AWG) inside pedestal poles and mast-arm signal poles from the terminal strip to each signal head as shown on the plans.

**ITEM 685 – ROADSIDE FLASHING BEACON ASSEMBLIES**

Installation includes all components in the assembly, signs, signal heads, and conductors in the foundation and within 6 in. of the foundation to provide a fully operational assembly.

Test period for the assembly shall be in accordance with item 680.3.1.8.

**ITEM 686 - TRAFFIC SIGNAL POLE ASSEMBLIES (STEEL)**

Provide and install damping plates on all mast arms 40 ft. or greater. For mast arms less than 40 ft., refer to SMA and DMA vibration notes for guidance. This work is subsidiary.

When luminaires are installed on mast arm poles, install a separate terminal strip in the signal pole access compartment. Provide a 10-amp time-delay fuse for traffic signal poles with luminaires.

**ITEM 687 – PEDESTAL POLE ASSEMBLIES**

Verify the required pole height prior to ordering material.

**ITEM 688 - PEDESTRIAN DETECTORS AND VEHICLE LOOP DETECTORS**

Test all loops in accordance with the FHWA loop detector handbook.

Install vehicle loops prior to placement of roadway surface.

For work within the city limits of Austin, notify COA (512) 974-4099 and TxDOT 21 days prior to loop installation. Install quadrapole layout for presence detectors within city limits of Austin.

For replacement of existing loops, replacement of damaged or missing conduit from the vehicle loop detector to the ground box will be measured and paid by overrun of loop detector bid item.

Removal of damaged ground boxes at end of lead in cable is subsidiary to the new ground box.

Test period for the pedestrian detectors shall be in accordance with item 680.3.1.8.

Pedestrian push buttons will be mounted at 42 in. above the walking surface and have permanent type signs within the detector unit (9 in. x 12 in. sign and push button station on signal poles and 5 in. x 7 in. sign and push button station on pedestrian poles), which explains their purpose and indicates which crosswalk signal is actuated. Provide speech walk message as shown in the plans or per Engineer.

**ITEM 730 – ROADSIDE MOWING**

Perform roadside mowing along the Roadway for the length of the project, as directed.

Complete spot mowing, as directed.

**ITEM 734 - LITTER REMOVAL**

Complete Litter Removal Cycles along the Roadway for the length of the project, as directed.

Complete Litter Removal Cycles prior to any mowing cycles.

Remove all litter on the right of way, within project limits.

**ITEM 738 – CLEANING AND SWEEPING HIGHWAYS**

Complete cleaning and sweeping cycles at the intervals, as directed. Complete one cycle at the end of construction and prior to final acceptance by the Department.

**ITEM 752 – TREE AND BRUSH REMOVAL**

***(Blind Note: Required for all projects that include Item 100.)***

Follow Item 752.4 Work Methods and Item 752 general notes when removing or working on or near trees and brush even if Item 752 is not included as a pay item.

Flailing equipment is not allowed. Burning brush is not allowed in urban areas or on ROW. Use hand methods or other means of removal if doing work by mechanical methods is impractical.

Prior to begin tree pruning, send email confirmation to the Engineer that training and demonstration of work methods has been provided to the employees. This work is subsidiary.

Shredded vegetation may be blended, at a rate not to exceed 15 percent by volume, with Item 160 if the maximum dimension is not greater than 2 in.

**ITEM 3084 – BONDING COURSE**

The minimum application rates are listed in Table BC. Miscellaneous Tack is allowed for use with dense-graded Type B HMA. If a tack bid item is not provided, use bonding course item.

The target shear bond strengths are listed in Table BCS. The informational test cores shall be taken once a shift for first 5 lots of placement or a change to placement method of bonding course, bonding material, or hot mix material. The remaining informational test cores shall be taken once every 3 lots for surface mix. Informational tests are not required for non-surface mix beyond the first 5 lots unless there is a change to placement method of bonding course, bonding material, or hot mix material. Results from these informational tests will not be used for specification compliance.

Table BC

|  |  |
| --- | --- |
| Material | Minimum Application Rate(gal. per square yard) |
| TRAIL – Emulsified Asphalt | 0.06 |
| TRAIL – Hot Asphalt | 0.12 |
| Spray Applied Underseal Membrane | 0.10 |
|  |
|  |

Table BCS (For Informational Tests)

|  |  |
| --- | --- |
| Material | Target Shear Bond Strength(Tex-249-F psi) |
| SMA – Stone-Matrix Asphalt | 60.0 |
| PFC – Permeable Friction Course | N/A |
| All Other Materials | 40.0 |
|  |  |
|  |

**ITEM 3085 – UNDERSEAL COURSE**

No emulsified asphalt material allowed under PFC or SMA, except for use with Item 316, on roadways with ADT greater than 100,000.

The minimum application rates are listed in Table UC. The target shear bond strengths are listed in Table UCS. The informational test cores shall be taken once a shift for first 5 lots of placement or a change to placement method of bonding course, bonding material, or hot mix material. The remaining informational test cores shall be taken once every 3 lots for surface mix.  Informational tests are not required for non-surface mix beyond the first 5 lots unless there is a change to placement method of bonding course, bonding material, or hot mix material.  Results from these informational tests will not be used for specification compliance.

Table UC

|  |  |  |
| --- | --- | --- |
| Material | Minimum Application Rate(mat >1” gal. per square yard) | Minimum Application Rate(mat <= 1” gal. per square yard) |
| TRAIL – Hot Asphalt | 0.15 | 0.10 |
| Spray Applied Underseal Membrane | 0.15 | 0.15 |
| Seal Coat – Tier II emulsion | 0.25 | 0.25 |
| Seal Coat – Tier II asphalt | 0.23 | 0.23 |

Table UCS

|  |  |
| --- | --- |
| Material | Minimum Shear Strength(psi) |
| SMA – Stone-Matrix Asphalt | 60.0 |
| PFC – Permeable Friction Course | 40.0 |
| All Other Materials | 40.0 |

**ITEM 3094 – POLYMERIC COMPOSITE PAVING GEOGRID FOR ASPHALT PAVEMENT OVERLAY REINFORCEMENT**

In addition to tack coat materials listed in the spec, Item 300 material that is hot-applied AC from Table 3; PG 64-22; or hot asphalt TRAIL material may be furnished. Emulsions will not be allowed.

Do not apply tack coat on top of geogrid.

In lieu of 5 projects in 3 years, the installer may provide a minimum of 250,000 SY of installation within the past 3 years.

**ITEM 6000s – ITS**

Coordinate with the Department at least 120 hours (5 days) in advance of interrupting existing Department ITS communication devices that will result in the elements being non-operational or offline. Network downtime may be no more than 4 hours and may only be scheduled for the weekend between the hours of 10:00 PM and 5:00 AM on Saturday and Sunday. The schedule must be coordinated and approved by the Department. If more than 4 hours of downtime is needed, use alternative communication routes via wireless communication or temporary duct bank. Refer to table below for contact information.

|  |  |  |
| --- | --- | --- |
| Name | Organization | Email |
| Douglas Turner | TxDOT | Douglas.L.Turner@txdot.gov  |
| Kevin Plumlee | TxDOT | Kevin.Plumlee@txdot.gov  |

Every effort must be made to protect the duct bank during construction. Repair or replace any damages to the duct bank/cable/conduit caused by the Contractor to its original condition at no additional cost to the Department. Failure of the Contractor to repair damage to any infrastructure that conveys any corridor information to TxDOT/CTECC will result in the Contractor being billed for the full cost of emergency repairs.

 Acceptable response time for repair of communication trunklines:

* Major or backbone fiber optic cables, radios, and/or power supply.
	+ Four hours.
* Minor fiber optic cables (CCTV, DMS, & RVSD).
	+ Twelve hours.

Protect and preserve the existing Department infrastructure not affected by the construction.

**ITEM 6001 – PORTABLE CHANGEABLE MESSAGE SIGN**

***(Blind Note: Designer adjust qty based on project need. This item shall NOT be subsidiary.)***

Provide 1 PCMS. Provide a replacement within 12 hours. PCMS will be available for traffic control, event notices, roadway conditions, service announcements, etc.

Place PCMS 10 calendar days prior to begin work stating “Road Work Begin Soon, Contact 832-7000 For Info”.

Place PCMS at time of LCN request. Place the PCMS at the expected end of queue caused by the closure. When the closure is active, revise the message to reflect the actual condition during the closure, such as “RIGHT LN CLOSED XXX FT”.

**ITEM 6010 - CCTV FIELD EQUIPMENT**

Include all incidental work, material, and services not expressly called for in the specifications, or not shown on the plans, which may be necessary for a complete and properly functioning system. This work is subsidiary.

Provide one each of CCTV camera, lens, housing, pan/tilt, controller, and any necessary cables and incidentals necessary to produce a usable video image in conjunction with the acceptance inspection for special specification Item 6064 "ITS Pole with Cabinet". Furnish material identical to those supplied for this project, conforming to the plans and specifications, and becoming the property of the State. This work is subsidiary.

**ITEM 6016 – MULTI-DUCT CONDUIT SYSTEM**

Concrete or flowable fill encasement is not required unless stated in bid item code.

In addition to PVC multi duct acceptable per the specification, HDPE from the pre-qualified Item 618 material list may be used by installing a 4 in. duct and field pull in 4-1 in. smooth wall innerducts.  Blue Diamond 4 in. SIDR 11.5 casing with 4-1 in. SDR 13.5 innerducts is an acceptable substitute for PVC multi duct.

**ITEM 6054 - SPREAD SPECTRUM RADIOS FOR TRAFFIC SIGNALS**

Connect antenna to Pole ***(Blind Note: Insert pole identifier from plans.)*** ?? as directed by the Engineer. Install the coaxial cable in a continuous run from the antenna to the radio in the controller cabinet with no cable exposed.

Provide the latest version of the applicable SSR diagnostic software to the Department.

Provide training per the special specification.

**ITEM 6056 – PREFORMED IN-LANE/CENTERLINE RUMBLE STRIPS**

For centerline applications, use option 3 for all roadways without profile markings.

For centerline applications, use option 4 for all roadways with profile markings.

For edgeline applications, use option 7 unless option 8 required due to shoulder width.

**ITEM 6064 – ITS POLE WITH CABINET**

Furnish cabinet containing a fiber optic communication interface panel accommodating 12 single mode fibers.

**ITEM 6140 – WORK ZONE INTELLIGENT TRANSPORTATION SYSTEM (WZITS)**

***(Blind Note: Adjust Item # to match actual spec #. 6140 is currently OTU.)***

The system will be provided for the duration of construction. Placement of the system shall be approved by the Engineer. Relocate the system during construction to maintain the surveillance of the roadway, relocation is subsidiary.

**ITEM 6185 – TRUCK MOUNTED ATTENUATOR AND TRAILER ATTENUATOR**

The TMA/TA used for installation/removal of traffic control for a work area will be subsidiary to the TMA/TA used to perform the work.

The contractor will be responsible for determining if one or more operations will be ongoing at the same time to determine the total number of TMA/TA required for the work. TMA/TAs paid by the day is full compensation for all worksite locations during an entire day.

TMA/TAs used to protect damaged attenuators will be paid by the day using the force account item for the repair.

***(Blind Note: Below note is required when additional TMAs are requested as allowed in TCP sheet general notes or per the design engineer.)***

In addition to the TMA/TA required per the TCP plans and standards, provide ?? additional TMA/TA for ??describe work or TCP??.

**ITEM 6292 – RADAR VEHICLE DETECTION SYSTEM (RVDS) FOR SIGNALIZED INTERSECTION CONTROL**

Provide and install Radar Vehicle Detection System (RVDS) and communication cable as directed by the Engineer. Place the radar detector communication cable in continuous and separate runs from each RVDS to the controller. For each cable terminating at the controller cabinet, provide an extra 5-ft length when installing the cable into the controller. Provide a Serial to Ethernet convertor for each RVDS system. Consider the costs associated with the above work subsidiary to the pertinent Items.

Install the RVDS detection zones as directed. Have qualified personnel on site at the time of the signal turn-on to assist with the installation of detection zones.

Provide a set-up system. Load required set-up software for up to 15 of the District Signal Shop’s computers and provide all necessary licensing or provide two setups (or upload/download) devices per contract.

If the RVDS locations shown in the plans do not allow for proper sight of the proposed detection zones, relocate the devices as needed and as directed. This labor and material cost will not be paid separately but is subsidiary to this Item.

**ITEM 6302 – TEMPORARY QUEUE DETECTION SYSTEM**

The equipment shall be removed upon completion of the lane closure except for a PCMS used for other purposes. Nighttime lane closure that spans one day to the next will be measured as 1 calendar day. Lane closures with use longer than 24 hr. period will be measured by each 24 hr. period or any portion the unit is operational.

**ITEM 6306 - VIDEO IMAGING VEHICLE DETECTION SYSTEM (VIVDS)**

Install the VIVDS cameras onto the mast arms with the attachment mechanisms provided with the camera system. Install the VIVDS detection zones as directed. Have qualified personnel on site at the time of the signal turn-on to assist with the installation of detection zones. If the camera locations shown in the plans do not allow for proper sight of the proposed detection zones, relocate the cameras as needed and as directed. Place the traffic signal cable (TY A) (3-conductor) (16 AWG) in continuous and separate runs from each VIVDS camera to the controller. This work is subsidiary.

Aim and adjust the cameras, install the cables and VIVDS cards into the controller cabinet and complete any other necessary work to bring the traffic signal into operation.

Provide a Video Processor System (VPS) that can provide up to thirty-two detector outputs to the controller from up to eight camera/video processor units (C/VPU). Route the detector outputs through the Bus Interface Unit (BIU) or approved product, which replaces the functions of the BIU. Field of view for each C/VPU will provide a minimum of thirty-two virtual detection zones for vehicle detection.

Install all cables necessary to provide complete VIVDS operation. Provide a minimum of 10 cables to direct connect the notebook to the VIVDS port.

Phase red and green load switch outputs from up to sixteen phases of a NEMA TS2 Type 2 controller will be provided as inputs to the VPU for use with internal detector extend/delay timing functions. The C/VPU will be able to condition the detector outputs and detection zones based on the state of the associated phase number and color.

The serial communication port on the front of the VPU will be a DB-9 RS-232 connector. Supply a package that will operate with Windows XP and NT and provide the functionality defined in both sections 7.0 and 8.0 in both a direct connect and remote communications mode. The software resident in the VPU and the personal computer will be capable of transmitting and receiving all information needed for zone set up, monitoring vehicle detection by viewing flashing detection zone overlays, and uploading/downloading and interrogating all stored data within the VPU. Remote communications with the VCU will be possible with the addition of external communication devices (modem, Codec, etc.) using the RS-232 and video output ports on the front of the VPU.

The VPU operational software will be stored internally in flash memory and be capable of being updated without the removal and replacement of memory devices.

All surge protection will be din rail mounted.

**ITEM 6309 – TEMPORARY CONSTRUCTION EQUIPMENT ALERT SYSTEM**

***(Blind Note: A detail plan sheet/District standard to accompany this note is under development.)***

Install one system in each direction of traffic. System to be used when equipment, including trucks and material providers, are exiting from the work zone to enter the main lanes. A single system must be able to detect equipment leaving the work zone for all exit locations within the work zone. Warning signs must be placed at each exit. Place a minimum of 2 warning signs per system. Place a minimum of 2 warning signs per exit. Relocation of the equipment to adjust to change in exit locations is subsidiary.

**ITEM 6306 - VIDEO IMAGING VEHICLE DETECTION SYSTEM**

Required Items:

Spec. Not State

Item Description Required Required Supplied

2.6 REMOTE COMMUNICATIONS LINK **X**

5.0 VIVDS PROCESSOR UNIT **1**

6.0 CAMERA ASSEMBLY **X**

7.0 FIELD COMMUNICATION LINK

 6 Twisted-Pair Cable / 18 AWG **X**

 Coaxial Cable w/Three (3) 16 AWG CNDRS **X**

 Fiber Optic Cable **X**

8.0 VIVDS SET-UP SYSTEM

 Field PC **X**

 Field Software for District Shop laptops **X**

 Field Video Monitor /Ea. Inter. **X**

9.0 TEMPORARY USE AND RETESTING **X**

10.0 OPERATION FROM CENTRAL CONTROLLER

 Workstation Computer & Peripherals **X**

 Central Control Software **X**

11.0 INSTALLATION AND TRAINING

 Eight (8) Hours  **X**

 Sixteen (16) Hours **X**

**ITEM 680 - HIGHWAY TRAFFIC SIGNALS**

The list of material below is for the Contractor’s information only and is subsidiary. It is the responsibility of the Contractor to verify all items and quantities listed below.

 DESCRIPTION UNIT QUANTITY

40 FT TIMBER POLE (CLASS 2) EA X

8 FT LUMINAIRE ARM EA X

CABLE STRAPS EA X

**⅜"** ZINC-COATED STRANDED STEEL CABLE LF X

**¼"** ZINC-COATED STRANDED STEEL CABLE LF X

GROUND ANCHORS EA X

YELLOW PLASTIC GUY GUARD EA X

DOUBLE EYE ANCHOR ROD EA X

**⅝"** X 8**'** COPPERCLAD GROUND ROD W/CLAMP EA X

1 INCH RM CONDUIT (PHONE LINE) LF X

1½" WEATHERHEAD EA X

2 INCH WEATHERHEAD EA X

3 INCH WEATHERHEAD EA X

250W HPS LUMINAIRE EA X

8 PHASE NEMA CONTROLLER COMPLETE W/ EA X

 CABINET AND ACCESSORIES

ON-STREET ARTERIAL MASTER CONTROLLER UNIT EA X

2-CHANNEL DETECTOR CARDS EA X

INSTALL OPTICOM EQUIPMENT (INTERSECTION) LS X

INTERSECTION DISPLAY BOARD EA X

DIAL-UP COMMUNICATIONS MODEM/PHONE LINE EA X

REGULATORY SIGN PANEL (R10-12, ETC) EA X

SINGLE STREET NAME SIGN PANEL EA X

DUAL STREET NAME SIGN PANEL EA X

REMOVE EXISTING STOP SIGN PANEL EA X

CONCRETE PAD (8' X 9' X 6", Class B) SF 72

**ITEM 681 - TEMPORARY TRAFFIC SIGNALS**

The list of material below is for the Contractor’s information only and is subsidiary. It is the responsibility of the Contractor to verify all items and quantities listed below.

 DESCRIPTION UNIT QUANTITY

40 FT TIMBER POLE (CLASS 2) EA X

8 FT LUMINAIRE MAST ARM FOR WOOD POLE EA X

 MOUNTING W/ 250W HPS LUMINAIRE

CABLE STRAPS EA X

**⅜"** ZINC-COATED STRANDED STEEL CABLE LF X

**¼"** ZINC-COATED STRANDED STEEL CABLE LF X

GROUND ANCHORS EA X

YELLOW PLASTIC GUY GUARD EA X

DOUBLE EYE ANCHOR ROD EA X

**⅝"** X 8**'** COPPERCLAD GROUND ROD W/CLAMP EA X

250W HPS LUMINAIRE EA X

8 PHASE NEMA CONTROLLER COMPLETE W/ EA X

 CABINET AND ACCESSORIES

REGULATORY SIGN PANEL (R10-12, ETC) EA X

SINGLE STREET NAME SIGN PANEL EA X

DUAL STREET NAME SIGN PANEL EA X

CONCRETE PAD (5' X 5' X 4") SF 25

LIST OF MATERIAL FURNISHED BY THE CITY OF *(XXXX) or* TEXAS DEPARTMENT OF TRANSPORTATION

 DESCRIPTION UNIT QUANTITY

CABINET ASSEMBLY WITH ACCESSORIES EA X

VIVDS CAMERA ASSEMBLIES EA X

VIVDS PROCESSOR CARDS (4 CHANNEL) EA X

VIVDS EXTENSION MODULES (4 CHANNEL) EA X

VIVDS MINI-HUBS (4 CHANNEL) EA X

VIVDS VIDEO MONITORS EA X

VIVDS SURGE SUPRESSION PANELS EA X

DUAL BAND ETHERNET RADIO (2.4/5.8) EA X

MANAGED HARDENED ETHERNET SWITCH EA X

POWER SUPPLY (FOR ETHERNET SWITCH) EA X

DETECTOR, 2 CHANNEL CONTACT MATRIX CLOSURE EA X

3 APPROACH AC POWER PKG, W/ 3 SENSORS/BRACKETS EA X

4 APPROACH AC POWER PKG, W/ 4 SENSORS/BRACKETS EA X

ADVANCE VEHICLE DETECTION SYSTEM, 10.525 GHX EA X

INLINE TERMINAL STRIP JUNCTION BOX EA X

6/C CABLE WITH CONNECTOR (PIG-TAIL) EA X

6/C CABLE FOR SMARTSENSOR (1500 FT ROLL) EA X

4 SENSOR PREASSEMBLED BACKPLATE W/ AC POWER EA X

SENSOR MOUNT, 2 AXIS ALUMINUM BRACKET EA X

SERIAL TO ETHERNET CONVERTER EA X

LIST OF MATERIAL FURNISHED BY THE CITY OF ***(XXXX)***

 DESCRIPTION UNIT QUANTITY

OPTICOM CABLE LF X

OPTICOM DETECTOR W/MOUNTING BRACKET EA X

OPTICOM MODULES (2-CHANNEL) EA X

OPTICOM CARD RACK AND HARNESS EA X

OPTICOM CONTROLLER ASSEMBLY COMPLETE EA X

 WITH CABINET AND ACCESSORIES

**ITEM 7251 – SUBSURFACE UTILITY LOCATE**

This item is available to supplement 811 utility locate. Contractor must receive TxDOT approval prior to use. TxDOT will not be responsible for any damage to utilities regardless of locating method.