

**Control:**

**Sheet**

**County:**

**Highway:**

\*\*\*\*\*GENERAL NOTES\*\*\*\*\*  
2014 Specification Book (Revised October 9, 2020)

*All of the following notes shown in red are for the designer. Please remove prior to submitting the final version.*

===== **Basis of Estimate** =====

Item	Description	Rate/Area	Quant-Unit
_____	_____	____Rate/____Area	_____
_____	_____	____Rate/____Area	_____

- The Following Is For Information Only - Non Pay-

_____	_____	____Rate/____Area
_____	_____	____Rate/____Area

===== **Asphalt Concrete Pavement** =====

Type	Location	Depth	Rate/Area	Quant-Tons
_____	Main Rdwy	_____	____lbs/____sy	_____
_____	_____	_____	____lbs/____sy	_____

===== **Surface Treatment Data** =====

Description	1st Course	2nd Course
Area	_____ sy	_____ sy

-----**See Bid Item**-----

Asphalt—rate (gal/sy)	____/1 = ____ gal	____/1 = ____ gal
Aggregate--type/gr	ty __/gr __	ty __/gr __
Aggregate—rate (cy/sy)	1/____ = ____ cy	1/____ = ____ cy

**--General--**

NOTICE

The Contractor is to take note that this project is based off of A+B bid contracting (see Item 2 Article 11.5.2). Incentive/Disincentive provisions will apply to this project as per Special Provision to Item 8 (008—006) for both substantial completion of work and any milestone work. See notes under Items 2 and 8 below for the number of working days for the substantial completion of the project and any additional details.

*Note G-1 is required on all projects with A+B bid contracting.*

G-1

**Control:**

**Sheet**

**County:**

**Highway:**

- G-2 The following State, District, Local and/or Utility Standards have been modified: \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_.
- G-3 Contact the Engineer or the City when construction operations are within 400 feet of a signalized intersection to determine/verify the location of loop detectors, conduit, ground-boxes, etc. Repair or replace any signal equipment damaged by construction operations. The method of repair or replacement shall be pre-approved and inspected. Depending on the type and extent of the damage, the Engineer reserves the right to perform the repair or replacement work and the Contractor will be billed for this work.
- City of San Antonio: (210) 207-8642  
City of New Braunfels: (830) 221-4049
- G-4 Remove existing raised pavement markings as the work progresses or as approved. This work is subsidiary to the various bid items. Properly dispose materials removed.
- G-5 To better fit field conditions, the cross sections may be varied when approved.
- G-6 If there are waste areas or material source areas, follow the Texas Aggregate Quarry and Pit Safety Act requirements.
- G-7 Any materials removed and not reused and determined to be salvageable shall be stored within the project limits at an approved location or delivered undamaged to the storage yard as directed. Properly dispose unsalvageable materials in accordance with local, state, and federal regulations. Deface traffic signs so that they will not reappear in public as signs.
- G-8 Any sign panels that are adjusted or removed and replaced, shall be done the same workday unless otherwise approved. This work shall be considered subsidiary to Item 502.
- G-9 Notify the Engineer at least two weeks prior to a proposed traffic pattern change(s) that will require a revision to traffic signals.
- G-10 Locate and reference all manholes and valves within the construction area with station and offset. Each manhole and valve shall be identified by its owner (SAWS, CPS, etc.). No roadwork will begin until this list has been submitted. All valves and manhole covers have to be accessible at all times, therefore; temp. CTB, material stock piles, etc. cannot be placed over these valves or covers.
- G-11 Adjust or construct all manholes and valves to final pavement elevations prior to the final mat of ACP. If, between the final elevation adjustment and the final mat of ACP, the manholes and valves are going to be exposed to traffic, place temporary asphalt around the manhole and valve to provide a +/- 50:1 taper. The cost of elevation adjustment and the concrete apron around the

**County:****Highway:**

manhole and valve will be part of the manhole and valve work. The asphalt tapers are part of the ACP work.

**G-12 Hurricane Evacuation**

*Note G-12 is required on all projects.*

Hurricane Season is from June 1 thru November 30. As the closest metropolitan city inland from the Texas Coast, the City of San Antonio is a major shelter destination during mandatory hurricane evacuations. As such, planned work zone lane or road closures may be restricted and/or suspended during mandatory hurricane evacuation operations. The District will coordinate these restrictions at a minimum H-120 from any projected impact to the Texas Coast.

No time charges will be made if the Engineer determines that work on the project was impacted by the hurricane.

The Engineer may order changes in the Traffic Control Plan to accommodate evacuation traffic, and may suspend the work, all or in part, to ensure timely completion of this work. All work to implement changes in the Traffic Control Plan will be paid through existing bid prices or through Item 9.5, Force Account. However, the Department will not entertain any request for delay damages, loss of efficiency that may be attributed to the restriction or suspension of road or lane closures, or to changes in the Traffic Control Plan.

**G-13** The Contractor should be aware that the "City Public Service" (CPS) will be consulted by the Engineer in matters concerning the execution of the work, materials and testing related to the CPS work. As such; a CPS employee may be observing the construction and related operations as they progress.

**G-14** If a sanitary sewer overflow (SSO) occurs:

1. Attempt to eliminate the source of the SSO.
2. Contain sewage from the SSO to the extent possible to prevent contamination of waterways.
3. Call SAWS at (210) 233-2015.

**G-15** The Contractor should be aware that the "San Antonio Water System" (SAWS) will be consulted by the Engineer in matters concerning the execution of the joint bid Water and/or Sanitary work. This may include reviewing material submittals and testing related to this work, as well as inspection and observation of the actual work. As such, a SAWS employee may be reviewing submittals and test results as well as observing the construction and related operations as they progress.

*Required on projects with joint bid SAWS utility work.*

**G-16** Submit locate request for SAWS water and sewer to [TXDOTlocates@saws.org](mailto:TXDOTlocates@saws.org).

**County:**

**Highway:**

G-17 Contractor questions on this project are to be addressed to the following individual(s):  
Area Engineer, e-mail address  
Assistant Area Engineer, e-mail address  
*Contact the Area Engineer to determine the individuals to be listed here. The individuals listed here must have approval to access the FTP site.*

Contractor questions will be accepted through email, phone, and in person by the above individuals.

All contractor questions will be reviewed by the Engineer. Once a response is developed, it will be posted to TxDOT's Public FTP at the following Address:

<https://ftp.dot.state.tx.us/pub/txdot-info/Pre-Letting Responses/>

All questions submitted that generate a response will be posted through this site. The site is organized by District, Project Type (Construction or Maintenance), Letting Date, CCSJ/Project Name.

G-18 The Contractor must measure the vertical clearance at each structure after the final surface of the roadway is completed and provide the vertical clearance measurement to the Engineer.

**--Item 2--**

2-1 Notes for A+B Bidding  
The maximum number of days allowed for substantial completion will be \_\_\_ working days.

The minimum number of days allowed for substantial completion will be \_\_\_ working days.  
*The default for minimum number of days allowed is 100 days unless the maximum number of days allowed for substantial completion is 100 days or less.  
Note 2-2 is required on all projects with A+B bid contracting.*

*Refer to, "Accelerated Construction Guidelines," on the Construction Division site at [www.txdot.gov](http://www.txdot.gov) for information and guidance.*

2-2 Where a precast or cast-in-place concrete element is shown in the plans, Contractor may submit a precast concrete alternate in accordance with the TxDOT Standard Operating Procedure found online here: <http://ftp.dot.state.tx.us/pub/txdot-info/brg/design/alternate-precaster-proposal-submission.pdf>. Acceptance or denial of any precast alternate design proposal is at the sole discretion of the Engineer.

**--Item 5--**

5-1 Reference all existing striping and other pavement markings to allow these markings to be re-established. Ensure the markings (lane lines, edge lines, ramp gores, etc.) are in line with signs, TMS arrows, etc. located on overhead sign supports.

5-2 Taper ACP placed at curb inlets, traffic inlets and slotted drains.

**County:****Highway:**

- 5-3 When a bridge deck is milled, seal coated and overlaid, remove excess material. Do not just broom to the sides of the bridge, under guardrail, etc. Cover or protect all sealed expansion joints and rails on bridges and all railroad tracks encountered as approved. Clean all of these features if they weren't properly protected. This work is subsidiary work to applicable bid items.
- 5-4A. Prior to letting, bidders may obtain a free computer diskette or a computerized transfer of files (from the Engineer's office) that contains the earthwork information. If copies of the cross-sections in addition to, or instead of, the CD are requested, they will be available at the Engineer's office for borrowing by copying companies at the bidder's expense.
- OR
- 5-4B. The earthwork information was not developed with computers; therefore, a CD can not be provided. Prior to letting, earthwork cross-sections will be available at the Engineer's office for review by the bidder or for borrowing by copying companies to make copies at the bidder's expense.
- 5-5 When working near aerial electrical lines or utility poles, comply with Federal, State and local regulations. A horizontal boom or equivalent equipment is required for construction in the vicinity of the CPS Energy electric lines in order to provide vertical clearance of equipment during construction. Contact CPS Energy Utility Coordination Group sixteen (16) week in anticipation of pole bracing. The estimated duration for pole bracing is 6 to 10 weeks (or longer if temporary construction easements are required) after invoice is paid. For de-energizing or sleeving of the overhead electrical lines depicted on the plans, please contact CPS Energy Utility Coordination Group sixteen (16) week in anticipation of needed de-energization. The estimated duration for de-energizing is approximately 4 to 6 weeks (after invoice is paid) but could vary on system scenario and backfeed requirements. De-energizing may not be possible in all instances or may be restricted during specific periods of time due to load demand. Contractor will be reimbursed for the invoice cost for pole bracing and/or de-energizing or sleeving through force account.
- 5-6 **Prevention of Migratory Bird Nesting**  
*Note 5-6 is required on all projects*
- It is anticipated that migratory birds, a protected group of species, may try to nest on bridges, culverts, vegetation, or gravel substrate, at any time of the year. The preferred nesting season for migratory birds is from February 15 through October 1. When practicable, schedule construction operations outside of the preferred nesting season. Otherwise, nests containing migratory birds must be avoided and no work will be performed in the nesting areas until the young birds have fledged.

Structures

**County:****Highway:**

Bridge and culvert construction operations cannot begin until swallow nesting prevention is implemented, until after October 1 if it's determined that swallow nesting is actively occurring, or until it's determined swallow nests have been abandoned. If the State installed nesting deterrent on the bridges and culverts, maintain the existing nesting deterrent to prevent swallow nesting until October 1 or completion of the bridge and culvert work, whichever occurs earlier. If new nests are built and occupied after the beginning of the work, do not perform work that can interfere with or discourage swallows from returning to their nests. Prevention of swallow nesting can be performed by one of the following methods:

1. By February 15 begin the removal of any existing mud nests and all other mud placed by swallows for the construction of nests on any portion of the bridge and culverts. The Engineer will inspect the bridges and culverts for nest building activity. If swallows begin nest building, scrape or wash down all nest sites. Perform these activities daily unless the Engineer determines the need to do this work more frequently. Remove nests and mud through October 1 or until bridge and culvert construction operations are completed.
2. By February 15 place a nesting deterrent (which prevents access to the bridge and culvert by swallows) on the entire bridge (except deck and railing) and culverts.

No extension of time or compensation payment will be granted for a delay or suspension of work caused by nesting swallows. This work is subsidiary to the various bid items.

- 5-7 Provide a non-intrusive back-up alarm system on all heavy equipment used in close proximity to residential areas. This item is subsidiary to various bid items.  
*Include this note if the construction site is within a residential area.*

**--Item 6--**

- 6-1 Show the stockpile lot and/or sub lot numbers on all tickets for all materials.

- 6-2 Steel Wrapped or Asbestos Utility Lines:

Existing steel wrapped natural gas and/or asbestos cement (AC) water lines that will no longer be in service are usually abandoned in place (AIP). However, if any of these lines have to be removed for whatever reason (in the way of other construction, to make tie-ins, etc.), comply with Item 6.

If removal of AC water lines is included in the construction contract, then notify the Engineer of proposed dates of removal of the AC water lines in accordance to Item 6. Excavate to the top of the AC water line to allow a separate contractor hired by the State to remove the AC water line. The excavation for the AC water line removal is subsidiary to the work that created the need for the removal (excavation for structures, roadway, a new line, tie-ins, etc.).

**--Item 7--**

**County:**

**Highway:**

7-1A The project's total disturbed area is \_\_\_\_\_. The disturbed area in all project locations and Contractor project specific locations (PSL's), within 1/4 mile of the project limits, will further establish the authorization requirements for storm water discharges. The department will obtain an authorization to discharge storm water from the Texas Commission on Environmental Quality (TCEQ) for the construction activities shown on the plans. Obtain any required authorization from the TCEQ for any PSL's on or off the ROW. When the total area disturbed on the project and PSL's within 1/4 mile of the project exceeds 5 acres, provide a copy of the Contractor NOI for PSL's to the Engineer (to the appropriate MS4 operator when the project is on an off-state system route).

OR

7-1B The total disturbed areas within the project is anticipated at less than one (1) acre. Due to this type of construction, the project qualifies for exclusion under the Construction General Permit (CGP) issued by the Texas Commission on Environmental Quality (TCEQ). However; should the sum of the Engineer's anticipated disturbances and the Contractor's (On ROW and off ROW) PSL's equal or exceed the one (1) acre threshold; both TxDOT and the Contractor have project responsibilities under the CGP that reverts to non-exclusion status. Obtain approval for all non-depicted areas of disturbance that increases the initial soil and vegetation disturbed area estimates before work starts at these locations.

7-2 Notify the Engineer of the disturbed acreage within one (1) mile of the project limits. Obtain authorization from the TCEQ for Contractor PSL's for construction support activities on or off ROW.

7-3A No significant traffic generators events identified.

OR

7-3B Roadway closures during the following key dates and/or special event are prohibited. See the TCP Narrative for these dates.

*Note 7-4 is required on all projects to comply with requirements of Senate Bill 312. When a proposed improvement will require the closing of a highway, the department will need to coordinate the closure with public officials from municipalities affected by the closure. The construction contract must contain a provision identifying the days that a highway may not be closed (Special Provision to Item 7 is required). In addition, the department must determine the estimated economic impact of the closure during periods of increased travel on holidays and other periods of high commercial activity. The economic impact is only required for a full highway or ramp closure.*

*The San Antonio District TCP Narrative lists standard dates and/or events that a highway or lanes may not be closed in San Antonio. If it is necessary to add dates and/or events that a highway or lanes may not be closed in San Antonio then list them on the TCP Narrative. If the project location is outside of San Antonio, then you must coordinate with the public officials from municipalities affected by a highway or lane closure, and add and/or delete dates and/or events on the TCP Narrative that a highway or lanes may not be closed.*

**County:**

**Highway:**

*Refer to Memo with subject, "Senate Bill 312, Section 25 – Requirements for Highway Closures during Certain Periods," and refer to the Word document, "Guidelines for Road Closures During Certain Periods", found on the Crossroads Design Site.*

**--Item 8--**

8-1 Working days will be computed and charged in accordance with Article 8.3.1. \_\_\_\_: \_\_\_\_-Day work week.

8-2A The Start Work Date is \_\_\_\_\_.  
*You must get approval from the District Design Engineer in order to include this note.*

OR  
8-2B A Special Provision to Item 8 for a delayed authorized date to begin work has been included in the contract. The reason for including the Special Provision is for material processing or contractor mobilization.  
*Include this note on all projects unless you receive approval from the Director of Construction. According to the Standard Operating Procedures for Item 8 Delayed Start Provisions, delayed start shall not exceed 90 days unless prior approval is granted by Administration.*

OR  
8-2C A Special Provision to Item 8 for a delayed authorized date to begin work has been included in the contract. The reason for including the Special Provision is for right of way acquisition, relocations, hazardous material removal, remediation, railroad coordination, or utilities.  
*According to the Standard Operating Procedures for Item 8 Delayed Start Provisions, you must get approval from the District Design Engineer in order to include this note. If this note is included you must have an approved Construction Management Plan to demonstrate how these activities will not impact construction operations and an approved delayed start work provision memorandum. The Construction Management Plan and delayed start work provision memorandum must be submitted to DES-Field Coordination Engineer for routing and approval by Administration one week prior to FIN posting candidate list of projects for letting according to the PS&E Review and Processing Schedule.*

8-3 Create and maintain a \_\_\_\_\_ schedule.  
*Show either Bar Chart or Critical Path Method (CPM).*

8-3A The CPM schedule shall be created and maintained using software fully compatible with version 6.1 of Primavera Project Planner.  
*This note is required when you have chosen to require a Critical Path Method (CPM).*

8-3B Provide a Project Schedule Summary Report.  
*This note requires the Contractor to provide a detailed CPM. Should only be used on larger projects with complex TCP.*

**County:**

**Highway:**

8-4 A lane closure assessment fee will be assessed as per the “Lane Closure Assessment Fee Table” in the plans.  
*This note is required when using the Districtwide Special Provision for Lane Closure Assessment Fees.*

8-5 Incentive using road-user cost or contract administration liquidated damage values and disincentive using road-user cost will be paid in accordance with special provision 008--006.  
*Include this note when Incentive Using Road-User Cost or Contract Administration Liquidated Damages (CALD) Values and Disincentive Using Road-User Cost are required for a project. Include SP 008--006.*

8-6 The road-user cost liquidated damages shall be \$\_\_\_\_\_ per day.  
*Use this note if required by Form 2699 and use with Special Provision to Item 000 Schedule of Liquidated Damages.*

8-7 Notes for Substantial Completion of Work for the Project  
*Include Special Provision to Item 8 for Incentive Using Road-User Cost or Contract Administration Liquidated Damage Values and Disincentive Using Road-User Cost.*

Substantial Completion of Work is defined in Special Provision to Item 8.

The daily road-user cost for incentive and disincentive for Substantial Completion of Work for the project will be \$\_\_\_\_\_ per day.

The contractor will have a maximum of \_\_\_\_ working days for Substantial Completion of Work for the project.

Working day time charges for Substantial Completion of Work for the project will be computed and charged in accordance with Article 8.3.1.\_\_\_\_:\_\_\_\_-Day.

The time charges for the purpose of computing incentive and disincentive for Substantial Completion of Work for the project will begin when time charges begin for the project.

The time charges for the purpose of computing incentive and disincentive for Substantial Completion of Work for the project will end when all project work is completed according to the definition of Substantial Completion of Work in Special Provision to Item 8.

*If more description is required for end time charges for Substantial Completion of Work for the project, then provide the description here, but be consistent with the definition of Substantial Completion of Work in Special Provision to Item 8.*

The maximum number of working days for computing the incentive credit for Substantial Completion of Work for the project will be \_\_\_\_ days. The maximum credit allowable for early completion is \$\_\_\_\_\_.

**Control:**

**Sheet**

**County:**

**Highway:**

*The maximum credit allowable is the maximum number of working days for computing the incentive credit multiplied by the daily road-user cost for Substantial Completion of Work for the project.*

Failure of Substantial Completion of Work for the project within the established number of working days shown above will result in the assessment of disincentives using the daily road-user costs shown above for each working day in excess of those allowed for Substantial Completion of Work for the project.

8-8

Notes for Milestones

*When setting up milestones on a project it is necessary to provide a detailed description of the work considered to be included in each milestone or phase. This must be done in the traffic control plans (TCP). The description should be clear, easily identified, and based on the shifting of traffic in the particular phases. It is especially important in establishing the beginning and ending of phases to base them on the shifting of traffic and not on general work areas.*

*Include Special Provision to Item 8 for Incentive Using Road-User Cost or Contract Administration Liquidated Damage Values and Disincentive Using Road-User Cost.*

*Refer to, "Accelerated Construction Guidelines," on the Construction Division site at [www.txdot.gov](http://www.txdot.gov) for information and guidance.*

Substantial Completion of Work is defined in Special Provision to Item 8.

Milestone 1

See the traffic control plans (TCP) for a detailed description of the work included in Milestone 1.

The daily road-user cost for incentive and disincentive for Milestone 1 will be \$\_\_\_\_\_ per day.

The contractor will have \_\_\_ working days for Substantial Completion of Work for Milestone 1.

Working day time charges for Milestone 1 will be computed and charged in accordance with Article 8.3.1.\_\_\_\_\_:\_\_\_\_\_-Day.

The time charges for the purpose of computing incentive and disincentive for Milestone 1 will begin when traffic is moved to the lane arrangement shown in the TCP for Milestone 1.

The time charges for the purpose of computing incentive and disincentive for Milestone 1 will end with Substantial Completion of Work for Milestone 1.

*If more detailed description is required for when time charges begin and end for each milestone, then you may describe it here in the general notes, but be consistent with the definition of Substantial Completion of Work in Special Provision to Item 8.*

**Control:**

**Sheet**

**County:**

**Highway:**

The maximum number of working days for computing the incentive credit for Milestone 1 will be \_\_\_\_ days. The maximum credit allowable for early completion of Milestone 1 is \$\_\_\_\_\_.  
*The maximum credit allowable is the maximum number of working days for computing the incentive credit multiplied by the daily road-user cost for Milestone 1.*

Failure of Substantial Completion of Work for Milestone 1 within the established number of working days shown above will result in the assessment of disincentives using the daily road-user costs shown above for each working day in excess of those allowed for Milestone 1.

*Repeat as necessary.*

8-9

Notes for A+B Bidding

*An 800 item should be added for the contractor to be able to bid the number of days to substantially complete the project, or multiple items should be added for bidding the number of days to complete milestones (phases) of the project. The description for the item will be "NO. OF WORKING DAYS" and the item will have a unit of "\$/D" for the daily road-user cost. Please note that in A+B the contractor will bid the days to substantial completion, and will not bid the total time. The reason for bidding the days to substantial completion is because the daily road-user cost values are based on substantial completion. Therefore, you must include the notes for Substantial Completion of Work for the Project with A+B Bidding, and include Special Provision to Item 8 for Incentive Using Road-User Cost or Contract Administration Liquidated Damage Values and Disincentive Using Road-User Cost.*

*When A+B Bidding provisions are included in the Contract, use the notes within 8-9 and delete the notes in 8-7 for Substantial Completion of Work for the project.*

*Refer to, "Accelerated Construction Guidelines," on the Construction Division site at [www.txdot.gov](http://www.txdot.gov) for information and guidance.*

Substantial Completion of Work is defined in Special Provision to Item 8.

The daily road-user cost for Substantial Completion of Work for the project will be \$\_\_\_\_\_ per day, which will be assessed as an incentive for the early Substantial Completion of Work for the project under the number of working days bid by the Contractor, and will be assessed as a disincentive for failure of Substantial Completion of Work for the project within the established number of working days bid by the Contractor.

Working day time charges for Substantial Completion of Work for the project will be computed and charged in accordance with Article 8.3.1.\_\_\_\_\_:\_\_\_\_\_-Day.

The time charges for the purpose of computing incentive and disincentive for Substantial Completion of Work for the project will begin when time charges begin for the project.

**Control:**

**Sheet**

**County:**

**Highway:**

The time charges for the purpose of computing incentive and disincentive for Substantial Completion of Work for the project will end when all project work is completed according to the definition of Substantial Completion of Work in Special Provision to Item 8.

*If more description is required for end time charges for Substantial Completion of Work for the project, then provide the description here, but be consistent with the definition of Substantial Completion of Work in Special Provision to Item 8.*

The maximum number of working days for computing the incentive credit for Substantial Completion of Work for the project will be \_\_\_ days. The maximum credit allowable for early completion is \$\_\_\_\_\_.

*The maximum credit allowable is the maximum number of working days for computing the incentive credit multiplied by the daily road-user cost for Substantial Completion of Work for the project.*

Failure of Substantial Completion of Work for the project within the established number of working days bid by the Contractor for substantial completion will result in the assessment of disincentives using the daily road-user costs shown above for each working day in excess of those days bid by the Contractor for Substantial Completion of Work for the project.

The number of working days for final acceptance will be \_\_\_ working days after the Substantial Completion of Work date for the project. Failure of completing the work within this established number of working days will result in the assessment of disincentives using the schedule of liquidated damages and any additional road user cost specified by Special Provision to Item 000 and general notes to Item 8 for each working day in excess of those allowed for final acceptance of the project.

*Use this note if the Area Office wants the option of setting the time between substantial completion and project acceptance. If the Area Office chooses the option of setting the total time for the project regardless of the time bid by the contractor, then that number of days will be placed on the cover sheet as, "It is further understood that the work is to be completed in full in \_\_\_ working days." When the time between substantial completion and project acceptance is specified by general note, then an asterisk will be placed in the blank.*

**--Item 9--**

9-1

When approved, provide uniformed, off-duty law enforcement officers with marked vehicles during work that requires a lane closure. The officer in marked vehicles shall be located as approved to monitor or direct traffic during the closure. The method used to direct traffic at signalized intersections shall be as approved. Additional officers and vehicles may be provided when approved or directed.

Complete the daily tracking form provided by the department and submit invoices that agree with the tracking form for payment at the end of each month approved services were provided.

**Control:**

**Sheet**

**County:**

**Highway:**

Show proof of certification by the Texas Commission on Law Enforcement Standards.

All law enforcement personnel used in Work Zone Traffic Control shall be trained for performing duties in work zones and are required to take "Safe and Effective Use of Law Enforcement Personnel in Work Zones" (Course #133119) which can be found online at the following site: [www.nhi.fhwa.dot.gov](http://www.nhi.fhwa.dot.gov)

Certificates of completion should be available to all who finish the course. These should be kept by the officers in order to substantiate completion when reporting to the work site.

Minimums, scheduling fees, etc. will not be paid; TxDOT will consider paying cancellation fees on a case by case basis.

*Need to show in the estimate Contractors Force Account Work "Furnish Police Officer and Cruiser".*

9-2 Repair existing cable barrier system of the type \_\_\_\_\_ when directed by the Engineer. This work will be paid by force account method.

*Need to show the type of cable barrier system in the note above and need to show in the estimate Contractors Force Account Work "Repair Cable Barrier System".*

**--Item 100--**

100-1 Begin clearing operations after trees and other areas of vegetation to be protected have been identified and approved. Install fencing around features to be protected as shown in the plans or directed. Coordinate all right of way clearing operations with the SW3P.

100-2 Trim and remove brush and trees within the stations noted in the plans and as needed for construction operations. Unless shown otherwise in the plans or a designated non-mow area, perform trimming or removal for areas to the ROW limits. 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 12 ft. vertical clearance under all trees. This work is subsidiary.

Obtain approval for proposed method of tree and brush trimming and removal. Vertical flailing equipment is not allowed. Treat damaged or cut branches, roots and/or stumps of all oak trees with a commercial tree wound dressing. Disinfect all pruning tools with a solution of 70% alcohol before moving from one tree to another. Unless otherwise approved remove all resulting vegetative debris from the ROW within 24 hours. The Engineer can stop all construction operations if the dressing, cut and removal requirements are not followed.

**--Item 110--**

110-1 Where excavation extends beyond a right of way fence, remove and replace the fence to a comparable condition. This work shall be considered subsidiary to the bid item.

**County:**

**Highway:**

**--Item 132--**

132-1 At no time shall the retaining wall backfill material exceed the adjacent embankment operation by more than one embankment lift. At no time will the embankment adjacent to the retaining wall backfill exceed the wall backfill by any elevation.

**--Item 160--**

160-1 Approximately \_\_\_\_\_ CY of existing topsoil may be windrowed or stockpiled (as approved) for later use under this Item. Place erosion control measures for the stockpile and/or windrow.

**--Item 161--**

161-1 Approximately \_\_\_\_\_ CY of existing topsoil may be salvaged and windrowed or stockpiled (as approved) for later use as Compost Manufactured Topsoil (CMT). Place erosion control measures for the stockpile and/or windrow.

**--Item 162--**

162-1 Furnish and place \_\_\_\_\_ grass sod.  
*In drought conditions do not place sod as vegetation. Check with the area office in charge of the construction of the project.*

**--Item 164--**

164-1 Drill seeding of permanent grasses requires the use of approved grass seeding equipment capable of properly storing and metering the release of small seeds (such as Bermuda grass) separately from fluffy type seeds (such as bluestems). Equipment manufactured for planting grain crops is acceptable for planting temporary cool season seeds, but not for planting the permanent seed mix.

If performing a permanent seeding in an area with established temporary grass cover and mowing is performed instead of tilling, seed and fertilizer may be distributed simultaneously during "Broadcast Seeding" operations, provided each component is applied at the specified rate.

**--Item 166--**

166-1 Use a fertilizer with an analysis of 13-13-13 (50% of the total N must be sulfur coated urea) to apply 60 lbs of actual N per acre. This requires 460 lbs of 13-13-13 per acre or .095 lbs per SY of area.

**--Item 168--**

168-1 Apply vegetative watering as needed to supplement natural rainfall during the vegetation establishment period. Plan quantity of irrigation water is based on the application of a total of 1.3 gal of water each week for each sq. yd. of area that is sodded or seeded. Establishment time is estimated to be 12 weeks for both sod and permanent seed mixes. Temporary seeding will require less time for establishment. Provide a schedule and coordinate watering cycles and rates per cycle with the Engineer. Obtain approval if the quantity of water to be applied is expected to exceed the plan quantity. Adjust the amount of water applied with each cycle and the number of

**County:**

**Highway:**

cycles each wk. according to actual site conditions. Drought or other conditions, as determined by the Engineer, may require the application of supplemental irrigation during hours other than normal working hours.

**--Item 247--**

247-1 There is no minimum PI requirement for this project.

**--Item 275--**

275-1 The Engineer will designate a target cement content and optimum moisture content necessary to produce a stabilized mixture that meets the strength requirements and moisture susceptibility requirements shown in Table 1. The Contractor shall furnish the Engineer with representative samples of the materials to be used in production of the cement treated base.

Table 1  
Requirements for Cement Treatment

Description	Minimum	Maximum
Cement Content (by dry weight of base)	2%	5%
7-Day Unconfined Compressive Strength (min.) <sup>1</sup>	Tex-120-E, Part I	150 psi
Retained Strength after Moisture Conditioning (min.)	Tex-120-E, Part I (10 day capillary soak)	80% of 7—Day Unconfined Compressive Strength

Microcracking will be required in accordance with Item 275.4.7.

**--Item 302--**

302-1 Previously tested aggregates found to contain excessive quantities of dust (more than 0.5 percent passing the No. 40 sieve) during precoating, stockpiling or hauling operations, may be rejected. Use Test Method Tex-200-F, Part I for testing.

302-2 Precoated Aggregate Type PE shall consist of crushed slag, crushed stone or natural limestone rock asphalt.

302-3 The Engineer will utilize the Ignition Oven Method (Tex 236-F) for aggregate gradation, with the option of utilizing belt or vacuum extraction gradation in the event the ignition oven malfunctions.

**--Item 305--**

305-1A All reclaimable asphalt pavement (RAP) material will remain the property of the State and shall be stockpiled at \_\_\_\_\_.

OR

**County:****Highway:**

305-1B All reclaimable asphalt pavement (RAP) material will be retained by the Contractor.

**--Item 310--**

Refinish material that does not receive prime coat within one working day following acceptance of flexible base.

*Use Item 310 6027 Prime Coat (MC-30 or AE-P).*

**--Item 314--**

314-1 Use emulsified asphalt in the final flexible base finishing process. The amount used shall be as approved, but not less than 2 percent of the total mixture.

**--Item 316--**

316-1A. When using latex asphalt, avoid drifting of asphalt onto traffic and adjacent properties.

316-1B. Asphalt season will be year around, but meet sections 316.4.4.1 through 4.4.3.  
*To be used on construction projects only. Not intended for seal coats.*

316-2 Ensure that the asphalt for precoating the aggregate and the asphalt used for the surface treatment will not result in a reaction that may adversely affect the bonding of the aggregate and asphalt during the surface treatment operation.

Do not add bag house fines in the production of precoated material.

316-3 Clean all concrete curbs, islands, medians, etc. that get coated with asphalt.

**--Item 320--**

320-1 Construct all longitudinal ACP joints adjacent to a travel lane with a joint maker device that will create a 3:1 to 6:1 taper. For placement of 2 inches or more, the device shall provide a maximum ½ inch vertical edge. Taper outside edges (next to the grass) or backfill (shoulder-up) the same day.

320-2 Provide a material transfer device capable of providing a continuous flow of material to the paver. The material transfer device will consist of a windrow elevator or better.  
*Required on all projects with surface mixes.*

320-3 When placing Item 346 mixtures, Use a self-propelled wheel mounted MTV capable of receiving mix from the haul trucks, separate from the paver. It shall have a minimum storage capacity of approximately 25 tons. It shall be equipped with a pivoting discharge conveyor and shall completely and thoroughly remix the material prior to placement. The effectiveness of the MTV's remixing ability is subject to the approval of the Engineer. In addition, the paver shall have a surge storage insert with a minimum capacity of 20 tons.

**County:****Highway:****--Item 330--**

- 330-1 The asphalt plant shall have truck scales as defined in Item 520. Give three weight tickets bearing the date, the truck number, and the gross, net & tare weights to the truck driver, for the State inspector at the spreading and finishing operation. Trucks may be required to weigh on public scales or portable platform scales to verify the weight of the ticket.
- 330-2 Use trap rock or crushed slag as the special aggregate for LRA.
- 330-3 If LRA is stockpiled where it might get contaminated with foreign materials, the bottom of the stockpile can not be used. A set of standard truck scales will be used to determine the quantity of contaminated material that will be deducted. Unless approved, do not stockpile LRA more than 10 days prior to lay-down operations.
- 330-4 The fluxing material shall be either an emulsified combination of asphalt and softening agent added individually (the softening agent may also be an emulsion), or a material meeting the requirements of Item "Asphalt's, Oils and Emulsions". The material(s) selected shall be approved.

**--Item 340, 342, 346, 347, 348, 3076, & 3077--**

1. Table 10, in Item 340, Table 10 in Item 3076 and Table 11 in Item 3077, Hamburg Wheel Test Requirements tested in accordance with Tex-242-F are changed for PG 64-22 or lower and PG 70-22. Minimum number of passes at 12.55 mm Rut Depth, Tested at 50 degrees C will be 5,000 and 10,000 respectively.
2. The asphalt plant shall have truck scales as defined in Item 520. Give three weight tickets bearing the date, ticket number, the truck number, the gross, net & tare weights to the truck driver for the State inspector at the spreading and finishing operation. Trucks may be required to weigh on public scales or portable platform scales to verify the weight of the ticket.
3. Submit a copy of the Tex 233-F production charts on a weekly basis. At the end of the ACP work, provide all originals.
4. Crushing of aggregate for hot mix and immediate use for production of the mix is not allowed. Stockpile the aggregate until enough material is available for five days of production unless prior approval is provided
5. Hold a pre-placement meeting one month prior to the placement of the hot mix.
6. Do not use diesel or solvents as asphalt release agents in production, transportation, or construction. A list of approved asphalt release agents is available from the District Laboratory.
7. No more than one hot mix lot will be open for any specific type of hot mix, unless authorized. After a lot is open and the Contractor gets approval to change plants, the previous lot will be

**County:**

**Highway:**

closed and a new lot will be opened. The numbering for the lots produced at the new plant will start with No. 1. If allowed to switch back to the original or previous plant, the next lot from that plant will resume numbering sequentially from the last lot produced by that plant.

**--Item 340--**

Binder substitution is not allowed for surface mixtures.

Reference Table 15A and 15B in Item 3076 for Minimum Surface Temperatures.

**--Item 342, 347 & 348--**

Aggregate soundness values shall not vary by more than 8 percent between Surface Aggregate Class (SAC) A and B.

*Complete the Form 2088 for SAC classification and coordinate with the Pavement Engineer, but most likely these items will require a SAC A.*

**--Item 354--**

354-1A Planed material shall be delivered and stockpiled at \_\_\_\_\_.

OR

354-1B Retain planed material.

354-2 Take precaution to avoid damage to existing bridge decks and armor joints. Repair any damage to the bridge decks and/or armor joints as approved. This work will not be paid directly, but will be performed at the Contractor's expense.

**--Item 401--**

401-1 A shrinkage compensator is not required for when used for backfilling pipes. Strength of the Flowable Backfill will be verified by the District Laboratory. Field testing is not required, unless deemed necessary.

**--Item 403--**

403-1 The Contractor and/or Contractor's Engineer who selects and designs the temporary shoring is responsible for the overall (global) stability calculations as well as internal stability and sliding calculations (including mat and soil nail pullout) as per the TxDOT Bridge Division Geotechnical Manual. If the Contractor chooses a Temporary Earth Retaining Wall for Temporary Shoring, then the Contractor and/or Contractor's Engineer is required also to provide wire struts as shown on these plans. Designs for any type of Retaining Wall used for Temporary Special Shoring shall conform to the TXDOT Geotechnical Manual Chapter 6: Retaining Walls.

403-2 The Contractor is responsible for maintaining positive drainage during construction of temp shoring operations and permanent wall structures.

**County:**

**Highway:**

**--Item 410 & 411--**

*Include Item 410 and/or 411 as a reference item to Item 423 if Retaining Wall is of Type Soil Nail and/or Rock Nail Retaining Wall*

1 Soil Nail and Rock Nail proof and verification testing to be coordinated with TxDOT a minimum of one week prior to the desired testing date. The location of the test nails will be approved by the Engineer. TxDOT personnel may be present during testing, and may choose to monitor the applied test load using their own equipment. Test anchors must project out from the face of the cut enough to accommodate the Contractor's loading and measurement devices, as well as an additional 1 foot for the Department's load cell. Perform testing as specified in the Standard Specification Item 410 "Soil Nail Anchors" and Item 411 "Rock Nail Anchors" to the maximum test load stated.

2 No less than 10 nails per 50 nails of consistent soil nail lengths may be proof tested. If nail lengths vary, then no less than 5 nails per varying soil nail lengths may be proof tested according to ratios approved by the Engineer. No less than 3 verification test nails may be used for specific soil nail length when variable soil nail lengths are called for in the design. If widely varying soil conditions are encountered, the Engineer may require additional test nails.

3 Unless contract plans show otherwise, soil nail test loads are as follows for the specific lengths:

Nail Length	Test Load
10'	16 kips
12'	20 kips
14'	23 kips
16'	25 kips
18'	28 kips
20'	34 kips
24'	38 kips
26'	41 kips
30'	46 kips

4 For varying soil conditions, anchor size and length (especially greater than 30'), Contractor shall submit plans and calculations signed and sealed by a registered professional engineer based on verified and documented geotechnical data. This submittal must be approved by the engineer of record.

5 Verification test anchors shall be #8 Dywidag or Williams Steel threadbar or equal. Proof test anchors shall be bar size shown on contract plans.

6 If test load is not achieved or soil nail fails, Engineer may continue to require additional tests until requirements are satisfied and Engineer gains confidence in the results. All nails that fail in any way, if production nails, are to be supplemented by additional nails and testing to the satisfaction of the Engineer and Owner. Contractor is to provide a summary of test nail results.

**County:****Highway:**

This summary is to include the test data in tabular form and a plot of the test data following the guidelines shown in FHWA publication, FHWA-NHI-14-007, FHWA GEC 007, February 2015. Test results are to be provided to the Engineer no more than 48 hours after testing.

7 The Contractor is responsible for maintaining positive drainage during construction of temporary shoring operations and permanent wall structures.

**--Item 420--**

420-1 Mass concrete will be measured in place.

420-2 Restrict large aggregate size to 3/4" maximum for class "C" concrete used in aesthetic details requiring form liners.

420-3 Pier and Bent Concrete will be paid for as "Plans Quantity".

**--Item 421--**

421-1 Use an automated ticket that contains the same information as TxDOT's ticket. Submit the ticket for approval prior to use. The concrete producer will contact the District Laboratory or the Engineer's Office (outside the San Antonio area) to inform TxDOT of scheduled structural concrete batching. Structural concrete includes bridge drill shafts, columns, caps, abutments, deck or top slabs of direct traffic culverts.

421-2 Entrained air is allowed for Class P and Class HES concrete only. Air content testing is waived for all classes of concrete.

421-3 The curing facilities and strength testing equipment is not required for this project.  
*Verify with the Area Office in charge of the construction of this project if a Laboratory and Equipment are needed. (Must match with note 504-1)*

421-4 Poly-fiber reinforced concrete may be used as an option, with the approval by the Engineer, for riprap, sidewalk, curb/gutter, and mow strip. Use a TxDOT approved manufacturer or producer for the poly-fiber. The poly-fibers shall be combined with the concrete in proportions as recommended by the manufacturer. A concrete mix design must be approved by the Engineer.

**--Item 422--**

422-1 For construction of approach slabs, longitudinal joints shall be placed on lane lines. Joints may be either a saw-cut crack control joint or a construction joint. Saw cut joints shall terminate 1'-0" before reaching the edge of the slab, must be saw cut as soon as possible after placement of concrete, and will be cut within 12 hours of concrete placement. Once sawing begins, it should be a continuous operation and should only be stopped if raveling occurs. Saw cut will be to a depth of 1.5" and filled with approved joint sealant.

422-2 The bridge approach slab will be poured simultaneously with the bridge deck.

**County:**

**Highway:**

**--Item 423--**

423-1 The backfill material for pre cast retaining walls shall be approved before placement. Build stockpile(s) in lifts not to exceed 2 feet and a minimum working face of not less than 10 feet, but not more than 20 feet.

423-2 Use the approved Concrete Block Retaining wall systems listed at:  
<http://www.txdot.gov/business/resources/approved-systems/retaining-system.html>

423-3 Use the approved Mechanically Stabilized Earth (MSE) wall systems listed at:  
<http://www.txdot.gov/business/resources/approved-systems/mse-wall.html>

TxDOT does not allow the use of experimental systems on projects with over 50,000 square feet walls over 25 ft. tall, or walls supporting or immediately adjacent to interstate highways.

When proprietary wall systems are used, a qualified representative of the retaining wall manufacturer must be available upon request during wall construction. As requested or required the manufacturer's representative must be on site to assist with the initial stages of wall construction, provide training to the Contractor wall crew and ensure proper interpretation of MSE wall shop drawings and details. Specific attention must be given to nonstandard wall installation details. The Contractor's wall crew foreman must be on site for the duration of wall construction. Any change to the wall crew foreman may require additional training by the wall supplier. The Contractor will ensure that the retaining walls are installed per the details presented in the construction drawings and as per the proprietary wall system requirements. The Engineer reserves the right to suspend wall construction activities due to any construction issue encountered.

Horizontal and vertical nail spacing on temp or permanent soil nail walls shall not exceed 4 ft.

Type DS material will be required on MSE walls in the area of the reinforcement mats.

**--Item 425--**

425-1 Vertical clearance over roadway at the following location(s) is(are) less than or equal to 20 feet. Provide Bars C and CH for the full length of the girder per the IGD standard.  
*List the locations where the vertical clearance for a bridge over the roadway is less than or equal to 20 feet.*

**--Item 427--**

427-1 Provide special surface finish \_\_\_\_\_ to surface area \_\_\_\_\_.  
*Contact Chris Chambers.*

**County:**

**Highway:**

**--Item 432--**

432-1 In all riprap slopes, provide 3 inch diameter weep holes at 10 foot maximum spacing and backed with loose graded gravel or crushed stone and galvanized hardware cloth.

432-2 In areas where guard fence posts are to be placed in riprap, the riprap shall have an 18 inch +/- blocked out area (round or square). After the posts are installed, the blocked out area shall be topped off with 4 inches of low strength grout/mortar consisting of about 1 sack of cement per cubic yard of mix.

432-3 Match the slope of the Riprap (Mow Strip) to the slope of the adjacent roadway.

**--Item 449--**

449-1 The pipe joint compound used to coat the threads of anchor bolts prior to installation of nuts when erecting a high mast pole shall be an electrically conducting protective thread lubricant compound (Crouse-Hinds TL-2, 0z/Gedney STL, Thomas & Betts Kopr-Shield).

**--Item 462--**

462-1 Use lean concrete or 2 sack flowable backfill for fill between pre-cast boxes. Lean concrete and 2 sack flowable backfill shall be considered subsidiary to this bid item.

462-2 The following structures shall be cast-in-place:

\_\_\_\_\_.

462-3 The following structures shall be pre-cast:

\_\_\_\_\_.

**--Item 465--**

465-1 Concrete Class B invert shaping is required at all inlets, manholes and junction boxes in order to insure positive flow. The material and work performed for the placement of the inverts shall be considered subsidiary to this item.

**--Item 496--**

496-1 The Contractor will submit a demolition plan for all structures to be replaced and/or removed in accordance with Item 496.

*Required on all projects removing or replace a bridge structure.*

496-2 The structure(s) to be removed have surface coatings that contain hazardous materials as follows:

\_\_\_\_\_

Provide for the safety and health of employees and abide by all OSHA Standards and Regulations. All costs incurred for proper management, shall be subsidiary to this Item.

**County:****Highway:****--Item 500--**

500-1 "Materials on Hand" payments will not be considered in determining percentages for mobilization payments.

**--Item 502--**

502-1 Place standard markings no later than 14 days after surface treatment operations are completed.

502-2 When advanced warning flashing arrow panels and/or changeable message sign is specified, have one standby unit in good condition at the job site. Standby time shall be considered subsidiary to the bid item.

502-3 Treat the pavement drop-offs as shown in the TCP.

502-4 After written notification, the time frame is provided on the Form 599 to provide properly maintained signs and barricades before considered in non-compliance. Failure to make corrections as noted may result in payment for this item being withheld.

502-5 There are traffic signals at the intersection of \_\_\_\_\_, and \_\_\_\_\_. Keep the signals in operation at all times except when necessary for specific installation operations, including any modifications to existing signal heads to maintain clear visibility at all times. Adjustment of any signal head will be subsidiary to Item 502. When it is necessary for a signal to be turned off, hire off duty police officers to control the traffic until the signals are back in satisfactory condition.

502-6 Moving an existing sign to a temporary location is subsidiary to this Item. Installations with permanent supports at permanent locations will be paid for under the applicable bid item (s).

502-7 Mount temporary mailboxes on plastic drum in accordance with Compliant Work Zone Traffic Control Devices, Section K. Mounting and moving the mailbox as needed for the various construction phases is subsidiary to this Item.

502-8 Notify the Engineer in writing 10 business days in advance of any temporary or permanent lane, ramp, connector, etc. closures/detours, restrictions to lane widths, alterations to vertical clearances, or modifications to radii. Any other modifications to the roadway that may adversely affect the mobility of oversized/overweight trucks also require 10 business days advance written notice to the Engineer. Unless shown in the TCP, no lane, ramp, connector, etc. closures are allowed during special events. At least one lane has to remain open at all times. Lane closures will not be allowed if this reporting requirement is not met.

502-8A For closures not listed in the TCP; the lane closures are limited to between the hours of \_\_\_\_\_, and at least one lane has to remain open at all times.

**County:****Highway:**

- 502-9 Avoid placing stockpiles within the roadway's horizontal clear zone. If a stockpile is placed within the clear zone, address in accordance with the TMUTCD.
- 502-10 Do not place barricades, signs, or any other traffic control devices where they interfere with sight distance at driveways or side streets.
- 502-11 In addition to providing a Contractor's Responsible Person and a phone number for emergency contact, have an employee available to respond on the project for emergencies and for taking corrective measures within 2 hours or within a reasonable time frame as specified by the Engineer.
- 502-12 Temporary Rumble Strips are to be used according to WZ (RS)-16.

Use \_\_\_\_ number of rumble strip arrays.

*Temporary rumble strips are to be used on:*

*One-lane, two-way flagging operations with a posted speed limit of 75 mph or less or*

*Lane closures on conventional highways with a posted speed limit of 75 mph or less.*

*Temporary rumble strips should not be used on horizontal curves, loose gravel (seal coats), soft or bleeding asphalt, heavily rutted pavements or unpaved surfaces.*

*If Portable Traffic Signals or Automated Flagger Assistance Devices are used in lieu of flaggers for lane closures, this standard sheet also applies.*

*See General Notes on WZ (RS)-14 before use.*

- 502-13 If Nighttime work is required and work is not behind positive barrier then full TY 3 reflective gear is required to be worn by all workers, hard hat halos are required to be worn by the flaggers at flagging stations, TY III barricades are required to be spaced at 500 ft, and a mandatory night work meeting is required.
- 502-14 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.
- Required on all projects. Need to show Contractors Force Account Work "Safety Contengecy". Estimated @ 2% of the total Barricades cost. \$1,000 minimum; round up to the nearest \$100 thereafter.*

**County:**

**Highway:**

502-15 Moving or adjustment of traffic signal heads, VIVDS, and radar detection for the purpose of alignment with the shifting of lanes in conjunction with the traffic control plan will be subsidiary to various bid items.

**--Item 504--**

504-1 Furnish one field office type \_\_\_\_\_.  
*Ask the Area Engineer for what type of field office.*

For field office Type E provide at least \_\_\_\_ sq. ft. of gross floor area in rooms 8 ft. high. Partition the floor area into at least \_\_ interconnected rooms with doors, 2 exterior doors, and at least 2 windows in each room. Provide at least \_ parking spaces for pull-through parking.  
*This note is to be used with Field Office Type E. Ask the area Engineer how many inspectors are anticipated for the project. If the number of inspectors is 2 to 5, then specify 1200 sq. ft., at least 4 interconnected rooms, and 6 parking spaces. If the number of inspectors is greater than 5, then specify 1400 sq. ft., at least 6 interconnected rooms, and 10 parking spaces.*

504-2 Enclose the field office and the parking area as shown in 504.2.1.1 and provide security lighting.

504-3 Provide internet connectivity and a laser jet printer/scanner/copier as directed.  
*List any laboratory equipment necessary for testing (cylinder breakers, curing tank, etc.).*

**--Item 506--**

506-1 An Inspector will perform a regularly scheduled SWP3 inspection every 7 calendar days.  
*Need to show in the estimate Contractors Force Account Work "Erosion Control Maintenance".*

OR

506-2 It is not anticipated that erosion control devices will be needed. However; in the event devices are needed, the SW3P shall consist of the control measures approved. Depending on the type and amount of work, payment will be handled with the Force Account Procedure, or by individual pay items.

506-3 Failure to address items noted on the SW3P inspection report within two report cycles may result in the Department stopping all construction operations, exclusive of time charges, or withholding that month's estimate until the SW3P deficiencies are corrected unless the Engineer determines that the area is too wet to correct SW3P deficiencies.

506-4 Failure to correctly maintain daily monitoring reports and submitting to TxDOT on a daily/weekly basis may result in the monthly estimate being withheld.

**--Item 510--**

510-1 The length of the one-way traffic control section is limited to \_\_\_\_ miles.  
*The district preferred methods for one-way traffic control are Pilot Car Method and Portable Traffic Signal Method. Get permission from the Area Office for Flagger Control Method and be sure to pay for each flagger.*

**County:****Highway:**

510-2 Payment for Pilot Car Method includes all necessary flaggers to safely conduct operations. This may involve stationing additional flaggers at public streets and driveways.  
*Required when using Pilot Car Method for One-Way Traffic Control.*

**--Item 512--**

512-1 \_\_\_\_ LF of portable concrete traffic barrier (PCTB) will be furnished by the State. Pick up the barriers at \_\_\_\_\_ and transport to the project.

512-2 Portable traffic barrier manufactured after December 31, 2019 must have been successfully tested to the 2016 edition of MASH and will be manufactured in accordance with the Standard Sheets in the plans. Portable traffic barrier manufactured on or before this date, and successfully tested to NCHRP Report 350 or the 2009 edition of MASH may continue to be used throughout their normal service lives, but must be the same shape type as shown in the plans.

512-3 Only Single Slope shape CTB may be furnished on the inside shoulder/inside median of the Interstate or Freeway Main Lanes.

More than one shape type of CTB may be furnished on a project, although no mixing of CTB shape types will be permitted along a continuous segment of CTB.

**--Item 514--**

514-1 The Type 3 CTB taper from the Type 2 at obstructions (OSB's, bridge, columns, etc.) shall be 40:1. If gravel is used between the barriers as shown by the Standard Sheet, the top six inches shall be CL A concrete.

514-2 Any permanent CTB requiring conduit for illumination must be cast in place or slip formed.

**--Item 529--**

529-1 Class "C" concrete is required for machine extruded curb.

529-2 Curb inlets and extensions are based on an exposed curb height of 7 inches. The roadway curb height and shape will be transitioned to the inlet's curb with a 40: 1 taper.

**--Item 531--**

531-1 The curb ramp locations shown in the plans have taken into account the geometric features of the intersection, traffic signals, and the pavement markings. If anything changes during construction, the location of curb ramps must be adjusted to ensure they meet TAS requirements.

**--Item 533--**

533-1 Use Option \_\_ and a width of \_\_ inches for Edgeline Continuous Milled Rumble Strips as shown on the RS standard sheets for edgelines.

**County:**

**Highway:**

*This note should be included when using Continuous Milled Rumble Strips for edgelines (See RS standard sheets). Use Option 1 or 2, and an 8 inch width, or use Option 6 with Profile Edgeline Markings if the shoulder is 4 feet or less on non-freeways for bicycle comfort and safety. Consult with the District Traffic Section. Refer to Note 10 on the RS standard sheets for Edgeline Rumble Strips for roadways with high bicycle activity.*

**--Item 540--**

540-1 MBGF posts shall be round with domed tops, and not painted. If 10 or less timber posts are needed, they may be purchased locally and will be accepted by visual inspection.

540-2 Guard fence posts placed in proposed and/or existing areas of riprap, sidewalks or other concrete shall have an 18 inch +/- (square or round) block out in the concrete. After the posts are installed, the blocked out area shall be topped off with 4 inches of low strength grout/mortar consisting of about 1 sack of cement per cubic yard of mix.

540-4 When connecting a Thrie-Beam to a concrete wingwall, bridge rail, CTB, etc., drill the holes for bolt placement using rotary or core type equipment. Use a core type drill when reinforcing steel is encountered. Do not use percussion or impact drilling. Repair damage to the concrete and spalls exceeding 1/2" from the edge of the hole.

**--Item 542--**

542-1 Salvage all undamaged/acceptable radius guardrail and deliver to the TxDOT maintenance section yard.

**--Item 545--**

See the Crash Cushion Summary Sheet.

**--Item 556--**

556-1 Coarse Aggregate Grade 3 meeting requirements of Item 421, Table 4, is acceptable for Filter Material.

*Contact the Lab Engineer if there is a need to remove the note above.*

**--Item 585--**

585-1A Use Surface Test Type B, pay adjustment schedule \_\_\_\_\_ to evaluate ride quality of travel lanes.

*See "Guidance Document for" Item 585 "Ride Quality for Pavement Surfaces" and contact the Pavement Engineer.*

OR

585-1B Ride quality requirements are waived.

**County:****Highway:****--Item 610--**

- 610-1 Fabricate steel roadway illumination poles in accordance with the RIP standards. Poles fabricated according to RIP require no shop drawings. Alternate designs or the use of aluminum to fabricate poles will require the submission of shop drawings electronically.
- For instructions on submitting shop drawings electronically go to:  
<http://www.txdot.gov/business/resources/specifications/shop-drawings.html> File is titled: Guide to Electronic Shop Drawing Submittal.
- Provide lamps from the pre-qualified Materials Producers List, Category is "Roadway Illumination and Electrical Supplies" located on the Construction Divisions (CST) web site.
- 610-2 Ballast/capacitors removed from the light assembly, will remain the property of the State. Assume all ballast/capacitors contain Polychlorinated Biphenyl (PCB), unless a notation appears on the outside of the unit that specifies it does not contain PCB's. All ballast/capacitors with PCB's shall be placed in 55 gallon open top drum in accordance with Department of Transportation (DOT) specifications. Place six (6) inches of sawdust or other absorbent material in the bottom of the drum. Furnish and place a DOT approved PCB warning label on the outside of the drum. Do not fill a drum more than  $\frac{3}{4}$  of capacity. Avoid rupturing the ballast/capacitor(s). If a ballast/capacitor is ruptured, use proper procedures, specialist trained staff and personal protective equipment for the clean-up operations.
- 610-3 The lamps in light fixtures may contain hazardous levels of mercury, halide, and sodium vapors. Observe and comply with all federal, state and local laws, ordinances and regulations regarding the management of these lamps. Prevent the breakage of the lamps. At a minimum, package all lamps removed from the light fixture(s) in a container that minimizes the breakage of the lamps. Broken lamps shall be collected in a sealed plastic bag (i.e. Ziploc). Broken lamps shall be stored in separate containers from unbroken lamps. Furnish a suitable container and attach a label stating "Universal Waste Lamps" on the container. Write the date the first lamp was placed in the container on the "Universal Waste Lamp" label. Within one (1) week after the first lamp is placed in a container, notify the Engineer. The lamps and PCB containing ballast/capacitors, placed in properly labeled containers, will remain the property of the State. Place the container in an area where it is protected from damage and the elements. The Engineer will make arrangements to collect, transport, and dispose/recycle the container. The ballast/capacitor and lamp's removal and storage is subsidiary to this item.
- 610-4 Stencil each illumination assembly with the circuit, light and relay numbers in black paint on the roadway side of the pole at a 45 degree angle. The numbers shall be in 3" tall and begin 6' from the top of the foundation. This work will be considered subsidiary to this item.
- 610-5 Provide and install steel, locking, theft-deterrent doors on transformer bases to protect against copper theft. Return standard t-base doors to TxDOT.

**County:**

**Highway:**

**--Item 613--**

613-1 Use an electrically conducting protective thread lubricant compound (Crouse-Hinds TL-2, OZ/Gedney STL, Thomas & Betts Kopr-Shield) for the pipe joint compound to coat the threads of the anchor bolts, prior to installation of nuts.

**--Item 614--**

614-1 Fabricate high mast ring assemblies in accordance with shop drawings approved by the Department. Submit shop drawings for each project, or use pre-approved standard shop drawings.

For project specific shop drawings, furnish seven sets of drawings of the complete assembly in accordance with Item 441, "Steel Structures". Deliver shop drawings to the Director of Traffic Operations Division, Texas Department of Transportation, 125 East 11<sup>th</sup> Street, Austin, Texas 78701-2483.

To be eligible to use pre-approved standard shop drawings, the shop drawing must be submitted and approved by the Department prior to use on the project. Deviation from the pre-approved standard shop drawing will require resubmission of the shop drawings. The Engineer may approve, in writing, the use of updated standard drawings in cases where the standard drawings have been updated and the updated version has been approved by the Department.

For pre-approval and updates to previously approved standard shop drawings, furnish seven sets of drawings of the complete assembly in accordance with Item 441, "Steel Structures" to the Director of Traffic Operations Division, Texas Department of Transportation, 125 East 11<sup>th</sup> Street, Austin, Texas 78701-2483.

Copies of the standard shop drawings are on file with Traffic Operations Division, Bridge Division, and the Materials Section of Construction Division. Additional shop drawings for high mast illumination assemblies built in accordance with these drawings are not required. Pre-approved shop drawing manufacturers and assembly model numbers can be found on the Materials Produce list of the Construction Divisions (CST) web site.

Category is roadway illumination and electrical supplies.

**--Item 618--**

618-1 It might be necessary to cut concrete for placement of conduit. Saw cut existing concrete, remove the concrete from the steel reinforcement (bars or fabric) and bend the steel to install the conduit. After the conduit has been placed, bend the steel back to its original position and back-fill the trench with an approved concrete. This work is subsidiary to this Item.

618-2 The conduit depth for illumination under the City of San Antonio streets is 36 inches.

**County:**

**Highway:**

618-3 Use materials from Material Producers list as shown on the Construction Division’s (CST) web site. Category is “Roadway Illumination and Electrical Supplies.”

**--Item 620--**

620-1 For both transformer and shoe-base type illumination poles, provide double-pole breakaway fuse holder as shown on the Construction Division’s (CST) materials producers list Category is “Roadway Illumination and Electrical Supplies.” Fuse holder is shown on list under Items 610 & 620.

620-2 Provide 10 amp time delay fuses.

**--Item 628--**

628-1 Make all arrangements for electrical service, and compliance with local standards and practices for proper installations.

**--Item 644--**

644-1 The wedge anchor system shown on State Standard Sheet SMD (TWT) is not allowed.

644-2 The set screw type for Triangular Slipbase Systems is not allowed. Use the following products for the Triangular Slipbase System.

Triangular Slip Base Systems  
(For use with 10 BWG and Schedule 80 Round Posts)

Southern Plains Fabrication	SPF Triangular Slipbase Housing	<a href="mailto:Info@SouthernPlainsFabrication.com">Info@SouthernPlainsFabrication.com</a> <a href="http://SouthernPlainsFabrication.com">http://SouthernPlainsFabrication.com</a> (806) 241-0060
Structural and Steel Products	Triangular Slipbase Breakaway Support	<a href="mailto:CustServ@s-steel.com">CustServ@s-steel.com</a> <a href="http://s-steel.com">http://s-steel.com</a> (800) 782-5804

*This note was added because the set screw type triangular slipbase system doesn’t have enough surface contact/friction to keep the wind from causing the signs to rotate and eventually stripping the set screw.*

**--Item 658--**

658-1 CTB reflectors will not be paid for directly but will be considered subsidiary to the barrier.

**--Item 662--**

662-1 Raised reflective pavement markings are required when using work zone reflective pavement markings for lane lines as shown in the standards. The raised reflective pavement markings must be placed during the same operation for installation of the work zone reflective pavement

**County:**

**Highway:**

markings and placed before the roadway is open to traffic. These raised reflective pavement markings will be subsidiary to work zone pavement markings.

**--Item 666--**

666-1 Use TY II material (vs. an acrylic or epoxy) as the sealer for the TY I markings, place the TY II a minimum of 14 calendar days (to provide adequate curing) before placing the TY I markings.

666-2 Failure to provide the retroreflectometer testing data within the time specified in the specifications will result in non-payment of the bid item.

**--Item 672--**

672-1 Place all adhesive material directly from the heated dispenser to the pavement. Do not use portable or non-heated containers. Use adhesive of sufficient thickness so that when the marker is pressed into the adhesive, 1/8" or more adhesive will remain under 100% of the marker. The adhesive should extend not less than 1/2" but not more than 1 1/2" beyond the perimeter of the marker.

**--Item 677--**

677-1 Obtain approval before using the mechanical method for the elimination of existing thermoplastic pavement markings.

**--Item 680--**

680-1 Furnish and install all required materials and equipment necessary for the complete and operating traffic signal installation at the following intersections:

\_\_\_\_\_.

680-2 All workers installing electrical materials, including conduit in trenches, service poles and all other system electrical apparatus, will be directly supervised by persons who have completed a TxDOT approved course in electrical underground installations. Furnish evidence of satisfactory completion of the underground electrical installation for roadway illumination and signal control course for all personnel responsible for direct supervision of electrical installation work.

680-3 The locations shown on the plans for signal pole foundations, controller foundations, conduit and other items may be adjusted to better fit field conditions as approved.

680-4 Furnish and install a new Henke Enterprises or Mobotrex eight-phase NEMA TS2 Type 2 controller and cabinet, meeting the requirements of Departmental Materials Specifications DMS-11170. Provide detector panel toggle switches that additionally permit the user to disconnect the detector. For both ground and pole-mount cabinets, provide cabinet configuration with 16 position load bay.

**County:****Highway:**

- 680-5 Deliver TS type 2 controller cabinet and assembly to the TxDOT San Antonio district signal shop for programming and testing two weeks in advance prior to contractor installing equipment in the field. Coordinate drop off and pick up with Craig Williams (210) 731-5143.
- 680-6 Connect all field wiring to the controller assembly into the polyphaser. The Signal Shop representative will assist in determining how the detection cables are to be connected, and will also program the controller for operation, hook up the malfunction management unit (MMU) or conflict monitor, detector units, and other equipment, and turn on the controller. Have a qualified technician on the project site to place the traffic signals in operation.
- 680-7 Once final punch list is complete, contractor is allowed to begin flashing signal operations. Signal shall flash for a minimum of 7 days prior to full operation, unless otherwise approved by the Engineer.
- 680-8 Use LED lamps from the prequalified material producer lists as shown on the Texas Department of Transportation (TxDOT) – Construction Division’s (CST) material producer list. Category is “Roadway Illumination and Electrical Supplies.” under item 610. No substitutions will be allowed for materials found on this list.
- 680-9 Demonstrate that the field wiring is properly installed, install the controller assembly, connect the wiring and turn on the controller.
- 680-10 The following wiring sequence shall be used when connecting signal sections to the cabinet:

<b>Conductor No.</b>	<b>Base Color</b>	<b>Tracer Color</b>	<b>Signal Face</b>
1	Black		Yellow Ball
2	White		Neutral
3	Red		Red Ball
4	Green		Green Ball
5	Orange		Yellow Arrow
6	Blue		Green Arrow
7	White	Black	Spare

- 680-11 All existing signal equipment with the exception of the signal controller and related equipment become the property of the Contractor. Deliver the controller and related equipment to the Signal

**County:****Highway:**

shop, located at 4615 NW Loop 410 (corner of IH 410 and Callaghan Road) in San Antonio, Texas or to the Area Office as directed.

- 680-12 Use qualified personnel to respond to and diagnose all trouble calls during the thirty-day test period. Repair any malfunction to Contractor-supplied signal equipment. Provide to the Engineer a local telephone number, not subject to frequent changes and available on a 24-hour basis, for reporting trouble calls. Response time to reported calls must 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 or MMU during the thirty-day test period without approval.
- 680-13 Integrate the proposed traffic signal(s) into the existing Advanced Traffic Management System (ATMS) as shown on the plans. Centrac's ATMS software, which utilizes Econolite controllers, is currently in use in the San Antonio District. Provide controllers on this project that fully communicate with the existing ATMS software. For use when signal controller is furnished by contractor.
- 680-14 This project includes the installation of at least one cellular modem at the location(s) specified in the plans. Cellular modem(s) and power supply(s) will be furnished by the department. Provide all materials not supplied by the department necessary for the cellular modem installation. All materials provided by the contractor must be new unless otherwise shown on the plans. Equipment provided by the department shall be stored by the department for pick up at the TxDOT San Antonio district office, 4615 NW Loop 410 San Antonio, TX 78229. Prevent damage to all cellular modem components supplied by the department. Replace any component that is damaged or lost during transportation or installation at the contractor's expense. Verify operation of the cellular modem(s) together with operation of its links; demonstrate that data can be transmitted at a satisfactory rate from the field location to the central location. Demonstrate that the cellular modem(s) data packets are being received at the central site via a networked computer. Transportation, installation and incidentals for installation of the cellular modem(s) shall be considered subsidiary to item 680. For use when a cellular communication link will be established to Transguide.
- 680-15 Provide a submittal compliance matrix with all traffic signal submittals.
- 680-16 Contractor shall be responsible for field verifying the depths of the drill shafts to meet the minimum clearances specified in the plans before ordering materials.
- 680-17 Damage to existing facilities such as traffic signal equipment, conduit, cables, etc. caused by the contractor during construction will be replaced by the contractor at no cost to TxDOT with equipment as approved by the engineer. Replace all pavements, sidewalk, curb, rip-rap or any item damaged during construction subsidiary to various bid items with no direct payment. Any damage that was not caused by the contractor during operations will be reimbursed for repair of damage caused by: motor vehicle, watercraft, aircraft, or railroad-train incident, vandalism or

**County:****Highway:**

acts of God, such as earthquake, tidal wave, tornado, hurricane, or other cataclysmic phenomena of nature.

- 680-18 Ensure that all TMS (Traffic Management System) equipment furnished and installed is completely compatible with the existing hardware and software located within the Transguide operations center (i.e. Transguide central software). The contractor shall contact the traffic management engineer for details on the system network architecture.
- 680-19 Contractor shall be responsible for integrating and testing all new TMS equipment and any existing TMS equipment that is relocated into the existing network management system, subsidiary to the various bid items.
- 680-20 Security against theft and vandalism of all traffic signal equipment is the full responsibility of the contractor until the date of final acceptance of the project by the engineer.
- 680-21 Maintenance of all TMS equipment furnished and installed on this project is the full responsibility of the contractor until date of final acceptance of this project by the engineer. All required documentation must be turned in before TxDOT will accept project for maintenance.
- 680-22 Perform all electrical work in accordance with the National Electrical Code and Texas Department of Transportation Specifications.
- 680-23 In accordance with the Underground Facility Damage Prevention Act (One Call Bill) the phone number for a utility locator is 1-800-545-6005. It is the Contractor's responsibility to make arrangements for utility locators as needed.
- 680-24 Underground utilities owned by the Texas Department of Transportation may be present within the Right-Of-Way. Call the TxDOT offices listed below for locates a minimum of 48 hours in advance of excavation. If city or town owned irrigation facilities are present, call the appropriate department of the local city or town a minimum of 48 hours in advance of excavation. The Contractor is liable for all damages incurred to the above mentioned utilities when working without having the utilities located prior to excavation.
- Item 682--**
- 682-1 Provide all signal heads from the same manufacturer. Pedestrian signals may be by a different manufacturer than the vehicle signal heads.
- 682-2 Cover all signal faces until placed in operation.
- 682-3 All pedestrian signal faces shall be single section LED Type. Die cast polycarbonate is acceptable in lieu of die cast aluminum. All mounting attachments shall be constructed of steel pipe and mounted as shown on the plans.

**County:****Highway:**

682-4 For all proposed mast arm pole assemblies, use mounting bracket assembly Option "C" as shown on the State Standard Sheet(s) "Single Mast Arm Assemblies".

**--Item 684--**

684-1 Provide an extra 10' for each cable terminating in the controller cabinet. All cables shall be continuous without splices from terminal point to terminal point. All proposed signal cable shall be #12 AWG stranded copper.

**--Item 686 & 687--**

686-1 Provide all signal poles from the same manufacturer. Pedestrian poles may be from a different manufacturer.

**--Item 688--**

688-1 The sealant used for vehicle loop wire must be approved.

688-2 The force to activate the control shall be no greater than 5 lb/f. The button placement has to be coordinated with the concrete pad to access the button and if any mounting modifications are needed (extensions, brackets, etc.) to meet ADA and TDLR requirements the adjustment will be subsidiary to Item 688. The concrete pad (if required) shall be paid separately.

688-3 The pedestrian push button shall be wired with a 2/C#14 loop detector cable in lieu of a #12 A.W.G. XHHW wire.

688-4 Furnish and install new Polara Enterprises accessible pedestrian signals (APS) push buttons or approved equivalent.

**--Item 730--**

730-1 Mow full-width and hand trim the right of way, including newly seeded or sodded areas, when vegetation reaches a height of 16" or when directed. Removal of brush sprouts growing within guardrail, concrete barriers or at other locations where mowing or hand trimming is done within the limits of construction is required and subsidiary to this item. Mowing may be required more often in newly sodded or seeded areas than in other parts of the project because of the supplemental irrigation these areas receive and the resulting weed growth. Coordinate mowing to avoid rutting or compaction of the soil when mowing where supplemental irrigation is being used. Use mowing equipment that will not adversely affect soil retention blankets or mulches that have been applied. Work performed under this item does not replace the mowing required when placing permanent seeding in an area that has established temporary seeding as described in Article 164.3, Construction.

*If this work is set up to be paid on a Federal Aid Project, this payment will be Non-Federal-Participation. Mowing should be used on projects with duration of 6 months or longer, and should be paid by the cycle at 4 cycles per year. Use the districtwide Special Provision to Item 730 to add measurement and payment option by the cycle.*

**County:**

**Highway:**

**--Item 734 & 738--**

734 &  
738-1 Perform Litter Removal and Cleaning and Sweeping Highways once a month or as directed.  
*If this work is set up to be paid on a Federal Aid Project, this payment will be Non-Federal-Participation. Each of these items should be used on projects with duration of 6 months or longer, and should be paid by the cycle at a rate of 1 cycle per month.*

**--Item 3085--**

3085-1 The minimum application rates are listed in Table UC. The Engineer may adjust the application rates taking into consideration the existing pavement surface conditions.

Table UC

Material	Minimum Application Rate (gal. per square yard)
TRAIL – Hot Asphalt	0.15
Spray Applied Underseal Membrane	0.20
Seal Coat – Emulsion (CHFRS-2P, CRS-2P)	0.25
Seal Coat – Asphalt (AC-15P, AC-20-5TR, AC-20XP, AC10-2TR)	0.23
Aggregate for Seal Coat Options TY PB GR 4(AC) or TY B GR 4(Emulsion)	1 CY:120 SY

*This note is to be used to allow the contractor to choose the underseal for Items 340, 3076, 3077 and 346 on a mill and fill operation. An exception to using this special specification is if you are allowing traffic to drive on the underseal for an extended period of time during construction in which case you should specify a one course surface treatment.*

**--Item 4001--**

4001-1 For Asphalt-Plug Expansion Joints, the following suppliers are approved:

FlexAble Bridge Joint System  
Deery American Corporation.  
PO Box 4099  
Grand Junction, CO 81502  
Attn: San Kearn  
800-227-4059

Matrix 502 Asphalt Plug  
D.S. Brown Co.  
300 E. Cherry St.  
North Baltimore, OH 45872  
419-257-3561

**County:**

**Highway:**

Thorma-Joint  
Dynamic Surface Applications, Ltd.  
373 Village Road  
Pennsdale, PA 17756  
Attn: Mike Stachowicz  
800-491-5663 Ext. 1

Wabo-Expandex  
BASF  
3011 Heatherpark Drive  
Kingwood, TX 77345  
Attn: Mark Huff  
713-392-4833

**--Item 4161--**

- 4161-1 Stencil structure number shown below for each of the following listed bridges in accordance to the special specification and San Antonio District Standard.  
*Ask the District Bridge Engineer if the existing structures within the projects will need stenciling of permanent structure numbers. Use of this item requires a request for the OTU special specification until a districtwide special specification is approved.*

**--Item 6185--**

- 6185-1 \_\_\_ shadow vehicles with TMA will be required for this project. The TMA's will be measured and paid for by the DAY for each TMA/TA set up and operational on the worksite. The contractor will be responsible for determining if one or more of these operations will be ongoing at the same time to determine the total number of TMA's needed for the project. See TMA and TA Summary sheet in the plans.

**--Item 6292--**

- 6292-1 Radar presence detection device must utilize true-presence detection. Systems using locking algorithms to attempt presence detection will not be accepted. In addition, radar systems will not be allowed to use extensions/delays or place the controller on locking detection to aid in presence detection.
- 6292-2 Radar presence detection device must be able to detect up to 10 lanes with a minimum offset of 6' and have at least 16 zones and channels per unit.
- 6292-3 Radar presence detection device must be mounted on the same side of the intersection as the lanes it is set to detect.
- 6292-4 Final placement of radar devices shall be approved by the engineer.

**Control:**

**Sheet**

**County:**

**Highway:**

6292-5

Furnish and install new Wavetronix SmartSensor Matrix, or approved equivalent, for radar presence detectors and Wavetronix SmartSensor Advance, or approved equivalent, for radar advanced detection devices.

**--TMS General Notes--**

*(Contact John Gianotti if project contains TMS items)*