

Austin District Designers Guide

Maintained by Austin District Construction Office (DCO)

Summary of changes are at the end of the guide and highlighted in green.

Area Office (AO) and Maintenance Section (MS) shall be contacted early to gather project specific guidance.

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Preface

These guidelines are maintained by the District Construction Office (DCO) to serve as a quick reference to all designers developing projects for the Austin District. The purpose is to produce a more standardized approach for Austin District projects.

General Plan Sheet Preparation

Preliminary Plans Posted Online

1. Project Wise for district guidance
 1. pw:\\txdot.projectwiseonline.com:TXDOT4\Documents\14 - AUS\Offices\Design\Plans Posting Guidance
2. Post 90% projects with estimate >\$10M
3. Use AUS_PreliminaryReview@txdot.gov email address to receive comments

Standards

1. Include all the BC (Barricade and Construction) and WZ (Work Zone) standards in all plans.
 1. This includes the rumble stripe standard WZ(RS)-14.
2. Include TCP(3-1) thru (3-4) standards in all plans. These are the standards used for installation and removal of lane closures.
3. Use Statewide ITS standard in lieu of Austin district standards

Stationing

1. Differentiate alignments if roadway has multiple, parallel alignments, for example:
 1. Main Lanes "3755+00"
 2. Northbound Frontage Road "13755+00"
 3. Southbound Frontage Road "23755+00"
2. Use alignment names that describe the purpose, such as:
 1. NBFR for Northbound Frontage Road
 2. SBML for Southbound Main lane
 3. NBEX for Northbound Exit Ramp
 4. SBEN for Southbound Entrance Ramp
 5. RW1 for Retaining Wall 1
 1. Switch to a new wall name and alignment when turning a corner. See [Appendix E](#).

Typical Sections

1. Document the existing pavement depth by review of old plans, take cores, or check with local TxDOT office.
2. Do not include
3. Verify conditions of pavement for full depth repair.
 1. Area Office can provide depth of repair.
4. Reference the ACP Plan Preparation Guide in [Appendix B](#).
5. For urban widening 6' or less, use Class B unreinforced concrete in lieu of base (2:1) and hot-mix (1:1). Use bid item 420-6012. See [Appendix D](#) for detail.
6. Label tapered edge of hot-mix and flex base at recommended 2H:1V.

Traffic Control - Multiple Phases

1. Use “Phase” and “Step” terminology. Avoid using the term “Stage”.
2. Use numbers to designate order, for example:
 1. Phase 1 followed by Phase 2.
 2. Phase 1-Step 1; Phase 1-Step 2; Phase 2, etc.

Asset Maintenance Sheets

1. Include AUS standard Asset Maintenance sheet.
 1. See Appendix S for process and when to include.
 2. Required to ensure the city is aware of assets they maintain per the MMA (Municipal Maintenance Agreement) and stipulated in the Texas Transportation Code.

Vertical Profile

1. Widen or overlay roadway without changing the vertical profile.
 1. Review Item 5 in general notes
 2. Provide profile data to verify roadway meets design requirements.
 3. Profile data may be provided in table format.
 4. Include the following note with the profile data
 1. The profile grade is a guide and for design verification purposes only. Construct the pavement in accordance with the typical section.

Horizontal Alignment

1. Widen or overlay roadway without changing the horizontal alignment.
 1. Review Item 5 in general notes
 2. Provide alignment data to verify roadway meets design requirements.
 3. Horizontal data may be provided in table format.
 4. Include the following note with the horizontal data
 1. The horizontal data is a guide and for design verification purposes only. Construct the pavement in accordance with the typical section.

Project Schedule and Duration

Construction Production Rates

1. Production rates can be found at <http://ftp.dot.state.tx.us/pub/txdot/cst/cst-production-rates-030118.pdf> or in Project Wise 14 - AUS\Offices\Construction\Designers Guide\
 1. Default production rate use medium.

A + B Bidding

1. A + B guide includes a list of candidate projects.
 1. A + B guide in project wise 14 - AUS\Offices\Construction\Designers Guide\
2. Contact Director of Construction or Jesus Valdez for approval to use A + B.

Item 8 Prosecution and Progress (Contract Time Determination)

1. See [Appendix A, A-1](#), and [A-2](#) for additional guidance.
2. All schedules with greater than 24-month duration require DCO review.
 1. Please forward to Jesus Valdez for review.
3. All 5, 6 and 7 day workweek projects require DCO review of schedule.
 1. DCO review to verify time charges account for weather and holidays.
4. Use 5 day or 6 day workweek for roadways with ADT > 50,000
5. Use Standard Workweek 8.3.1.4 for following projects
 1. Overlays, seal coats, durations shorter than 9 months, and off-system bridges
6. Include lane rental fee per blind note in Item 8
 1. See [Appendix O](#) for additional information
7. Include following notes in projects over \$20 million
Maintain a project fact sheet to be reviewed and distributed by TXDOT. Update the fact sheet monthly and submit via email to AUS_Auditors@txdot.gov by 10th of each month. Include a supplemental sheet with pictures of previous month major work items and description of the work shown in the picture. The fact sheet template will be provided by TXDOT.

Provide via email a 3 week look-ahead schedule in Gantt chart format. Submit weekly prior to the project meeting or by noon on Friday, whichever comes first. Each activity will be designated as night or day shift and include the name of the foreman or contractor. The chart shall have a specific section dedicated solely to lane closures and detours. Each lane closure and detour shall be an individual item on the schedule.

Provide a cash flow report by including a cost per activity for a minimum of 80 percent of the contract value. The cash flow report shall include a diagram showing the actual and projected monthly estimates thru the end of the project. The projected monthly estimates shall provide values based on the early and late start of the activities. The monthly updating of the project schedule will include updating this report.

Project Specific Guide

IH 35 My 35 Mobility Projects and IH 35 Non-Overlay Projects

1. Additional Item and plan guidance provided in [Appendix G](#)

Overlay and Preventive Maintenance Projects

1. Reference the ACP Plan Preparation Guide in [Appendix B](#).
2. Visit the project site and look for areas in need of improvement, and check with the Area Office Maintenance Section supervisor for issues that should be corrected.
3. Include TxDOT Standard TE(HMAC)-11.
4. Include SP 008-005.
 1. Asphalt Season is listed in the Master General Notes under Item 300.
 2. Latest work start date is listed in Master General Notes under Item 8.
5. Use the Standard Workweek.
6. Include Item 506 for erosion logs in lieu of silt fence. Include a minimum 100 LF.
7. Include [Item 134](#) for Type A Backfill unless curbed roadway
8. Include [Item 351](#) for base repairs.
9. Include [Item 688](#) to replace existing signal loops or upgrade to other detection method.
10. Update Metal Beam Guard Fence (MBGF) to new standard and correct height
 1. See project specific guide for [Metal Beam Guard Fence Adjust/Update](#)
11. Update all Guardrail End Treatments to new standard and correct height
12. Include plan detail showing tapers into driveways and intersections.
13. Include edge and centerline profile markings per guidance in Item 666
14. Mill off all existing hot-mix on bridge decks prior to overlay.
15. Mill under existing bridges/structures to maintain vertical clearance.
16. Do not overlay or use seal coat on an existing direct traffic concrete bridge deck
17. Avoid raising roadway profile in a flood plain.
 1. Provide mill detail to maintain existing profile elevation, or
 2. Coordinate with FEMA floodplain to confirm “No Adverse Impact”
18. Consider modifications to existing striping for:
 1. Areas to improve operations, and
 2. Areas to improve bike accommodations (check with District bike coordinator).
19. Include [Item 454](#) for replacement of existing header joints
20. Verify with Area Office if need to include the following items:
 1. [Item 100](#) and prune detail
21. Is Type D level-up necessary to obtain cross slope and fix rutting?
 1. Required when overlay thickness is 1” or less
 2. For all roads east of I-35, visible rutting, or a bumpy ride include quantity equal to 10% of the surface quantity
22. PS&E or APD Stage gate checklist not required if project has minimal disturbance such as sign installation or metal beam guard fence.
 1. District policy (Shirley Nichols) allowed by the EMS manual.

Off-System and Small Bridge Projects

1. Bridge default components
 1. Default beams use slab beams item 0425-6009 thru 0425-6012 (capable spanning 50')
 2. Default rail use T223 0450-6006 or C223 0450-6032
 3. Default abutment slope protection in waterway use stone riprap item 0432-6030

2. Off-System default typical section:
 1. For Urban Areas: 4" of flex base, 4" of blade lay Type B hot-mix, and 1.5" Type D surface.
 2. For Rural Areas: 6" of flex base and 3" Type D surface.
 3. No seal coat surface, under seal, or prime on base due to small qty.
 4. Use Item 340 due to small quantity.
 5. Do not use Item 347 or Item 344.
3. For cost reduction add the following to the general notes:
 1. [Item 247](#) - Flex base is placed via ordinary compaction.
 2. [Item 340](#) - Type B (and D for rural areas) hot-mix may be placed with a motor grader.
4. Use Type B Embankment.
5. Striping is required.
 1. Use Item 672 in lieu of [Item 666](#) to eliminate retro test.
6. Include SS 4027 for payment of construction access to a river. (currently a OTU SS)

Culvert Widening, Installation, and Replacement

1. Use SETs as 1st option to protect end of culvert/pipe.
 1. MBGF is option but creates a long-term maintenance commitment.
2. Include temporary shoring when necessary.
 1. Temporary shoring for area parallel to traffic to include parallel wing walls (bid item 403-6001).
 2. Excavation for widenings typically creates a vertical face that requires shoring to allow for culvert extensions and headwall construction.
3. Include trench excavation protection when necessary trench excavation protection for area parallel to culvert extension (bid item 402-6001).
4. Consider handling of traffic if culvert requires lane reduction.
 1. Is ADT too high for use of one-way traffic control?
 2. Can the work be completed during a daytime work shift and travel lane restored?
 3. Should the work be completed on a weekend due to extent of work?
 4. Add necessary pay items and notes in plans to provide guidance on when and how to perform the work if it impacts travel lane.
5. Example project CSJ 0577-01-026 (For letting date, contact Central Design)
6. Protect edge condition using following options
 1. Refer to TxDOT Standard Worksheet for Edge Condition Treatment Types.
 2. Positive barrier, such as:
 1. MBGF and allow reuse for permanent installation
 2. portable metal barrier
 3. Barrels in accordance with BC(10)-14.
 1. If elect to use barrels, reference BC(10)-14 in plans as selected TCP.
 4. One-way traffic control.
 5. Temporary Traffic Signals.
7. Include Rock Filter Dams TY 2 0506-6002 downstream of culvert widening
8. Include Rock Filter Dams Ty 4 0506-6004. These allow easy movement during widening.

Notch and Widen

1. Rural road projects with 5,000 or less ADT reference CSJ 0573-01-032 (Jan 2020 letting) for go by plans and pay items required.
 1. Notch shall have 1' overlap to existing pavement to avoid a vertical joint. See [Appendix D](#).
 2. Sealcoat or underseal entire roadway.
 1. Minimum seal the widen section plus 1' onto the existing to seal the joint between the existing and new pavement.

3. Include Type D level up to re-establish required cross slope or super elevation.
 1. See following plan notes to be placed on typical sections.
 1. Perform variable depth level up to re-establish cross slope and super elevation. Complete level up prior to begin widening.
 2. Prior to level up, perform necessary survey to provide the required cross slope and super elevation.
 3. If new cross slope or super elevation is not provided, provide 2 percent cross slope and maintain existing super elevation.
 4. If not adjusting the roadway profile or alignment, please refer to Vertical Profile and Horizontal Alignment guidance.
 5. Include base repair [Item 351](#).
 6. Include Type 4 Rock Filter Dams 0506-6004. These allow easy movement during widening.

Edwards Aquifer PSL

1. Designate a PSL
 1. Project Specific Location (PSL) – this is a location used as parking areas, storage areas, field offices, or staging areas.
 2. Include the area of the PSL in the total quantity of disturbed area
 3. Show the area of the PSL on the SW3P or plan sheets.
 4. If a PSL area is not available in the ROW the Contractor will be responsible for approval of an off ROW PSL after letting
2. Include AUS TCEQ standard sheet for recharge or contributing zone

Pedestrians

1. Impacts to existing pedestrian paths will need to be addressed. This includes non ADA compliant paths created by pedestrian traffic.
 1. Provide an alternate route or a temporary path
 2. Temporary Path
 1. Pay item 0531-6033 CONC SIDEWALKS (SPECIAL) TYPE B
 2. [Item 531](#) general note: CONC SIDEWALK (SPECIAL) (TYPE B) is a temporary 3 ft. wide, 3 in. thick concrete (unreinforced, any class) or Type D hotmix sidewalk used to provide a temporary path for pedestrians. This item includes installation, maintenance and removal. All material testing requirements are waived. ADA standards are applicable. Passing zones 5ft. x 5 ft. shall be installed every 200 ft. Orange construction fence along the edge of the sidewalk is required if a drop-off condition exist adjacent to the path. The fence is subsidiary.

Multiple TCP Phases and Traffic Configurations

1. Multiple phases create issues with removal and replace of stripe. Often the removed stripe is still visible and confuses drivers. This is common when making a swap from conventional intersection to an innovative intersection.
 1. Micro mill the roadway to eliminate conflicting stripe using bid item 0354-6134

Total Disturbed Area

1. Increase total disturbed area to 5.0 acres when estimated area is between 4.50 and 4.99.
 1. Typically the contractor disturbs up to an additional 0.50 acres to store equipment and material.
 2. See [Appendix Q](#)

ADA Curb Ramp and Sidewalk Guidance

1. When and where to install? Use the following guide
 1. <http://crossroads.org/des/ada/docs/ADA%20Curb%20Ramp%20and%20Sidewalk%20Guidance.pdf>
2. Summary from guidance document
 1. Curb ramps are required to be included in following projects
 2. New construction, Reconstruction, Rehabilitation, micro surfacing or the addition of any new layer of asphalt, In-place asphalt recycling, Open graded surface course, and Mill & fill / mill & overlay
3. Curb ramps are not required to be included in projects that constitute the following listed maintenance work
 1. Seal coats, Crack filling and sealing, Joint Crack or Surface Seals, Joint repairs, Full-depth pavement spot repair, Diamond grinding, Spot high friction treatment to improve skid resistance, and Slurry seals
4. Sidewalks must be considered for inclusion in urbanized settings on
 1. Full reconstruction projects, New construction projects, Projects within existing right of way that include pavement widening, Facilities that are part of a locally adopted sidewalk planning document, Facilities where there is evidence of pedestrian traffic, Facilities having existing pedestrian features, Facilities located on a route to school(s); or Facilities located on a transit route

Profile Pavement Markings on Existing Roadway

1. This guidance is generated for projects installing profile markings on an existing roadway with existing stripe.
 1. Typically, these are HSIP safety projects with HES funding.
2. General Notes
 1. Include the following general notes
 1. Item 666 – For placement of new profile markings on an existing profile marking, the Engineer shall determine the audible quality of existing profile markings prior to begin work. Acceptable profile markings may be traced over with a Type I non-profile marking. Unacceptable profile markings will require removal and replacement.
3. Method of placement based on existing stripe condition. Designer to determine the correct items based on field observation of existing conditions.
 1. Roadway has existing markings, but they are non-profile markings
 1. Trace over with Type I 60 mil profile marking
 2. Type II marking is not required prior to placement of profile marking
 2. Roadway has existing profile markings in good audible quality but lacking reflectivity
 1. Trace over with Type 1 60 mil non-profile marking
 3. Roadway has existing profile pavement markings in poor audible quality
 1. Eliminate existing profile using Item 677 then trace over with a Type I profile marking

Metal Beam Guard Fence Adjust/Update

1. This guidance is generated for projects updating guard fence on an existing roadway.
 1. Typically, these are HISP safety projects with HES funding.
 2. AUS default is to remove and replace due to complications with adjustment items.
 3. General notes allow contractor to reuse certain material
2. Height Adjustment
 1. Do not use adjust items
 2. Default is to remove and replace all the rail and end treatments
 3. If a portion of rail or end treatment is remaining at 28 in., include item 540-6039 and standard RAIL-ADJ(A)-19 and RAIL-ADJ(B)-19

3. MBGF
 1. See Item 540 and 542 for remove and install items.
4. Guardrail End Treatment
 1. See Item 544 for removal and install items.
5. Mow strip
 1. Include item 104 to remove and item 432 to replace damaged mow strip
 1. For install and remove bid items see Item by Item guide for 432 and 104
 2. Include item 432 to install the approach taper per guard fence mow strip standard
 3. If no visible damage, include a default quantity of 10 CY install and 50 SY removal
6. Embankment
 1. Include default 50 CY Item 132-6019 to embank around the mow strip or guard fence
7. Bridge ends
 1. Update all bridge ends in accordance with latest Bridge End Details standards (BED-14).

Water Quality Ponds and WPAP Projects

1. Use design checklist for plans with these elements.
 1. Checklist is available in project wise 14 - AUS\Offices\Construction\Designers Guide\
2. Include the water quality pond notes in Item 7 that are in the district Master General Notes

River Projects and Cofferdams

1. Include SS 4027 for payment of construction access to a river.
2. Cofferdams
 1. Use pay Item 403-6006
 2. Include the following general notes for Item 403
Contractor is responsible for the temporary cofferdam shoring design; this includes determining the necessary height to perform the required work. Overrun of the cofferdam quantity to increase the height will not be subject to Quantity Based Price Adjustment Factors per Item 4. The height shown in the plans is an engineer estimate for quantity purposes only. Payment will be made for shoring projecting above the water level to accommodate changes in water surface elevations. Sealing the floor within the cofferdam will be subsidiary. The bottom of the cofferdam and the bottom of the river bed shown in the plan is an engineer estimate for quantity purposes only. The actual bottom may vary. Contractor is responsible for adjusting shoring to accommodate the actual bottom of the river. Additional compensation beyond the bid item will not be made to accommodate the actual elevation of the river bed.

Joint Bid Utilities

1. Schedule
 1. Designers schedule shall include joint bid activities
2. Traffic Control
 1. Narrative shall include joint bid utilities
 2. Plans shall address traffic control for joint bid utilities
3. Barricades
 1. ROW CSJ will NOT have a separate pay item 502
4. Mobilization
 1. ROW CSJ shall include a mobilization pay item that is a portion of the entire mobilization
 1. Quantity Calculation
 1. Joint Bid Utility Mobilization = Joint Bid Estimate / Project Estimate
 2. Project Mobilization = 1 – Joint Bid Utility Mobilization

Smart Work Zones

1. Smart Work Zone Guide
 1. <https://ftp.dot.state.tx.us/pub/txdot-info/trf/smart-work-zone-guidelines.pdf>
2. Smart Work Zone System Go/No-Go Decision Tool
 1. Decision tool is in Appendix A of the guide
 2. Complete tool for all roadways with AADT over 50,000
 3. Electronic version of tool can be found by google search “txdot smart work zone system go no go decision tool”
3. Required use of Smart Work Zone Systems
 1. Use system required per the decision tool
 2. Temporary End of Queue
 1. Include per Item 6302 Temporary Queue Detection System
 3. Temporary Travel Time System and Incident Detection and surveillance System
 1. Include on all roadways that have an existing travel time system
 2. Include on roadways listed in Smart Work Zone Project List
4. Smart Work Zone Project List
 1. Intended for following roadways with work on the main lanes except re surface work and ramp work
 2. IH 35 - All
 3. Loop 1 – La Crosse to Parmer Lane
 4. US 183 – SH 45N to US 290
 5. SH 71 – SH 130 to IH 35
 6. US 290 W – IH 35 to William Cannon
 7. Loop 360 – All

Lead and Asbestos

1. Test all bridges for lead and asbestos.
2. Goal is to remediate/removal all hazardous materials before construction.
3. Contact DEQC prior to 60% PS&E for handling of Lead and Asbestos.
4. DEQC will manage remediation with ENV division.
5. Reference the Bill Hale memo dated 4/9/18 stored in T:\Construction\ENV\HAZMAT

Cable Barrier Safety Project

2. Reference CSJ 0113-13-182 (letting March 2020) for go by plans and pay items required for cable barrier safety projects.
3. Reference CSJ 0265-06-032 (letting Sept 2020) for go by plans and pay items required for cable barrier safety projects.

Item by Item Guide

Item 7 Legal Relations and Responsibilities

1. Does the project have unordinary constraints? If so, please add these constraints.
 1. Example: No demo or closure of river from Memorial Day to Labor Day due to river traffic.

Item 8 Prosecution and Progress (Contract Time Determination)

1. Include lane rental fee per blind note in Item 8
 1. See [Appendix O](#) for additional information

Item 9 Measurement and Payment

1. When do you include Force Account for Erosion Control, Safety, Law Enforcement, etc? DCO available to assist with creating estimated \$ amount for each item.

Item 100 Preparing Right of Way

1. All projects include bid item 100-6002.
 1. Master General Note has default pruning note.
 2. Include prune detail for urban projects or a project within a city limit.
 1. Use "PREP ROW PRUNING DETAIL" available from DCO.
2. Designate specific trees for preservation.
 1. Show preservation in tabular form or on plan sheets.
 2. Include tree protection bid item 1004.
 3. Avoid listing those to be removed since omission of a tree to be removed could constitute added work.
3. Items subsidiary to Prep ROW:
 1. Items listed in the spec book under Article 100.2., Construction, will be quantified and shown on the plans, but listed as subsidiary to Prep ROW.
 2. Plan Sheet Note: Items marked with an * or listed in the Standard Specification are subsidiary, such as driveways, sidewalks, parking areas, curb and gutter, drainage structures, manholes, inlets, trees, etc.
4. Items NOT subsidiary to Prep ROW, use necessary bid item:
 1. Default unit of measurement is area (SY) or each (EA).
 2. Avoid use of CY due to varying depths in field.
 3. Large drainage structures, such as headwalls, should have a separate bid item.
 4. Bridges or bridge class culverts use Item 496.
 5. Retaining walls use Item 496.
 6. MBGF use Item 542-6001 and 544-6003
 7. Small, large, and overhead signs use Item 644, 647 or 650.
 8. Electrical services use Item 628.
 9. Roadway illumination use Item 610.

Item 104 Removing Concrete

1. Riprap and mow strips will be paid using Item 104-6009.
2. Concrete medians will be paid using Item 104-6011.

Item 105 Removing Treated and Untreated Base and Asphalt Pavement

1. Must be quantified and paid for separately.
 1. Do not include as part of excavation quantity.
 2. Include quantity summary alongside excavation summary

Item 106 Obliterating Abandoned Road

1. Must be quantified and paid for separately.
 1. Do not include as part of excavation quantity.
2. Requires use of Item 105 to remove base and/or asphalt material.
3. Requires additional topsoil and seed, typically salvage material is not enough.

Item 110 Excavation

1. Provide quantity summary in tabular form by station.

Item 112 Subgrade Widening

1. For use when widening per side is less than 8' and ADT < 5000.
 1. Larger widening projects shall quantify and pay for excavation and embankment
2. Reference CSJ 2176-01-008 (Let 7/8/2016) for typical section and display of excavation and embankment limits.
 1. See [Appendix C](#) for detail.
3. Include following note shown in [Appendix C](#) on typical sections to make all excavation and embankment beyond the subgrade subsidiary to the subgrade widening item.
 1. "Excavation and embankment beyond the edge of the subgrade that is required to construct roadway according to the typical section will be subsidiary to subgrade widening."

Item 132 Embankment

1. Default is Type B Ordinary Compaction bid item 132-6003
2. Provide quantity summary in tabular form by station
3. Type C to control PI may use 132-6005 if approved by the Area Office
4. Do not use Type C1 or C2 unless approved by the Lab. C1 = 132-6047 and C2 = 132-6048
5. Do not use density controlled unless approved by the Area Office
 1. If using density controlled, include Special Provision 132-002

Item 134 Backfill Pavement Edges

1. Use bid item 134-6001 for Type A Backfill.
 1. Master General Notes define Type A material.

Item 160 Topsoil

1. Use in conjunction with Item 162 or Items 164/169.
 1. Limit the amount of disturbance.
 2. No need for ROW to ROW if not disturbed.
2. Default item 160-6003 for 4" topsoil.

Item 161 Compost

1. Not commonly used. Use Item 160.

Item 162 Sodding for Erosion Control

1. Use sod for all urban projects, unless a large area or adjacent to undeveloped property.
 1. Do not use Bermuda sod in the Houston Toad area. Check with ENV.
2. Requires identical quantity of Item 160.
3. Use bid item 162-6002, block sod for small areas.
4. Use bid item 162-6008, roll sod for large areas more than 1000 SY.

Item 164 Seeding for Erosion Control

1. Default is drill seed unless in a small area or steep slopes.
2. Requires identical quantity of Item 160 and 169.
3. Use bid item 164-6071 for temp seeding
 1. Include temp seed for projects longer than 6 months. The quantity shall equal the disturbed area.

Item 168 Vegetative Watering

1. Use bid item 168-6001.
2. For calculation of quantity see Master General Note.

Item 169 Soil Retention Blankets

1. Use to cover ALL disturbed areas.
2. See Item 169.2 Standard Specification book for class and type.

Item 180 Wildflower Seeding

1. Verify with AO to include on reconstruction and rehabilitation projects
2. Below is the default seed mixture table to be inserted in the general notes.

Common Name	Scientific Name	lb. PLS/acre
Illinois Bundleflower	<i>Desmanthus Illinoensis</i>	6.0
Indian Blanket	<i>Gaillardia Pulchella</i>	6.0
Lemon Mint	<i>Mondarda Citriodora</i>	1.0
Bluebonnet	<i>Lupinus Texensis</i>	12.0
Pink Evening Primrose	<i>Oenothera Speciosa</i>	1.0
Black-Eyed Susan	<i>Rudbeckia Hirta</i>	1.0
Indian Paintbrush	<i>Castilleja Miniata</i>	1.0
Partridge Pea	<i>Cassia (Chamaecrista)Fasiculata</i>	8.0
Plains Coreopsis	<i>Coreopsis Tinctoria</i>	1.0

Item 247 Flexible Base

1. Use bid item 247-6366 for Type A Grade 5.
2. Ordinary compaction may be used if < 500 CY or narrow areas (widths 4' or less).
 1. Requires add general note Item 247: "Flex base may be ordinary compaction."

Item 260/263 Lime Treatment

1. Reference the ACP Plan Preparation Guide in [Appendix B](#)
2. Default is to lime treat all subgrade east of I-35
3. Test sulfate of existing soil to determine % lime

Item 275 Cement Treatment (Road-Mixed)

1. Reference the ACP Plan Preparation Guide in [Appendix B](#)

Item 276 Cement Treatment (Plant-Mixed)

1. Default Item 276-6096.
2. This item is for cement treated base material.

Item 316 Seal Coat

1. Reference the ACP Plan Preparation Guide in [Appendix B](#)
2. For surface seal coats use “Seal Coat Material Selection Table”

Item 340 Dense-Graded Hot-Mix Asphalt

1. Use for level-up regardless of tons.
2. Use for narrow areas (widths 4’ or less).
 1. Hard to compact narrow areas and meet Item 3076, etc. testing requirements.

Item 351 Flexible Pavement Structure Repair

1. Default material noted in Master General Notes.
2. Default depth is 6” (351-6002)
3. Default quantity is 10% of total SY of overlay.
4. Check with Area Engineer or Maintenance Supervisor for variations to default

Item 360 Concrete Pavement

1. Hot mix bond breaker should be Item 340.

Item 400 Excavation and Backfill for Structures

1. Flexible pavement section for cut and restore is provided in Master General Notes
 1. Default item is 400-6006
2. Concrete pavement section for cut and restore shall be provided by designer
 1. Default item is 400-6007
 - i. This includes concrete pavement with a hotmix overlay
3. For cut and restore that requires reopen to traffic, provide detail to backfill trench with Cement-Stabilized Backfill per Item 400.

Item 416 Drilled Shaft Foundations

1. Are karst features (caves) a possibility? If so, see [Appendix I](#).

Item 423 Retaining Walls

1. Designate retaining walls by numbers, not letters.

Designers Quick Reference Guide

2. Verify that aesthetic treatment (i.e. surface treatment, metal decals, paint, etc.) are included in the bid price or under a separate item.
3. Show location and outfall of underdrains. Does it tie into a storm sewer or open ended?
4. Avoid use of RCP pipe in retaining walls since the joints are unrestrained. Use of RCP pipe will require concrete pipe collars at the joints.
5. Pay for 6" Type 6 underdrains using item 556-6006.
6. Mow-strip use bid item 432-6045.
 1. Place at the face of the wall. Item 432 master general notes has default 2' wide. Detail not required but location should be shown on wall typical section.

Item 432 Riprap

1. Non-mow strip uses item 432-6006.
 1. Master General Note has default of 5"
2. Mow-strip use bid item 432-6045
 1. Include state standard GF(31)MS-19
 2. Master General Note has default of 4"
 3. Required for guard fence and cable barrier
3. Stone riprap at bridge abutments
 1. Include state standard SRR
 2. Default item 0432-6030 grouted 12" stone
4. Riprap under bridges in low vegetation growth areas
 1. Default item 0432-6028 grouted 6" stone
 2. Use in lieu of concrete riprap or brick pavers.
 3. Not intended for use in waterways under bridges.

Item 450 Railing

1. Traffic rails
 1. Default traffic rail use SSTR
 2. Default SSTR for direct connectors
 3. Default combo rail use C221
 4. Do not use traffic rails that have metal elements (i.e. T1,T77, etc.).
 - i. Metal elements are difficult to repair when damaged.
 - ii. If metal elements are required for aesthetics, do not use metal in a radius. Transition to a full concrete rail to avoid damage and maintenance of a curved metal rail.
2. Use SSTR for direct connectors
3. Pedestrian handrail not on a bridge.
 1. < 30" drop off use Type B 450-6048.
 2. >= 30" drop off use Type F 450-6052.
4. Pedestrian handrail on a bridge.
 1. Use PR11

Item 454 Bridge Expansion Joints

1. For bridges with overlay, use bid item 454-6008 by CY AND 454-6009 by LF.
 1. Used to replace existing header joints for existing overlay.
 2. See Sheet 11 in CSJ 0016-02-141, Letting date 1/8/14 for example detail.

Item 460 Corrugated Metal Pipe

1. Verify existing pipe size during site visit.
2. Default use CMP for driveways.
 1. Use RCP in sandy soils due to CMP rust issues.

Designers Quick Reference Guide

3. No pipes smaller than 18" for storm drains.
4. Do not use for new drainage crossings under roadway. Use RCP.
5. Inspect existing CMP for rust. Replace if necessary with RCP.

Item 462 Concrete Box Culverts and Drains

1. Verify bridge condition survey.
2. Contact District Bridge Office for bridge-class structures.

Item 464 Reinforced Concrete Pipe

1. Verify existing pipe size during site visit.
2. No pipes smaller than 18" for storm drains.
3. Install under existing pavement to limit conflicts with existing utilities.
 1. Backfill trench with CSB and pay using Item 400-6005
4. For concrete collars use Pharr District Standard
 1. <https://www.dot.state.tx.us/phr/specinfo/standard.htm>

Item 465 Junction Boxes, Manholes, and Inlets

1. Designate various items by numbers, not letters.
2. Select inlet type to avoid utility conflicts.
 1. Use inlet under roadway (PCU) to avoid conflicts with existing utilities.
3. Placement in roadway is not recommended unless avoiding utility conflicts.
4. For capping an existing inlet or a manhole use San Antonio District Standard
 1. <http://www.txdot.gov/inside-txdot/district/san-antonio/specinfo.html>

Item 466 Headwalls and Wingwalls

1. Consider construction to "ultimate" typical section.
 1. Construct near right of way or in a location to accommodate future widenings.
2. Include pay item 432-6006 for riprap when using flared wing wall standards for box culverts.
 1. See note 5 on the standard that requires item to be added.

Item 467 Safety End Treatment

1. Use State standard.
2. Measured by each barrel of each structure end.
3. Use SETs as 1st option to protect end of culvert/pipe.
 1. MBGF is alternate option but creates a long-term maintenance commitment.

Item 474 Linear Drains

1. Avoid trench/linear drains due to long term maintenance.

Item 476 Jacking, Boring, or Tunnelling Pipe or Box

1. Consider bore under pavement to avoid lane closures.
2. Bore under intersections to avoid complicated lane closures for open cut installation.
3. Verify bore pit locations are accessible and free of utilities.
4. Provide traffic control and protection for the bore pit.

Item 496 Removing Structures

1. Bridges or bridge-class culverts will be paid using bid items 496-6009 thru 496-6012.
2. Retaining walls will be paid using bid item 496-6040.

Item 502 Barricades

1. See [Appendix A](#) for guide to calculation of quantity.
2. "Working for You, Give us a Break" sign and pay item per WZ (BRK) – 13 are not required.

Item 504 Field Office and Laboratory

1. DCO annually in January will request DE approval for upcoming calendar year projects
 1. Approved list in project wise @ 14 - AUS\Offices\Construction\Designers Guide\
2. Default is Type E Field Office with office requirements shown in the master general notes
3. WIFI and Printer
 1. AO may request DCO approval for WIFI or printer for an approved office
 2. Include the following general note for WIFI or Printer
 1. Provide a local area network with a minimum of 100 Mbps network. The network shall provide full wireless (WIFI) coverage within the office. The wireless network shall be capable of 802.11 a/b/g/n/ac with speeds up to 1000 Mbps
 2. Provide a high-speed printer and photocopy machine capable of handling 11 in. x 17 in. prints.

Item 506 Temporary Erosion, Sedimentation and Environmental Controls

1. Use Item 0506-6002 Rock Filter Dams TY 2 at culvert outfall when widening a culvert or disturb soil within 100' of a culvert.
2. Include Item 0506-6040 and 6043 erosion logs on overlay and seal coat projects instead of silt fence.

Item 512 Portable Traffic Barrier

1. Avoid mixing portable steel with portable concrete due to connection issues.
2. Furnish and Install bid items.
 1. This is preferred and default method to provide barrier
 2. Greater than 45 MPH use items 6104 thru 6106
 3. 45 MPH or less use items 6009,6010, 6033, 6034, 6057 and 6058
3. Designated source barrier:
 1. Reserve barrier by contacting DCO 3 months prior to letting.
 2. Greater than 45 MPH use items 6013,6017,6025,6029,6037,6041,6049 and 6053
 1. Include items for F shape and Single Slope since we have both
 2. Include remove item to pay for disposal of barrier that is not reusable
 3. 45 MPH or less use items 6021,6022,6033,6034,6045,6046,6057 and 6058

Item 528 Color Textured Concrete and Landscape Pavers

1. Default use color textured concrete instead of landscape pavers.
2. Use item 528-6008 for 5" color textured concrete.

Item 529 Concrete Curb, Gutter, and Combined Curb and Gutter

1. Default Item 529-6008 Concrete Curb and Gutter Type II
2. Curb and gutter should sit on base or subgrade. Avoid placing on layer of hotmix to avoid remobilization of hotmix crew when curb is complete.
3. For cost savings, consider use curb only (no gutter) when curb backed with a sidewalk.

Item 530 Intersections, Driveways, and Turnouts

1. Use bid item based on surface.
 1. Provide separate pay items for CONC, ACP or SURF TREAT
2. Master General Note provides specs for default typical section.
3. Replace existing driveways with same type of material.
 1. Upgrade existing base driveways to seal coat or hot-mix surface.
4. Verify driveway pipe type and size.
5. Use state standard MB -14(2) thru (2B) for mailbox turnout.

Item 531 Sidewalks

1. Use bid item 531-6002 for 5" thick sidewalk and shared use path.
2. Include district standard.

Item 533 Milled Rumble Strips

1. AUS prefers profile pavement marking in lieu of milled rumble strip

Item 536 Concrete Medians and Direction Islands

1. Do not place medians on bridge decks.
2. Allow for turning radius at intersections.
 1. Stop median 20' from stop bar to allow left turns from other directions.
3. Medians < 10' wide shall be riprap or brick pavers.
 1. Less than 10' is difficult to maintain vegetation.

Item 540 Metal Beam Guard Fence

1. Include a mow strip per Item 432
2. Include delineators per Item 658.
3. Use Item 467 SETs as 1st option to protect end of culvert/pipe.
4. See Standard BED-14 for bridge ends.
 1. Use Non-Sym trans when applicable and bid item 540-6018.
5. Verify posts do not conflict with underground drainage or utilities.
6. Use following general note for ends that do not have a DAT or GET. Typical situation is a fence wrapped around the radius of a driveway that terminates near the ROW line
 1. General Note: Ends of MBGF not fitted with a DAT or a GET shall be terminated with a W-Beam End Section (Rounded) as shown on the DAT standard. This end section is subsidiary to the MBGF.

Item 542 Removing Metal Beam Guard Fence

1. MBGF paid using Item 542-6001
 1. A separate bid item for TAS (542-6002) or DAT (542-6003) is not required unless removal of adjacent MBGF is not included.
 2. GET removal paid using Item 544

Item 543 Cable Barrier System

1. See CSJs referenced in the Project Specific Guide section for go by plans and pay items required for cable barrier.
2. Include a mow strip per Item 432.
3. Include embankment Item 132-6019 to address slope per standards for projects without earthwork.

Item 544 Guardrail End Treatments

1. Include a mow strip per Item 432
 1. Item 432 allows for payment to install the approach taper as described in general notes for Item 432 and shown on the statewide standard.
2. Removal paid using Item 544-6003
3. Installation paid using Item 544-6001

Item 545 Crash Cushion Attenuators

1. Include Crash Cushion Summary Sheet.

Item 585 Ride Quality for Pavement Surfaces

1. See [Appendix N](#)

Item 610 Roadway Illumination Assemblies

1. Coordinate with District Maintenance Office to verify city maintenance of new assemblies
2. Verify with high mast item guide on location of high mast illumination versus conventional
3. Use LED lights for all fixtures.
4. Conventional lights use Type SA unless on concrete barrier then use Type SP
5. Assembly shall be designated as a combo of circuit letter and run number (ex. A-2)

Item 613/614 High Mast Illumination Poles and Assemblies

1. Illumination fixture default items
 1. 6156 6009 LED HI MST IL AM(6 FIXT)ASYM(TY A)SHLD
 2. 6156 6010 LED HI MST IL AM(6 FIXT)ASYM(TY B)SHLD
 3. These 6156 items will likely change to a 614 in the future
2. Pole default items
 1. Select appropriate Item 613 based on location, height, and wind
3. Design TCP to install and energize early in project sequence
4. Verify pole location does not conflict with overhead utilities.
5. High mast locations and pole height
 1. Interchanges may use 150 ft. pole to accommodate height of direct connectors
 2. IH 35
 1. SH 45 SE to SH 45 NW (150 ft. pole)
 2. South of SH 45 SE (100 ft. pole)
 3. North of SH 45 NW (100 ft. pole)
 3. Loop 1
 1. William Cannon to Southwest Blvd. (100 ft. pole)
 2. US 183 to SH 45 NW (100 ft. pole)
 4. US 183

Designers Quick Reference Guide

1. Riverside Dr. (South of SH 71) to Lakeline Mall Dr. (100 ft. pole)
5. SH 71
 1. IH 35 to US 183 (150 ft. pole)
 2. US 183 to Kellum Road (East of SH 130) (100 ft. pole)
 1. Exception within airport runway area
6. US 290
 1. Monterey Oaks (west of Loop 1) to IH 35 (150 ft. pole)
 2. IH 35 to SH 130 (100 ft. pole)

Item 618 Conduit

1. Conduit runs shall be designated by a number (call them a run and not a relay)

Item 617 Temporary Roadway Illumination

1. Consider including portable light tower at busy intersections or TCP transitions
 1. Use bid Item 617-6002 and following general note
 1. Item 617 - Temp illumination by the month is for placement of a single portable light plant for safety of the public. Placement as directed.
 2. District Traffic Office is working on a special specification

Item 620 Conductors

1. Regardless of volts, install a minimum size #8 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.

Item 624 Ground Boxes

1. Default is item to require aprons (624-6010, 624-6012 etc.)

Item 628 Electrical Services

1. All services should be 120/240
2. Electrical services installed after January 2015 should be reused
3. Services shall be placed near an existing power transformer
 1. Avoid cost for new electrical distribution lines
4. Electrical Services shall be designated by a number
5. Circuits shall be designated by a letter

Item 644 Small Roadside Sign Assemblies

1. Bridge rail mounted signs should be avoided due to limited access for maintenance
 1. If necessary, use bid item 644-6066 and state wide standard SMD (BR-1)-14
2. Bridge mounted vertical clearance signs see [Appendix L](#)
 1. Use bid item 644-6064 or 644-6065 and state wide standard BMCS

Item 647 Large Guide Sign Support and Assemblies

1. Verify shafts do not conflict with underground drainage or utilities.
2. Verify structure does not conflict with overhead utilities.

Item 650 Overhead Sign Supports

1. Verify shafts do not conflict with underground drainage or utilities.
2. Visually verify the structure does not conflict with overhead utilities.

Item 658 Delineator and Object Marker Assemblies

1. Include on MBGF using bid Item 658-6061 (white) or 658-6064 (yellow)
2. Include on concrete rail using bid Item 658-6013 (white) or 658-6026 (yellow)
3. Use (BI) item option for rail separating traffic

Item 662 Work Zone Pavement Markings

1. Include pay item for tabs on all overlays except IH 35 main lanes.
 1. Refer to master general note Item 666 that makes tabs subsidiary for IH 35 main lane.
2. Include pay item for tabs on all projects that have new surface over the existing stripe.

Item 666 Retroreflectorized Pavement Markings

1. Include Item 666-6158 or 666-6161 for shadow lane line per CPM(1)-14 on concrete pavement and bridge decks with concrete driving surface.
2. Profile pavement markings shall be used on all roadways with speed 50 mph or greater.
 1. Install on edge lines and center stripe.
3. Use 6" wide markings for following main lane
 1. IH 35 - all
 2. Toll Roads - all
 3. US 290 – Circle Drive (Oak Hill Parkway) to SH 130
 4. US 183 - SH 71 to SH 29
 5. Loop 1 – FM 1826 to 45 North
 6. SH71 – SH 130 to IH 35 (include Oak Hill Parkway project)
4. Cross walk shall be 24" solid white stripes parallel to traffic.
 1. See PM(3) AUS standard. This style is called the continental cross walk.
5. Center line marking for undivided roadways.
 1. Use a wide center stripe separated by 2' if proposed shoulder width \geq 4'.
 1. This is AUS district guidance.
 2. Use a standard center stripe if proposed shoulder width $<$ 4'.

Item 672 Raised Pavement Markers

1. Use 40' marker spacing for broken lines for IH-35 in FY 19 and FY 20 projects.
 1. Requires use of AUS modified PM(2) standard
 1. This standard could still be in development, check with district maintenance Brenda.Guerra@txdot.gov
 2. Alternate is use Item 672 general note: Lane line RPM spacing shall be 40 ft. for IH 35.

Item 677 Eliminating Existing Pavement Markings and Markers

1. Verify item is provided.
 1. Typically required with multiple traffic control shifts.
2. Use Item 666-6161, etc. for seal coat surfaces.

Item 680 Highway Traffic Signals

1. Include a signal timing plan.

Item 681 Temporary Traffic Signals

1. Include a signal timing plan.

Item 682 Vehicle and Pedestrian Signal Heads

1. All signal and pedestrian heads shall be aluminum
2. All signal heads shall include vented aluminum back plates items 682-6033 thru 682-6037
3. Pedestrian signal heads shall be countdown bid item 686-6018

Item 688 Pedestrian Detectors and Vehicle Loop Detectors

1. Pedestrian detectors shall be APS bid item 688-6001.
2. Include District Standard PPA-14(AUS)
3. If replacing vehicle loops, include 2 EA Item 624-6001 Ty A Grnd Bx to replace damage or missing boxes at end of lead in cable.
4. See Master General Notes for replacement of damaged conduit from loop to ground box.

Item 730 Roadside Mowing

1. Use bid item 730-6107 for full width cycle.
2. Include on projects longer than 12 months at 2 cycles per year.
3. Requires use of State funds only, no Federal participation.
 1. May be subsidiary for small projects
 2. Requires a 2 card in DCIS to designate as non-participating.

Item 734 Litter Removal

1. Use bid item 734-6002 for a cycle.
2. Include on projects longer than 12 months at 2 cycles per year.
3. Requires use of State funds only, no Federal participation.
 1. May be subsidiary for small projects.
 2. Requires a 2 card in DCIS to designate as non-participating.

Item 738 Cleaning and Sweeping Highways

1. Use bid item 738-6010 by the mile.
2. Include sweeping on curbed, urban projects longer than 12 months at once per quarter
3. Requires use of State funds only, no Federal participation.
 1. May be subsidiary for small projects.
 2. Requires a 2 card in DCIS to designate as non-participating.

Item 740 Graffiti Removal and Anti-Graffiti Coating

1. Do not use anti-graffiti coating.
2. Include bid item 740-6002 at quantity of 200 SF for following roadways located in Travis County: IH 35,US 290, Loop 1, and US 183.

Item 1004 Tree Protection

1. Default bid item 1004-6001.
2. Include tree protection detail sheet.
3. Designate specific trees for preservation. See Item 100 for more details.

Item 6001 Portable Changeable Message Sign

1. Pay by EA if duration is longer than 6 months (6001-6002)
2. Pay by DAY if duration is shorter than 6 months or an overlay/seal coat project (6001-6001)
3. Quantity to be confirmed by the Area Office.
 1. Default quantity by EA = 1
 2. Default quantity by DAY = 30

Item 6016 ITS Multi-Duct Conduit

1. Default bid item 6016-6006 or 6016-6007 if bored
2. Use bid item 6016-6008 for concrete encasement when ITS placed adjacent to ROW line or in high risk area for damage

Item 6302 Temporary Queue Detection System

1. Include Plan 1 and/or 2 for roadways with a lane closure meeting the following conditions
 1. Plan 1 - 7.5 mile system
 1. Include for freeways in Table 1 of Item 502 listed in the Master General Notes
 2. Include for all projects if full closure is expected.
 3. Include for all projects with a posted speed of 60 mph or greater
 2. Plan 2 - 3.5 mile system
 1. Include for roadways in Table 1 of Item 502 listed in the Master General Notes
 2. Include for all projects with a posted speed of 45 or greater
2. Quantity is based on anticipated closures with following as default
 1. Type 1 - Item 6302-6001 - 2 for each month of barricades.
 2. Type 2 - Item 6302-6002 - 8 for each month of barricades

Item 6185 Truck Mounted Attenuators and Trailer Mounted Attenuators

1. Include pay by DAY (6185-6002) for all projects with lane or shoulder closures.
2. Include pay by HR (6185-6003) for contracts with mobile operations such as pavement markings (662, 666, 668, & 678), raised pavement markings (672), herbicide (731), debris removal (735), etc.
3. Do not use pay by EA (6185-6001)
4. Default quantity based on months of project duration
 1. Should be confirmed by the Area Office or designer
 2. Default quantity by DAY
 - i. Project 0 to 12 months = months x 10
 - ii. Project 12 to 24 months = months x 9
 - iii. Project 25+ months = months x 8
 3. Default quantity by HR
 - i. All projects = months x 8

Appendix

Appendix A – Working Day Determination

CONTRACT DAY DETERMINATION					
Use this excel to determine the contract days and months of barricades. Input 'W' into the green cell. This excel will adjust 'W' for weather, etc. to provide 'C'.					
Designer Provided Information			AUTO CALCULATE FOR USE IN PS&E		
W = Working days per project (does not include weather, weekends, or holidays)					
District Pre Set Values					
Wm = Working days per month					
Cm = Contract days per month					
Output for Designers to use in PS&E					
C =	Contract days for the project (adjusted to allow weather, weekends, and holidays)				
B =	Barricades for the project (months rounded up to nearest whole number)				
B = W / Wm = C / Cm =					
Notes			Input the working days for the project (do not include weather, weekends, or holidays)		
1. See standard specs item 8.3 for definitions of working days.					
2. Excel provided by Division does not recognize impacts to construction due to weather.					
3. This calculation is not necessary if using primavera with calendars that include weather, etc. Contact Jesus Valdez @ DCO for primavera calendars.					
Calculations using W = 100 days					
Standard Work Week			Wm = 16		
			Cm = 16		
			C = W = 100		
Barricades			B = W / Wm = C / Cm = 7		
Standard Work Week does not need to account for impacts due to weather, weekends, or holidays. Contractor will not be charged a working day due these events.					
Calendar Day			Wm = 24		
			Cm = 30		
			C = Cm * (W / Wm) = 127		
Barricades			B = W / Wm = C / Cm = 5		
Calendar Day will charge the Contractor for every day of the week without regard to weather, weekends, or holidays.					
5 Day Work Week			Wm = 16		
Contract Time Adjustment			Cm = 20		
C = 20 days * (W / 16 days)			C = Cm * (W / Wm) = 125		
Barricades			B = W / Wm = C / Cm = 7		
5 Day charges Mon - Fri regardless of weather. Holidays defined by the contract are the only days not charged. Average month is based on 20 days (4 weeks * 5 days) but reflects 16 working days per month due to weather, weekends, and holidays.					
6 Day Work Week			Wm = 20		
Contract Time Adjustment			Cm = 25		
C = 25 days * (W / 20 days)			C = Cm * (W / Wm) = 125		
Barricades			B = W / Wm = C / Cm = 5		
6 Day charges Mon - Sat regardless of weather. Holidays defined by the contract are the only days not charged. Average month is based on 20 days (4 weeks * 6 days, + additional day) but reflects 20 working days per month due to weather, weekends, and holidays.					
7 Day Work Week			Wm = 24		
Contract Time Adjustment			Cm = 30		
C = 30 days * (W / 24 days)			C = Cm * (W / Wm) = 125		
Barricades			B = W / Wm = C / Cm = 5		
7 Day charges Mon - Sun regardless of weather. Holidays defined by the contract are the only days not charged. Average month is based on 30 days (4 weeks * 7 days, + additional 2 days) but reflects 24 working days per month due to weather, weekends, and holidays.					

This excel file “contract time_barricades_max time.xlsx” is located in project wise @ TXDOT4\Documents\14 - AUS\Offices\Construction\Designers Guide\

Appendix A-1 - Accounting for weather in a 5, 6, and 7 Day Work Week

For 5, 6 and 7 Day Work Week, TxDOT will charge a working day toward the allocated contract time regardless of weather but our schedule for the work activities they perform still needs to account for weather. This charge method just takes the guess work out of the idea to charge or credit the day due to weather, but it does not take away the fact that a contractor cannot work in the middle of a rain storm. Therefore, for a 6 Day Work Week the work should still assume the average of 20 days per month of actual work for the activities BUT we will charge 6 days a week for a total of 25 charge days per month.

Therefore, the actual work activities need to be tied to a calendar that factors in weather, Saturday, Sunday, and holidays. The contract time activity needs to be tied to a separate calendar that will not factor in weather but only account for Saturday, Sunday and holidays.

Example: 900 CY of excavation with a production rate of 100 CY per day. Actual work will take 9 days to complete. Assume during that duration it rains twice.....we will actually charge 11 days on a 5 day calendar for 9 days of actual work.

Actual work days required	9
Days charged for a Standard work week	9
Days charged for a 5 day work week	11
Days charged for a 6 day work week	14

DAY	F	S	S	M	T	W	R	F	S	S	M	T	W	R	F	S	Total
Actual Work	W				W	W	W	W			W	W	W	W			9
Rainout				R											R		2
Standard	C				C	C	C	C			C	C	C	C			9
5 DAY	C			C	C	C	C	C			C	C	C	C	C		11
6 DAY	C	C		C	C	C	C	C	C		C	C	C	C	C	C	14

Appendix A-2 - Maximum allowable contract time

Below is the maximum allowable contract time without approval from Area Engineer or District Construction Engineer.

		By Contract Value			
		<\$5M	\$5M to \$10M	\$10M to \$20M	>\$20M
	Duration (months)	12	18	24	36
Charge Method	Days Charged per Month				
Standard	16	192	288	384	576
5 Day	20	240	360	480	720
6 Day	25	300	450	600	900
7 Day	30	360	540	720	1080
Calendar	30.4	365	547	730	1094
		By Job Type - Overlay/Sealcoat			
		<\$1M	\$1M to \$2M	\$2M to \$3M	>\$3M
	Duration (months)	4	4	6	6
Charge Method	Days Charged per Month				
Standard	16	64	64	96	96
		By Job Type - Off System Bridge			
		<\$1M	\$1M to \$2M	\$2M to \$3M	>\$3M
	Duration (months)	4	6	8	12
Charge Method	Days Charged per Month				
Standard	16	64	96	128	192

Appendix B - ACP Plan Preparation Guide

- I. Non-surface
 - A. Flex base
 - 1. Type A Grade 5 (247-6366)
 - 2. Min of 4.0" of hot mix shall be placed on top of base if surface is hot mix
 - B. Flex base prime
 - 1. Not considered part of the seal coat surface
 - 2. Type to use
 - 1. If > 4" hot mix is placed on top of the base then use prime
 - 2. If <= 4" hot mix is placed on top of the base then use inverted prime
 - 3. Use inverted prime if exposed to traffic
 - 3. Prime
 - 1. MC 30, EC 30 or AEP @ 0.2 GAL/SY (310-6001)
 - 4. Inverted prime
 - 1. Asphalt
 - 1. Default RC-250 @ rate of 0.25 GAL/SY (316-6029)
 - 2. MC-800 @ rate of 0.28 GAL/SY (no bid item yet)
 - 2. Aggregate
 - 1. Type D Grade 5 at a rate of 1CY/130SY (316-6193)
 - C. Tack, bond and seal
 - 1. Refer guide in Project Wise AUS\ Offices\ Construction\ Designers Guide
 - 2. Use one of the following under and between all lifts and types of hotmix
 - 1. This includes between each lift of the same mix
 - 3. Do not use on subgrade or flex base
 - D. Type D
 - 1. 64-22 for non-surface
 - 1. < 5000 tons use item 340-6106
 - 2. > 5000 tons use item 3076-6035
 - E. Level up
 - 1. Regardless of tons use item 3076-6038
 - F. Type B
 - 1. 64-22 for all mixes
 - 2. Minimum 3" thick
 - 3. < 5000 tons use item 3076-6003
 - 4. > 5000 tons use item 3076-6001
 - G. Treated Subgrade
 - 1. Cement
 - 1. Default 26 LBS/SY @ 8" deep (275-6011 & 275-6001)
 - 2. Lime
 - 1. Default 36 LBS/SY @ 8" deep (260-6027 & 260-6043)
 - 1. 6043 allow use of multiple slurry options
 - 2. Default is to lime treat all subgrade east of I-35
 - 3. Fly ash or Lime-Fly Ash
 - 1. Default 8" @ 4% lime & 8% FS fly ash (265-6016, 265-6030 & 265-6007)
 - 4. Sulphate over 7000 ppm
 - 1. Default is excavate 8" deep and replace using embankment item
 - 2. Alternate option is use Item 265
- II. Surface
 - A. Asphalt

1. All surface mix shall use 76 -22 grade asphalt
 1. Except use 70 -22 for thin layers on top flex base approved by the DPE
- B. Aggregate
 1. SAC B is default
 2. SAC A per guidance map stored in Project Wise
 1. 14 - AUS\Offices\Construction\Designers Guide\
- C. Type
 1. Select per guidance maps stored in Project Wise
 1. 14 - AUS\Offices\Construction\Designers Guide\
- D. SMA
 1. Default 2" thick SMA-D 76-22 (346-6018 or 346-6014)
 2. SMA-F is not allowed
- E. TOM
 1. Default 1" thick TOM-C 76 -22
 1. SAC A 347-6001 & 347-6002
 2. SAC B 347-6001 & 347-6006
 2. Min 2" of hot mix underneath is required
 3. For overlay requires under seal or bonding course.
 4. For all roads east of I-35, visible rutting, and/or widenings include Type D level up at a quantity equal to 10% of the TOM quantity
- F. Type D
 1. Default thickness is 1.5"
 2. If Speed <= 45MPH, AADT < 30,000 and < 7% trucks
 3. 76 -22
 1. > 2000 tons 3076-6049 or 3076-6050
 2. < 2000 tons 340-6135 or 340-6136
- G. PFC
 1. Default 1.5" thick PFC-C 76 -22 (342-6002 & 342-6006)
 2. Default SAC A, SAC B rock could be too soft and loose air voids
 3. PFC-F is not allowed (having issues with mix designs)
 4. Use as last option for water quality
 5. Avoid use next to curb & gutter sections
 6. Requires an under seal, bonding course is not allowed.
 7. Do not use within 300' of a signal.
 1. Use equal depth of SMA in lieu of PFC.
 2. PFC does not perform well in stopping conditions.
- H. Seal coat
 1. No seal coat surface if AADT > 8,000 or % Trucks > 10%
 2. No SAC A
 3. Include level up
 4. Avoid use within 300' of a signal or stop condition.
 1. Install (can allow blade lay) Type D over the seal coat
 5. For rates see Basis of Estimate table in Master General Notes
 1. average between emulsion and AC
 6. Asphalt
 1. No Tier III
 2. Tier I for ADT > 4,000 (316-6004)
 3. Tier II for AADT < 4,000 (316-6005)
 7. Aggregate
 1. Type PD Grade 4 (316-6240)
 2. Type PD Grade 5 (316-6242)

3. Default
 1. Single Course - Grade 4
 2. Two Course - Grade 4 topped w/Grade 4

III. Notes

- A. See Master General Notes “Basis of Estimate” for rates to calculate quantities
- B. AADT and % Trucks can be found in the “Statewide Planning” link
<http://crossroads.org/tpp/StatewideMapping/>

Appendix B-1 - Flexible Pavement Design Approval Process

District Pavement Engineers (DPE)

Gisel.Carrasco@txdot.gov and Melissa.Benavides@txdot.gov

Reference Documents

1. Project Wise in folder 14 – AUS\Offices\Construction\Designers Guide\
 - a. Austin District Pavement Design Standard Operating Procedures
 - b. Pavement design example reports
 - c. Tack, bond and Underseal Guidance

Preliminary Data

1. No preliminary data is required for overlay
2. Traffic Data
 - a. Submit Form 2124 via email to district planner Carmen Ramos
 - i. In e forms open the TPP folder or search 2124
 - b. Include an 8.5"x11" location map
 - c. If multiple roads, such as a highway with frontage roads, always specify separate data
 - d. If need turning movements, include a line diagram of movements required
3. Evaluate existing pavement
 - a. Evaluate origin of distress
 - b. Evaluate drainage
4. Conduct site investigation
 - a. Collect soil samples for subgrade properties
 - i. Evaluate subgrade properties
5. Existing Conditions and typical section
 - a. Review old plans
 - b. Roadway cores
 - i. Coordinate with the lab
6. Falling Weight Data
 - a. Submit a request to DPE
7. GPR
 - a. Submit request to DPE

Document Control

1. Store all documents in Project Wise folder Design\Geotech\Pavement Design

Submission Process

2. Pavement Concept
 - a. Required for all projects
 - b. Submit ASAP to the Area Office (AO) for concurrence
 - i. Copy the Maintenance Section Supervisor
 - ii. If required, request maintenance section provide level up and base repair quantity and depth
 - c. Once receive AO concurrence, submit to DPE
 - i. Email subject: prelim pave CCCC-SS-JJJ roadway
 - ii. Copy the AO on the email to the DPE
3. Pavement Design
 - a. Required for all projects except overlay
 - b. Required for all projects with a pavement design greater than 2 years old.

- c. Submit pavement design or request for design prior to 30%
- d. Email subject: pave design CCCC-SS-JJJ roadway
- e. TxDOT design
 - i. send request to DPE to request DPE prepare a pavement design
- f. Consult Prepared Design
 - i. Follow the latest version of the District's Pavement Design SOP, Department's Pavement Manual, example reports, and this guide
 - ii. Consultant submit a pavement concept to TxDOT PM for AO and DPE approval
 - iii. After geotechnical information is available, schedule a conference call with the DPE to discuss material selection and rehabilitation options
 - iv. Final pavement report must be reviewed by DPE.
 - v. Consultant design send Project Wise link to DPE via email when document is ready for review

Pavement Concept

1. Contents

- a. Project Description
 - i. Written description of project
- b. Location
 - i. Written description of begin and end points
 - ii. screen shot pasted in email of google earth
- c. Pavement Design Required
 - i. Yes or No? If yes, TxDOT or consultant prepared.
- d. Preliminary data required?
 - i. If yes, see above section for preliminary data.
- e. Traffic Data
 - i. AADT and % Trucks
 - ii. Info can be found in the "Statewide Planning" link <http://crossroads.org/tpp/StatewideMapping/>
- f. Existing Typical Section
 - i. Provide sketch of existing, screen shot of old plans, or written description of existing layers and thickness of each layer
- g. Proposed Typical section
 - i. Provide sketch
 - ii. Proposed material of each layer
 - 1. Pay item not required for concept, unless overlay only
 - 2. Thickness not required for concept , unless overlay only
 - iii. Base Repair
 - 1. Yes or No? If yes, how deep of a repair?
 - iv. Milling
 - 1. Yes or No? If yes, how deep, entire roadway, etc.?
 - v. Level up
 - 1. Yes or No?
 - vi. Seal Coat
 - 1. Yes or No? If yes, provide oil and rock type

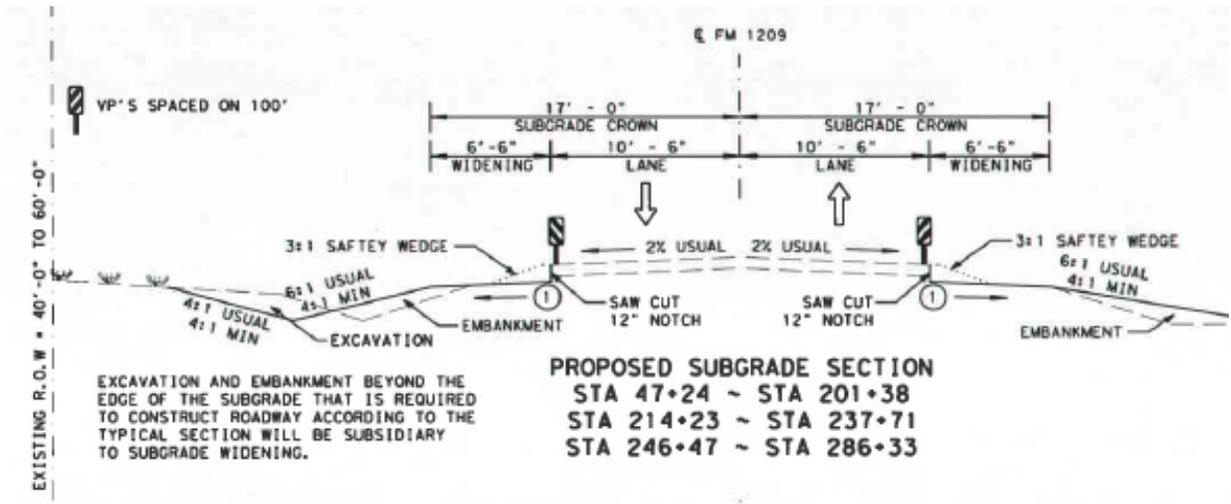
Pavement Design

1. Contents

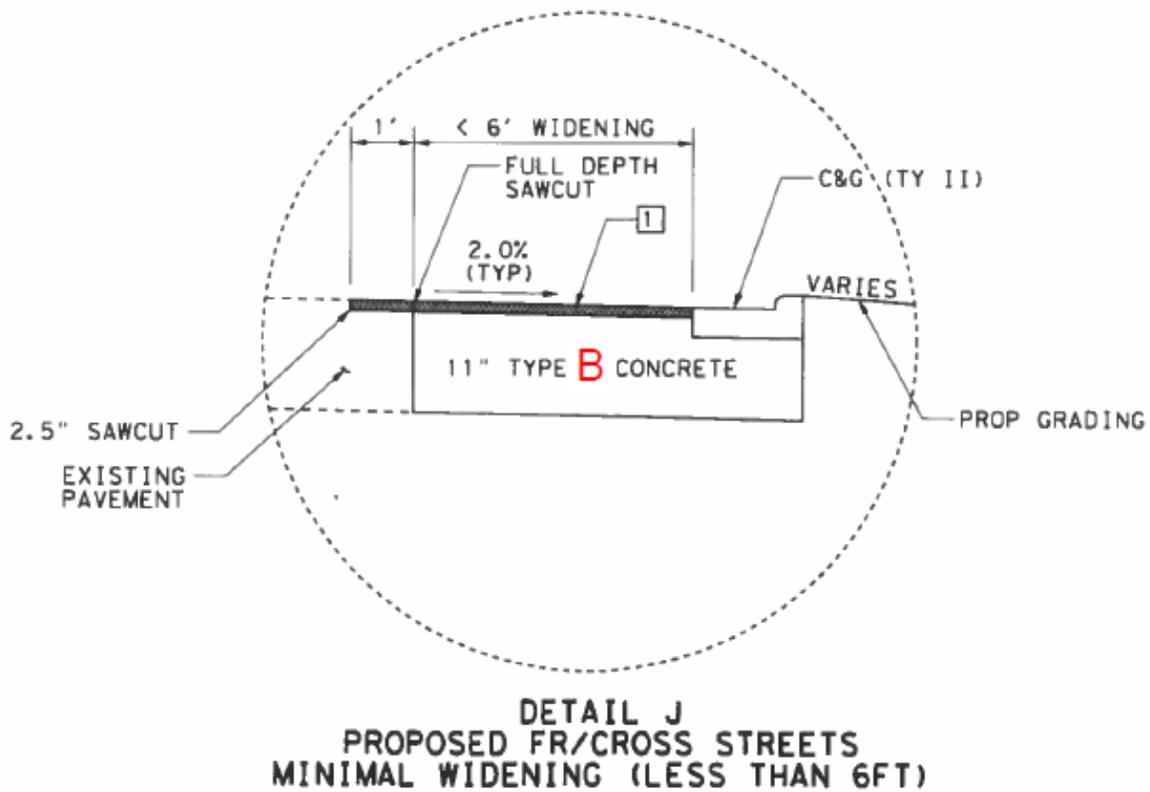
- a. Examples: IH 35 @ Parmer(0015-13-396) & SH 45 Grand Ave Ramps(0015-10-063)
 - i. Examples in Project Wise @ 14 - AUS\Offices\Construction\Designers Guide\

- b. Table of Contents
 - i. Project Description
 - ii. Location Map
 - iii. Traffic Data
 - 1. AADT, AADT future, ESALs, % Trucks, ATHWLD
 - iv. Soil Conditions
 - 1. Laboratory soil report or tests, Ground Penetrating Radar (GPR), Falling Weight Deflectometer (FWD), Dynamic Cone Penetrometer (DCP), pavement cores, Atterberg limits
 - v. Typical Sections
 - 1. Existing
 - 2. Proposed (include bid items, surface aggregate, and thickness)
 - vi. Pavement Concept
 - 1. Copy of AO concurrence
 - vii. Appendices
 - 1. A - Traffic Data Report
 - 2. B - FPS Reports
- c. Review Process
 - i. Email confirmation of receipt will be provided.
 - ii. Allow 10 business days for review.
 - iii. The designer will be notified if more information is needed or if testing (GPR, FWD, etc.) will be requested.
 - iv. If accepted, the designer will be notified via email.
 - v. If inadequate, the designer will be notified and provided a proposed design alternative
 - 1. If designer elects to use proposed design, send notice to point of contact
 - vi. If resubmission, the designer will be notified with comments

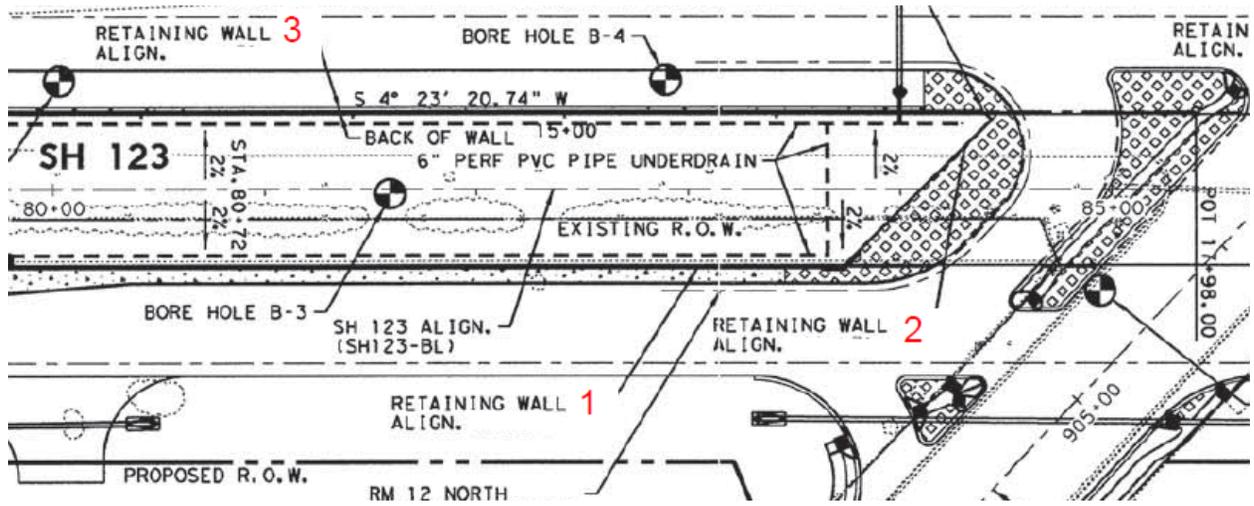
Appendix C - Typical Subgrade Widening Detail



Appendix D - Typical Subgrade Widening Detail for Narrow Urban Locations



Appendix E - Retaining Wall Alignment Names



Appendix F – Not Used

Appendix G - IH 35 Mobility Projects

1. Typical Section
 1. For narrow widening of frontage road use Appendix D
2. Item 8
 1. Use of 5 day work week per spec Item 8.3.1.1
 2. Require CPM schedule and PSSR by adding general note to Item 8
 3. Include lane rental notes and fee table in Item 8 of Master General notes
 4. Use substantial complete milestone
 1. Begin when work starts
 2. End per substantial complete definition used in SP 008-006
3. Item 162
 1. Use sod for permanent vegetation
4. Item 617
 1. Include temp light item 617-6002 to illuminate intersections and lane shifts
5. Ramps closures
 1. Shall not be closed for extended periods
 2. Construct detour ramp if ramp must be closed to avoid using the 14 day milestone
 3. If a ramp requires closure it shall be for a maximum of 14 days and be controlled by a milestone with incentives and disincentives
 4. For milestones with ramps add note that project and milestone time charges will be 7 days per week until milestone is complete
 5. Plan TCP to avoid closure of consecutive entrance or exit ramps
 6. Add note to restrict simultaneous closure of consecutive ramps
6. Intersection reconstruction
 1. Use of milestones when intersection construction begins
 1. Include special provision for milestones
 2. Provide incentive AND disincentive
 2. Max of 6 months of interruption to an intersection
 1. 6 months to rebuild the bridge from start to finish
 3. Initiate milestone once begin impact to intersection capacity or install traffic control devices
 1. Notes need to be specific on what phase/step the milestone will begin and end
 4. End milestone when final configuration is in place
 5. Intersection profile work shall be on weekends with hot-mix to restore lanes of traffic
 1. Use Type B hot-mix to adjust profile
7. Interstate Closures
 1. What activities require closures?
 2. Where will traffic go and for how long?
 3. If Contra Flow not available, provide a 2 lane exit ramp TCP for the closure.
8. General Notes
 1. Add the following to the general notes....these notes are in addition to the Master General notes.
 - Item 5

Attend I-35 corridor construction conferences as directed by the Engineer. It is anticipated these conferences will happen monthly and include the other I-35 contractors.

Provide 120 hour notice to all businesses and residences that will be experience a utility service interruption. The notice shall include an information flyer using approved TxDOT format.

Maintain a log of ongoing issues, RFIs, and submittals that include date created/submitted, subject, ball in court, date closed, etc. Submit weekly prior to the project meeting or by noon on Friday, whichever comes first.

Item 7

Host weekly project meetings and include a discussion regarding safety. Contractor shall attend I-35 corridor safety conferences as directed by the Engineer. It is anticipated these conferences will happen monthly.

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.

Item 8

(Blind Note: Add requirement for project fact sheet and 3 week look ahead. See notes for Item 8 in Item by Item Guide section. This is applicable to all Mobility 35 projects regardless of the project cost.)

(Blind Note: Add to main lane assessment fee below fee schedule. This sentence is in addition to the sentence for each additional 15 min period after initial 60 minutes.)
Each additional 15 minute interval after the initial 120 minute period \$65,000.

Item 502

Table 1

Roadway	Limits	Allowable Closure Time
IH 35	All (Extended Full Closure, see allowable work)	11 P Fri to 9 A Sat
IH 35	All (Extended Full Closure, see allowable work)	11 P Sat to 10 A Sun

Full Closure of IH 35 in both directions is not allowed. Use of Extended Full Closure is only allowed for bridge demo and bridge beam installation. Extended Full Closure for bridge demo is allowed in both directions from 12 A to 7 A and requires closure of the cross traffic at intersections to allow free flow on the frontage roads.

Provide notice 21 calendar days in advance of a Full Closure, Extended Full Closure, or Extended Contra Flow. For these closures, provide a work schedule 14 calendar days in advance. The work schedule shall detail each activity beginning with the setup of the closure and ending with removal of the closure. Do not use activities exceeding 4 hours, unless agreed upon with the Engineer. Provide email updates of the work schedule to the Area Engineer, Asst. Area Engineer, and TxDOT project staff every 2 hours beginning when the closure is placed and a final email when the closure is removed.

Prior to implementation of an Extended Full Closure or Extended Contra Flow, provide a dedicated truck to tow stranded motorist off the highway to a place of safety free of charge. Ability to tow an 18 wheeler is not required. The truck shall be City approved and able to respond within 10 minutes during the duration of the closure. A maximum combined rate of \$70 per hour for the truck and operator will be allowed. Scheduling fee is subsidiary. Cancellation, minimums or “show up” fees will not be paid. An additional 5 percent of the actual invoice cost will be paid as compensation for administrative costs,

superintendence, and profit. Submit charge summary and invoices using same forms provided for law enforcement.

Prior to implementation of closure of more than 2 main lane, provide a courtesy patrol vehicle to maintain traffic control devices and assist stranded motorist. The vehicle shall be marked and easily identified as courtesy patrol. The courtesy patrol vehicle must be able to respond to traffic control maintenance and motorist within 10 minutes. The vehicle must be equipped with items such as air compressor, antifreeze, fuel, flat repair and tire changing tools to assist stranded motorist. This work is subsidiary.

Item 662 Work Zone Pavement Markings

The Contra Flow markings may be Temporary (Removable) Prefabricated Pavement Markings (Tape).

Item 735 Debris Removal

Remove debris from the travel lanes when the debris is impeding the flow of traffic or a safety concern. Respond within 15 minutes during the hours of 6 A to 7 P Monday thru Friday and within 30 minutes all other times. This work is subsidiary.

ITEM 6001 Portable Changeable Message Sign

(Blind Note: Adjust board locations as necessary depending on project location.)

Prior to implementation of a main lane closure, a portable message board must be placed in advance of a major alternate route to allow motorist to decide on an alternate route. Message and board location may be revised by the Engineer. The message board shall remain active during duration of closure and include the following message: LANES (OR FREEWAY) CLOSED X MILES. EXPECT DELAYS. The board shall be turned off when closure is not active.

NB Closure for projects south of Colorado River to SH 45 SW

Location of board: I-35 between FM 2001 and Robert S Light.

SB Closure for projects south of Colorado River to SH 45 SW

Location of board: I-35 between Rundberg and Braker

NB Closure for projects north of Colorado River to SH 45 NW

Location of board: I-35 between FM 2001 and Robert S Light.

SB Closure for projects north of Colorado River to SH 45 NW

Location of board: I-35 between 620 and 3406

NB Closure for projects north of SH 45 NW to SH 130

Location of board: I-35 @ Airport Blvd.

SB Closure for projects north of SH 45 NW to SH 130

Location of board: I-35 north of Ronald Regan Blvd.

Appendix H – Not Used

Appendix I - Void Mitigation Guide

1. Include the following plan sheets and pay items.
 1. Plan Sheets
 1. Austin District Void Mitigation Details VMD-18(AUS)
 2. Sheets were used in CSJ 0015-09-193, Letting Date April 2019
 3. dgn files found in project wise at 14 - AUS_Standards\District Design Standards\VMD-18(AUS).pdf
 2. Pay Items
 1. 0506 6035 SANDBAGS FOR EROSION CONTROL
 2. 0506 6040 BIODEG EROSN CONT LOGS (INSTL) (8")
 3. 0506 6043 BIODEG EROSN CONT LOGS (REMOVE)
 4. 0420 6002 CL A CONC (MISC)
 5. 0481 6023 PIPE (PVC) (SCH 80) (6 IN)
2. TCEQ Contact Info
 1. Check with Shane Rotter (DEQC) or Zach Lanfear (District Geologist) prior to making contact. This is to limit the # of contact points with TCEQ.
 2. Kevin Smith (TxDOT Liaison) kevin.smith@tceq.texas.gov 512-339-2929
 3. James "Bo" Slone (Geologist) james.slone@tceq.texas.gov 512-339-2929

Appendix J - Mobility 35 Contra Flow

Notes: Consideration should be given to adjust notes for special situations such as beam setting for Direct Connectors, etc.

Table 1

<u>Roadway</u>	<u>Limits</u>	<u>Allowable Closure Time</u>
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
IH 35	All (Full Closure, see allowable work below)	11 P to 4 A
IH 35	All (Extended Full Closure, see allowable work)	11 P Fri to 10 A Sat
IH 35	All (Extended Full Closure, see allowable work)	11 P Sat to 10 A Sun
IH 35	All (Contra Flow, all other work)	9 P to 5 A
IH 35	All (Extended Contra Flow, see allowable work)	11 P Fri to 5 A Mon
All	Within 200' of a signalized intersection	8 P to 5 A

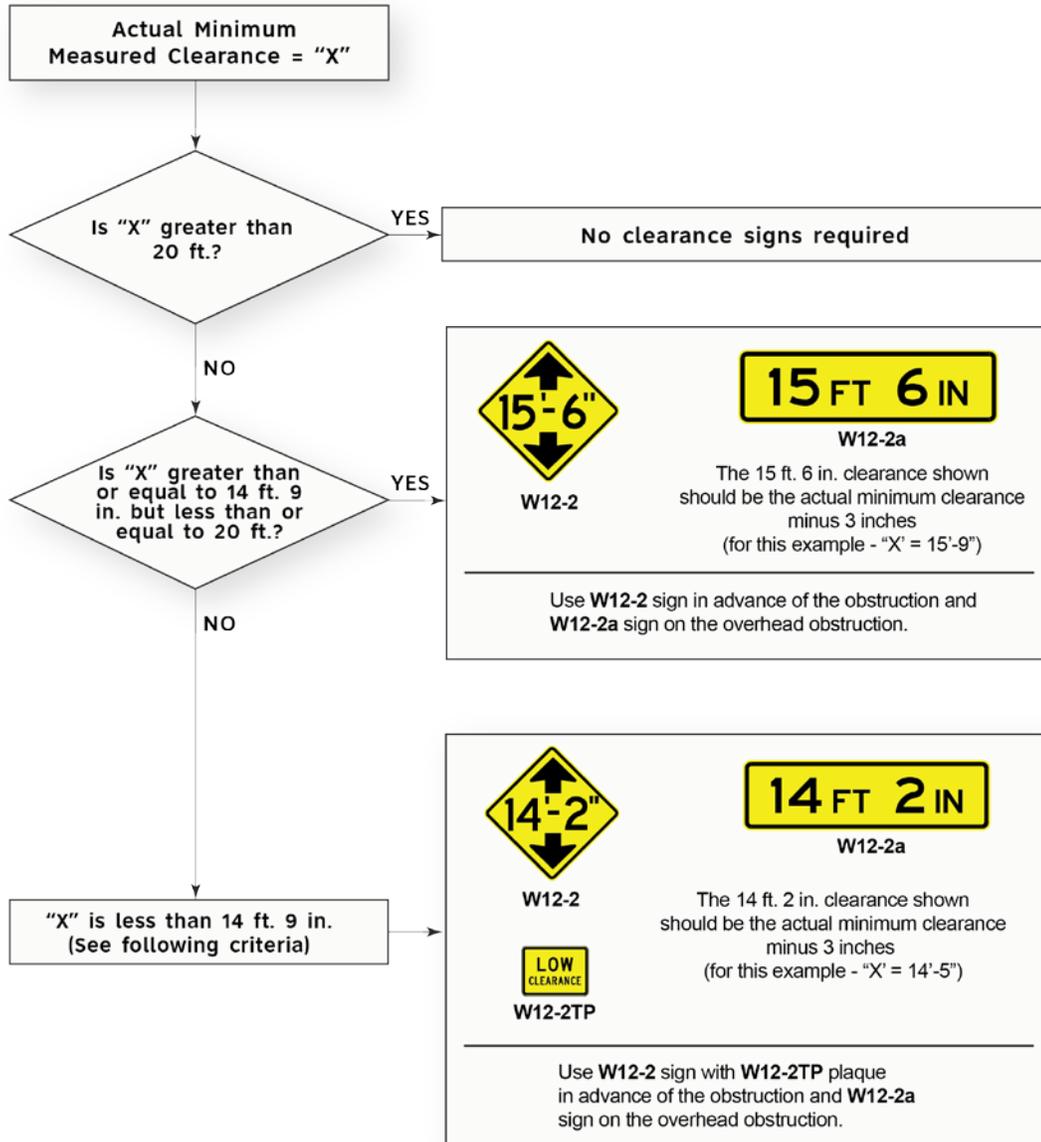
2 lanes closed on IH 35 allowed to begin at 9 P for main lane (shoulder work not included) hotmix overlay or base repair operations. Full Closure of IH 35 is only allowed Sunday Night thru Friday morning for OSB truss removal/installation and bridge beam installation. Full Closure of IH 35 in both directions is not allowed. Use of Extended Contra Flow or Extended Full Closure is only allowed for bridge demo.

1. Toll waiver note.
 1. Use below to supplement above notes.
 2. Requires DE approval.
 3. Cost in 2017 for weekend toll waive on 130/45 is \$1M
 1. Friday @ 11p to Monday @ 4a
 2. Jan, Feb and Nov are cheapest months.

Extended Full Closure of IH 35 for bridge demo is only allowed to be performed once during project duration. Provide 21 days of notice prior to use of the Extended Full Closure. Cancel the Extended Full Closure within 120 hours of begin of the closure. TxDOT intends to waive tolls on SH 130 during this closure.

Appendix L - Vertical Clearance Signs

(Check Figure 6-3 in the Sign Guidelines and Applications Manual for latest)



Appendix M - Milestones and Substantial Complete Incentives

1. Contact Jesus Valdez or Ben Engelhardt for assistance.
2. Refer to Form 2699 for situations that could require an incentive
3. Include incentive in Engineers estimate
 1. Incentive \$ is not accounted for as a bid item (such as force account) or in DCIS
 2. Include the amount in the estimate as a cost
 3. Cost accounted for and charged to the district budget during construction
4. Calculation guide
 1. AUS has a milestone calculator located in Project Wise
 - i. TXDOT4\Documents\14 - AUS\Offices\Construction\Designers Guide\
 2. Construction Division has RUC calculator located on the web
 - i. <https://www.txdot.gov/inside-txdot/division/construction/road-user-costs.html>
 3. Typically, the daily rate for the incentive is 16.7% of the daily RUC
5. Maximum incentive amount
 1. Typically, the total amount of all incentives is 3.4% of the construction estimate.
 - i. This is based on TTI evaluation of Missouri DOT projects
 2. Maximum amount of all incentives is 5%.
6. Maximum # of days for incentive
 1. Default is a result of the total incentive amount allowed divided by the daily rate
 2. Default per SP 008-006 is 30 days

Appendix N - Guidance for Selecting Ride Quality Pay Adjustment Schedule

If the condition is not listed below, then ride quality will be default per Item 585.

Project Type	Pavement Type	Roadway Type	Schedule
New Construction	Rigid	All	2
New Construction	Flexible w/ HMA => 1.5"	All	1
New Construction	Flexible w/ HMA < 1.5"	All	2
Rehabilitation	Rigid	All	2
Rehabilitation	Flexible w/ HMA => 1.5"	All	1
Rehabilitation	Flexible w/ HMA < 1.5"	All	2
Overlay	HMA => 1.5"	2 lane	Default
Overlay	HMA => 1.5"	> 2 lane < 90,000 ADT	2
Overlay	HMA => 1.5"	> 90,000 ADT	1
Overlay	HMA => 1.5" + smoothness	> 90,000 ADT	1
Overlay	HMA => 1.5" + smoothness	< 90,000 ADT	2
Overlay	HMA < 1.5"	> 90,000 ADT	2
Overlay	HMA < 1.5"	< 90,000 ADT	Default
Widening**	HMA => 1.5"	2 lane	Default
Widening**	HMA => 1.5"	> 2 lane < 90,000 ADT	2
Widening**	HMA => 1.5"	> 90,000 ADT	1
Widening**	HMA => 1.5" + smoothness	> 90,000 ADT	1
Widening**	HMA => 1.5" + smoothness	< 90,000 ADT	2
Widening**	HMA < 1.5"	> 90,000 ADT	2
Widening**	HMA < 1.5"	< 90,000 ADT	Default

** Widening "Pavement Type" is based on the thickness of the pavement placed over the existing roadway to remain.

Smoothness opportunity definition: A smoothness opportunity is defined as a ~~continuous~~ level-up regardless of the thickness, a specified lift of 1.0 inches or more of asphaltic concrete pavement, in place recycling, and grading for base courses. ~~Spot level-ups~~, milling operations, and seal coats, will not be considered as a smoothness opportunity. Mill and fill operations that require matching the existing pavement are not considered to be a smoothness opportunity.

Additional guidance can be found at following link from Construction Division:

<ftp://ftp.dot.state.tx.us/pub/txdot-info/des/specs/ridequal.pdf>

Appendix O - Lane Closure Assessment Fee

1. Lane fee calculators using excel spreadsheets are located in Project Wise
 1. Two separate spreadsheets, 1 for more than 40k ADT and one for less
 2. TXDOT4\Documents\14 - AUS\Offices\Construction\Designers Guide\
2. Include lane fee schedule & SP008-017 for roadways in Table 1 of Item 502 listed in the Master General Notes
3. Example fees and schedule are shown in the Item 8 in the Master General Notes
4. Lane fee shall be calculated for each roadway with different AADT
5. Cost per hour per vehicle
 1. Use following website to find "Value of Time and Road User Costs"
 2. <https://www.txdot.gov/inside-txdot/division/construction/road-user-costs.html>
6. AADT and % Trucks can be found in the "Statewide Planning" link
 1. <http://crossroads.org/tpp/StatewideMapping/>

Turn on "AADT" and "Future Traffic & Percent Truck" overlays.

Click on the roadway for AADT. The pop up menu has a different AADT (157,857) since the AADT (180,449) shown on the map includes frontage roads. The pop, as stated at bottom of pop up, is for main lanes only.

The screenshot shows the Crossroads website interface. The browser address bar displays <http://crossroads.org/tpp/StatewideMapping/>. The sidebar on the left lists various overlays, with 'AADT' and 'Future Traffic & Percent Truck' highlighted in red. The main map area shows a red line representing a roadway. A pop-up window titled 'Future Traffic:' is overlaid on the map, displaying the following data:

Route ID	IH0035-KG
2015 AADT	157,857
2035 Estimated AADT	158,170
24 Hour Truck Percentage	11.8

Below the table, the text reads: "Future Traffic and Percent Truck data is for main lanes only." and includes a "Zoom to" link. A purple arrow points to the 2015 AADT value in the table. On the map, a red circle highlights the number 180449, which represents the total AADT including frontage roads.

Appendix P - Houston Toad

1. Follow this guide for projects on roadways listed in Table HT
 - a. If yes, CHECK WITH ENV
2. If construction will begin or occur between Jan 1-July 1 ENV will need to provide a toad monitor.
3. Plans should minimize construction in drainage areas during the Houston toad breeding period January 1 -July 1.
4. Plans
 - a. Include the toad habitat map
 - b. Include the TEF detail and pay item 506-6034 for perimeter fence.
5. General notes
 - a. Add the following notes to Item 7. It is not required to include Table HT.
 - b. Below notes are being reviewed as of 4/10. Contact Andy Blair for latest notes.

Item 7 – Houston Toad

This project is subject to the following restrictions/requirements due to the presence of the Houston Toad. The limits of the toad restrictions are for the entire project limits unless stations for the restrictions are provided in the following: ???+?? to ???+??.

Toad habitat boundaries can be found on the Lost Pines Habitat Conservation Plan Area map shown in this contract.

All workers are required to receive up to 1-hour training prior to working on the jobsite. This training will be conducted on site by a TxDOT representative. Provide 72-hour notice to schedule the training.

No work will occur outside of the period of 30 minutes after sunrise to 30 minutes before sunset each day. Night work will require a 48-hour notice prior to beginning of the work to allow the site to be cleared.

TxDOT will clear the project site daily. Notifications when site is clear will be sent to the project staff. Entry or activity within the work area prior to clearance is not allowed.

A sequence of installation of the toad exclusion fence (TEF) to ensure full site containment and permit compliance must be submitted to TxDOT 96 hours prior to begin installation. TEF shall be paid using construction perimeter fence bid item.

Install (TEF) around the perimeter of the project to impede toads from entering the project. Installation of the fence shall be completed prior to using equipment on the site. Hand clearing to install the fence is subsidiary.

Install other toad BMPs as designated by the plans or Engineer prior to begin work. BMPs related to the toad will be inspected daily. All deficiencies shall be corrected immediately. Failure to correct a toad related BMP within 24 hours will result in stoppage of work.

Toads may inhabit brush piles during non-work hours; therefore, all vegetation shall be removed at the end of each day to a location outside of toad habit.

If any type of toad, amphibian, or reptile found within the project, suspend work within 75 ft. of the toad and notify TxDOT. TxDOT will be responsible for relocation of a toad.

All standing water not located in a waterway shall be removed prior to sunset.

All spills, of any amount, shall be reported to TxDOT. All parked equipment and refuelling shall remain 200 ft. from a waterway.

The Bermuda grass in the seed mix (PLS/acre) will be replaced with 1 lb. Slender Grama (Dilley), 1 lb. Sideoats Grama (Haskell), 0.5 lb. Hairy Grama (Chaparral), 0.25 lb Hooded Windmill Grass (Mariah), 0.25 lb Sand Dropseed (Borden), and 1 lb. Green Sprangletop. Visually inspect all open holes and trenches for toads prior to backfill. Holes and trenches shall be covered at the end of each work day or when no work is occurring. This work is subsidiary.

All material imported to the project shall be free of fire ants. All existing material with fire ants shall be treated with a granular product to eliminate the fire ants. This work is subsidiary.

If the total rainfall in a 48-hour period is 2 in. or greater, the Contractor must suspend work for 24 hour or ensure that the TxDOT provided monitors will be onsite on a full-time basis for that 24 hour period. Time suspension will not begin until the rain event has ended, and time will not be charged during the suspension. Time charges during the rain event will be in accordance with the contract. If the suspension does not impact the performance of work for 7 hr. between 7:00 A.M and 6:00 P.M., a working day will be charged. The suspension will be non-compensable.

During Prep right of way tree trimming / tree removal operations, no stockpiling, burning or mulching of vegetation will be allowed on the Right of Way within the Houston Toad Habitat. Mulching activities with a bobcat style brush mulcher or similar equipment, will be allowed as

approved by the District Biologist to facilitate installation of TEF. All vegetation shall be removed by the end of each day to a location outside of toad habitat to process for final disposal.

Trees shall be removed mechanically with equipment, such as a track hoe or grad all. capable of pulling the vegetation straight out of the ground for inspection. To facilitate proper inspection, no dozers, loaders, track loaders, etc. will be allowed to doze down vegetation while preparing the right of way.

Root balls of all vegetation must be removed mechanically. No grinding of stumps will be allowed.

No on or off right of way PSLs for material storage, equipment staging, borrow sites, water sources, etc. will be allowed within the toad habitat boundaries. All materials shall store off the ground and surrounded with TEF. A project PSL shall be enclosed with TEF.

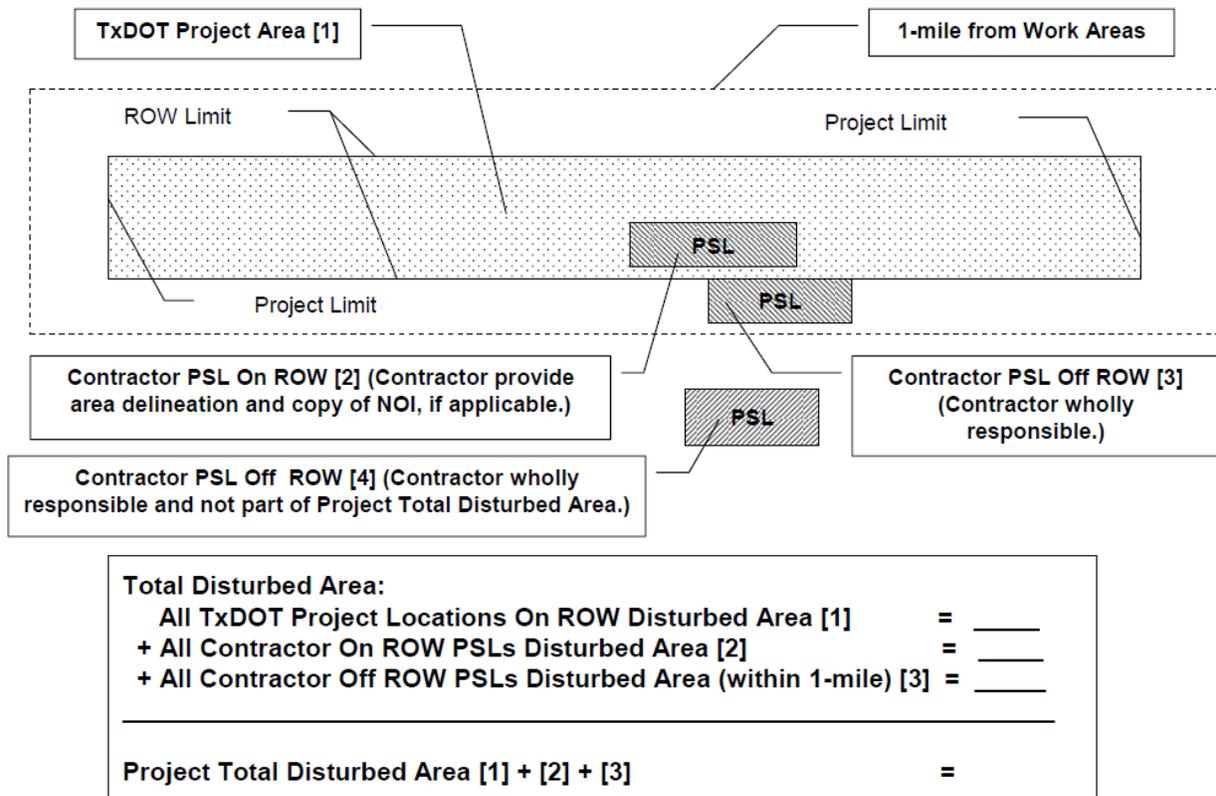
Table HT

Roadway	Limits
FM 2336	East of CR 353 (Herron Trail)
US 290	South of FM 2336 to FM 2104
FM 2104	All
HWY 71	SH 95 to FM 153
SH 95	Old McDade Road to Hwy 71
FM 1441	Peach St. to SH 21
SH 21	SH 95 to Lee County Line
Loop 150	SH 21 to Hwy 71
Park Roads 1A, 1C, 1D, and 1E	All
FM 1624	Highway 21 to Rockdale Street
FM 696	All
FM 112	Milam County Line to FM696
FM 3403	All
HWY 77	HWY 21 N to the Milam County line
Off-system	All - East of SH 95 and North of the Colorado River

Appendix Q - Guide for Calculation of Total Disturbed Area with PSL included

Increase total disturbed area to 5.0 acres when estimated area is between 4.50 and 4.99.

SW3P Linear Project



Appendix R - Loop 360 Projects

1. Typical Section
 1. Use concrete pavement for new main lanes
2. Item 8
 1. Use of 5 day work week per spec Item 8.3.1.1
 2. Require CPM schedule and PSSR by adding general note to Item 8
 3. Include following note in Item 8 for projects over \$20M
 1. The CPM schedule must also include a cost per activity for each work activity. The monthly schedule report must include a line diagram showing the actual and projected monthly estimates thru the end of the project.
 4. Include lane rental notes and fee table in Item 8 of Master General notes
 5. Use substantial complete milestone
 1. Begin when work starts
 2. End per substantial complete definition used in SP 008-006
3. Item 162
 1. Use sod for permanent vegetation
4. Item 180
 1. Include wildflower seeding
5. Item 300s
 1. Use TOM 76 -22 as surface for frontage roads SAC B
6. Item 617
 1. Include temp light item 617-6002 to illuminate intersections and lane shifts
7. General Notes
 1. Add the following to the general notes....these notes are in addition to the Master General notes.

Item 5

Attend Loop 360 corridor construction conferences as directed by the Engineer. It is anticipated these conferences will happen monthly and include the other Loop 360 contractors.

Provide 120 hour notice to all businesses and residences that will be experience a utility service interruption. The notice shall include an information flyer using approved TxDOT format.

Maintain a log of ongoing issues, RFIs, and submittals that include date created/submitted, subject, ball in court, date closed, etc. Submit weekly prior to the project meeting or by noon on Friday, whichever comes first.

Item 7

Back up alarms used during night time operations shall be non-intrusive.

Appendix S – Asset Maintenance

1. When required?
 1. Required for projects with work within the limits of the cities listed below
 1. Austin, Bastrop, Bee Cave, Bertram, Blanco, Buda, Burnet, Cedar Park, Cottonwood Shores, Coupland, Dripping Springs, Elgin, Florence, Fredericksburg, Georgetown, Giddings, Granite Shoals, Highland Haven, Horseshoe Bay, Johnson City, Kyle, Lago Vista, Lakeway, Leander, Lexington, Liberty Hill, Llano, Lockhart, Luling, Manor, Marble Falls, Martindale, Mason, Meadow Lakes, Mustang Ridge, Niederwald, Pflugerville, Rollingwood, Round Rock, San Marcos, Smithville, Sunrise Beach, Sunset Valley, Taylor, Thrall, and Westlake
2. Asset Maintenance Plan Sheets
 1. Project Wise @ TXDOT4\Documents\14 - AUS\Offices\Maintenance\Project Development\
 2. When a new project folder is created in project wise the template folder will auto copy the sheets into the project folder 4 - Design\Plan Set\1. General\
3. Process
 1. Coordinate with Area Office to get city contact information
 2. Coordinate with District Maintenance Operations (DMO) to obtain the latest Municipal Maintenance Agreement (MMA)
 1. Send email to Lori.Wagner@TxDOT.gov
 3. Review MMA for exclusion that will require changes to the asset maintenance sheets
 4. Coordinate with city at 30% PS&E or sooner
 1. Obtain design criteria of assets that will be turned over to the city
 1. This includes items such as pedestrian illumination poles, water quality ponds, detention ponds
 5. Provide the city the plans for review and comment
 6. Complete asset maintenance sheets
 1. Include GPS coordinates for “From” and “To” limits
 7. Obtain city signature on sheets
 8. Provide signed sheets to DMO
 9. Insert signed sheets into PS&E

Summary of Changes

3/22/2018

1. Appendix O - Added note for lane rental calculation for each roadway and calculation spreadsheet
2. Appendix M - Added notes for the milestone calculation, was previously in draft format.
3. Appendix A-2 - New appendix for maximum allowable contract time
4. Item 666 - Added note regarding the stripe style for crosswalks
5. Item 610 - Updated for high mast illumination roadways
6. Project Specific Guide - Added reference to Construction Production Rates

7/18/18

1. General Plan Sheet Preparation
 1. Added Asset Maintenance Sheets
 2. Added note to use state wide ITS standards
2. Project Specific Guide
 1. Edwards Aquifer PSL - Added note to include district standards.
 2. Added info for A + B bid
 3. Overlay Projects - Added notes regarding level up to the related to overlay
3. Item by Item
 1. 628 - add note to put new electrical service near a power supply/transformer
4. Appendix
 1. N - Revised the state wide smoothness definition to allow continuous and spot level up to be considered a smoothness opportunity.

11/05/18

1. General Plan Sheet Preparation
 1. Standards - Require TCP for mobile operations in all plans
2. Project Specific Guide
 1. Overlay Projects - Added notes regarding stage gate check list related to overlay
 2. Off-System and Small Bridge Projects - added default bridge components
3. Item by Item
 1. 8 - added note for DCO to review projects longer than 24 months
 2. 351 - increased default quantity to 10% of total SY of overlay
 3. 628 - add note to put new electrical service near a power supply/transformer
 4. 432 - added guidance for stone riprap
 5. 540 - added requirement for mow strip
 6. 658 - added default items for delineators on MBGF and concrete rail
 7. 512 - added default bid items to allow single slope or F shape for furnish and install

4. Appendix
 1. B-1 – revised process to require consultant designs to contact district pavement engineers
 2. B-1 – revised to remove 70 -22 oil for surface mix, all surface use 76 -22

03/14/19

1. General Plan Sheet Preparation
 1. Asset Maintenance Sheets - updated
2. Project Specific Guide
 1. Profile Pavement Markings on Existing Roadway– new guidance
 2. Metal Beam Guard fence Adjust/Update – new guidance
 3. Water Quality Ponds and WPAP Projects – reference to checklist for designers
 4. River Projects and Cofferdams – added guidance
 5. Joint Bid Utilities - added
3. Item by Item
 1. 164 - revised temp seeding item to use an item that specs warm or cool seed
 2. 528 – added default bid items
 3. 533 – district maintenance preference is the use of profile pavement markings to milled item is being removed
 4. 613/614 – updated high mast illumination
4. Appendix
 1. A – updated and provided project wise link to excel file
 2. B – avoid use of PFC and seal coats at signals and stop conditions
 3. B-1 – updated process for pavement concept and designs
 4. F – updated to reflect new special spec 6302 and state wide standards
 5. H – removed decision matrix for profile marking versus milled
 6. M – revised to use the CST Division calculator instead of the district
 7. S – added appendix related to asset maintenance sheets

11/25/19

1. General Plan Sheet Preparation
 1. Vertical Profile – added
 2. Horizontal Alignment - added
2. Project Specific Guide
 1. Smart Work Zones – added
 2. Lead and Asbestos - added
3. Item by Item
 1. 423 – added note regarding mow strip
 2. 432 – removed requirement to include AUS standard VC-17

3. 512 – updated info for designated source barrier
 4. 543 – added cable barrier to require mow strip
 5. 544 – added to require including mow strip to pay for approach taper
 6. 666 – removed requirement to include black shadow paint with item 677. The master general note has been revised for 677 to make this subsidiary.
4. Appendix
 1. B – adjusted to require tack coat pay item and spec 76 -22 for all surface mix
 2. B – updated for new hotmix bid items for 3076, etc.
 3. H – deleted the appendix that referenced milled rumble strip
 4. S – updated location where asset maintenance sheets are stored

04/10/20

1. General Plan Sheet Preparation
 1. No changes
2. Project Specific Guide
 1. Metal Beam Guard Fence – adjusted
 2. Cable Barrier Safety – added example CSJs
3. Item by Item
 1. Item 466 – require add riprap item between flares of headwalls for boxes
 2. Item 502 – “Give us a break” sign not required
 3. Item 542 – added guidance for payment of removal
 4. Item 544 – added guidance for payment of removal
4. Appendix
 1. B – updated to include reference to new tack, bond, and underseal guide
 2. H – new toad general notes are in draft