# Austin District Designers Guide

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

This is a guide.  District lab, maintenance offices, area engineers, and design engineers can make modifications to plans to engineer a solution.

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

Consultants may request files stored in Project Wise from the TxDOT PM.

Maintained by Austin District Construction Office (DCO)

Austin District Standards and Design Guidance external website:
Austin District standards and guidance (txdot.gov)

Text in blue high light has not been updated to 2024 Spec.

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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.

## Austin District Project Development Manual/Checklist

Completion of this excel file is required for all projects.

Found online @ Austin District standards and guidance (txdot.gov)

Review the manual (excel file) prior to design kick off meeting.

## Pre-Bid Contact and Approver

Design manager to update the Project Managers tab in TxDOT Connect to include Pre-Bid Contact and Approver.

1. Pre-Bid Contact
    1. use the 2 names listed in the AUS district master general notes in the General section.
2. Pre-Bid Approver
    1. Construction Project: Ben Engelhard and Jesus Valdez for all CSJs that don't begin with a 6.
    2. Maintenance Project: Omar DeLeon and Gisel Carrasco for all CSJs that begin with a 6.
3. New Contacts
    1. If new names are added to the general notes, the new name will need approved by submitting a ticket to add them in TxDOT Connect.

# General Plan Sheet Preparation Guide

## Preliminary Plans Posted Online

1. Project Wise for district guidance
    1. 14 - AUS\Offices\Design\Plans Posting Guidance
2. DCO will post on the FTP site the 60% and 90% plans for projects with estimate >$10M.
3. Send Project Wise link to Jesus.Valdez@txdot.gov for 60% and 90% plans.

## Standards

1. Check project wise or website for AUS standards
    1. AUS Standards Project Wise: 14 - AUS\  Standards\District Design Standards\Approved
    2. AUS non Standard Details: 14 - AUS\  Standards\District Design Standards\Non-Standard Details
        1. These are common details that require PE seal.
    3. AUS Standards Website: Austin District standards and guidance (txdot.gov)
2. Include all the BC (Barricade and Construction) and WZ (Work Zone) standards in all plans.
    1. This includes the current rumble stripe standard WZ(RS)-XX.
3. Include TCP(3-1) thru (3-4) standards in all plans. These are the standards used for installation and removal of lane closures.
4. Include the current standard for temporary large roadside signs TLRS(1)-17 thru -17(4).
5. Include the current standard for temporary large sign covering details TS-CD.
6. 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, check with district lab if GPR data is available or request new GPR data if warranted, take cores, or check with local TxDOT office.
2. For construction projects, request a pavement design concept conference with the District’s Pavement Engineer (DPE). The DPE will provide a preliminary typical section. Reference the District Pavement Design SOP, Austin District Pavement Design Process Section.
3. For maintenance projects, the scope and typical sections will be provided by the Maintenance Section. Reference the 4 Year Pavement Maintenance Plan SOP, Project Development Section.

4. Center Line Marking Width for All Roadways
    1. Use center line width as required by AUS District Project Development Manual Safety Checklist. Austin District project development manual
5. Avoid callout hot mix PG grade unless there are different asphalt grades for the same type of mix.
    1. PG will be designated on the bid Item such as 64 -22 or 76 -22
6. Include TE(HMAC) – 11 standard.
    1. Label tapered edge of hot-mix and flex base at 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 data 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.

# Pavement Section

| | |
|---|---|
| Pavement Section Guide | found in ProjectWise @ 14 - AUS\Offices\Construction\Designers Guide\Pavement Design\ |
| Pavement Bid Items: | Please see Appendix B |
| Surface Mixture Map: | found in ProjectWise @ 14 - AUS\Offices\Construction\Designers Guide\Pavement Design\ |
| SAC A Map: | found in ProjectWise @ 14 - AUS\Offices\Construction\Designers Guide\Pavement Design\ |
| Pavement Section: | Example pavement sections found in Pavement Section Guide. |
| Pavement Design SOP: | Austin District standards and guidance (txdot.gov) |

# Project Duration, Schedule Guide, and Delayed Start

## Project Duration

Please see Appendix A for guide to determine number of working days.

## Milestones, Substantial Completion and Project Liquidated Damages

Please see Appendix M for guide to milestones, substantial completion, and additional project specific LDs.

## Construction Production Rates

1. Production rates can be found at following locations:
    1. Construction Production Rates (state.tx.us)
    2. 14 - AUS\Offices\Construction\Designers Guide\Contract Time Schedule
2. Default production rate use medium.

## CPM or Bar Chart

1. Standard Specification Item 8.5.2 allows use of a CPM or bar chart.
    1. Master General Notes need to require a CPM for certain projects.
    2. Master General Notes has a note already inserted if CPM is required.
2. Incorporate Master General Note to require a CPM schedule if:
    1. Project is estimated at over $25 million.
    2. Project is under $25 million but includes one or more of the following:
        1. Project includes a substantial complete milestone.
        2. Project includes A+B bidding provisions.
        3. Conditions such that there is high probability of project delay.
        4. Includes a management plan for utilities.
        5. Includes ROW parcels not acquired at time of letting.
        6. At request of AE
3. Delete the Master General Note to require a CPM schedule if:
    1. Project is under $25 million and does not include the above
    2. Project is an overlay or seal coat.
    3. Project is an SET safety project.

## A + B Bidding

1. A + B Bidding Guide in project wise 14 - AUS\Offices\Construction\Designers Guide\
2. Contact Director of Construction or Jesus Valdez for approval to use A + B.

## Contract Time Determination Schedule

1. See and read all of Appendix A, A-1, and A-2 for additional guidance prior to develop a schedule.
2. Include activities for each utility conflict/owner that impacts the project.
3. All schedules with greater than 24-month duration require DCO review.
    1. Please forward to Jesus.Valdez@TxDOT.gov for review.
4. CPM Calendars use calendars found in Project Wise
5. Bar Chart use templates found in Project Wise
    1. General Template
    2. TOM Overlay

3. Overlay
4. Seal Coat
5. Cable Barrier
6. Off System Bridge

6. Project Wise @ 14 - AUS\Offices\Construction\Designers Guide\Contract Time Schedule

## Computation of Contract Time

1. Use Standard Workweek 8.3.1.4 for following projects.
   1. Overlays, seal coats, and off-system bridges.
   2. All projects with durations shorter than 24 months.
2. Use Five-Day Workweek 8.3.1.1 for the following projects.
   1. All projects with durations longer than 24 months
3. Use of Six-Day Workweek requires DCO approval.
4. Do not use Seven-Day Workweek or Calendar Day.
5. 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.

## Delayed Start Special Provisions

1. All delay special provisions require submittal for approval thru TxDOT Connect.
2. Asphalt Projects
   1. Include SP 008-005 in all overlay and seal coat projects.
   2. This SP will allow start date of work during asphalt season on date selected by contractor.
   3. Asphalt Season is listed in the Master General Notes under Item 300.
   4. Latest work start date is listed in Master General Notes under Item 8.
   5. TxDOT Connect Information
      1. Change Summary Section: No changes are proposed to SP 008-005.
      2. Comments Section: SP 008-005 allows the placement of asphalt products to coincide with the dedicated asphalt season. The SP is being requested for all AUS district projects that are overlay or seal coats. AUS district will specify the asphalt season in Item 300 of the general notes and the latest start date in Item 8 of the general notes.
3. Signal and Illumination Projects
   1. Include SP 008-056 for 90-day delay in all signal and illumination projects.
   2. TxDOT Connect Information
      1. Change Summary Section: No changes are proposed to SP 008-056.
      2. Comments Section: SP 008-056 allows the contractor the ability to order and take delivery of metal and electrical components needed to perform the work. It is an industry wide issue with metal and electrical components have a long lead time between purchase date and delivery. This SP allows the contractor the ability to request electrical meters from a local utility company prior to start of the construction work. This delay will allow the electrical services to be available upon completion of the electrical work. It is an industry wide issue with long lead times up to 6 months to have an electrical service installed.
4. Joint Bid Utilities Projects
   1. Include SP 008-003 for 90-day delay in all projects with joint bid work.
   2. TxDOT Connect Information
      1. Change Summary Section: No changes are proposed to SP 008-003.
      2. Comments Section: SP 008-003 allows the contractor the ability to prepare for joint bid utility work. The contractor will use the delay period to provide submittals to the local utility owner for approval. The utility material must be approved prior to purchase. It is an industry wide issue with utility components having a long lead time

between purchase date and delivery. This delay will allow for utility material approval, purchase, and delivery to get a jump start before the start of construction.

5. 60 Day Delay
    1. If needed, use 90-day delay instead of SP 008-002
6. 120 Day Delay
    1. If needed, use 180-day delay instead of SP 008-004
7. 180 Day Delay
    1. SP 008-010

# Project Specific Guide

Following Project Specific Guidance is for specific types of work. Please use the Item-by-Item Guide and the Appendix for additional guidance.

## Stage Gate Checklist

1. APD/PSE (Form 2442/2443) required for projects with following condition.
    1. Vegetative clearing or tree removal
    2. Work in jurisdictional waters of the US
    3. Hazardous materials present
    4. Houston Toad Habitat
    5. Aquatic Salamander Habitat
    6. Karst Areas
    7. Brick Paving
    8. Historic Area
        1. Adjacent to historic courthouse squares, historic downtown commercial areas, historic residential neighbourhoods, historic farmsteads, historic road corridors, historic parks or recreation areas, and historic bridges
2. APD/PSE not required for the following projects.
    1. Work within the pavement structure
        1. Project meets all the following conditions.
            1. All work is contained within the limits of the paved driving surface.
            2. All work is contained within the roadway pavement structure.
            3. All work is performed from a paved driving surface.
            4. No change to lane configuration
        2. Pavement maintenance projects
            1. Crack seal
            2. Seal coat
            3. Overlay
            4. Mill and Overlay
    2. Work outside the pavement structure
        1. Combination of 3 or more of the following requires verification from ENV.
        2. Sidewalk
            1. Repair or replacement only
        3. Traffic Signal
        4. Sign
            1. Project may include foundations for small and large signs.
            2. Project may not include new overhead sign foundations.
        5. Bridge Repair
            1. Projects where all work is performed from a paved surface.
        6. Stripe
            1. Projects may not add through traffic lane, passing lane, bus lane, HOV lane.
        7. Cable Barrier and Guard Fence
            1. Project may include mow strip and minor embankment of slope.
        8. Safety End Treatments
            1. Project may include install and extensions
        9. Illumination
            1. Repair or replacement only

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

1. Additional item and plan guidance was provided in Appendix G

2. Due to size of Appendix G, this information has been placed in a separate document titled "AUS Designers Guide Freeway Supplemental." 14 - AUS\Offices\Construction\Designers Guide

## Overlay / Seal Coat Projects

1. Reference the - District Pavement Design SOP, Pavement Design Approach for Preventive Maintenance & Rehabilitation.
2. Reference the materials information in the District Pavement Design SOP, Attachment 2, District Material Selection Guide.
3. 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.
4. Include TxDOT Standard TE(HMAC)-11.
5. Delayed Start
    1. Include SP 008-005 for asphalt season.
    2. See Delayed Start Special Provision section of this guide for additional information.
6. Time Charges
    1. Item 8 time charges use the Standard Workweek.
7. Tree Trimming
    1. Verify with Area Office if need to include the following Items:
    2. Item 100 and "PREP ROW PRUNING DETAIL" standard PRWPD-20 (AUS)
8. Backfill Pavement Edges
    1. Include Item 134 for Type A Backfill unless curbed roadway
    2. Add note in sequence of work to place Item 134 prior to surface.
    3. Extend the surface 1 ft. beyond pavement edge.
9. Pavement Repairs
    1. Include Item 351 for pavement repair.
10. Level up.
    1. Is Type D level-up necessary to obtain cross slope and fix rutting?
    2. Required when overlay thickness is 1 in. or less
    3. Include 10% of surface quantity for all roads with visible rutting, flat cross slope, or a bumpy ride.
11. Milling
    1. Include Item 354
    2. For milling under bridges:
        i. Mill under existing bridges/structures to maintain vertical clearance.
            1. Maintain signed vertical clearance signed plus 3" buffer.
            2. If existing vertical clearance changes, contact AUS-Bridge Section.
    3. For mill and inlay/overlay:
        i. Include Item 354-6227 and general note to mill existing ACP layer
        ii. If the pavement design states a specific milling thickness, use the specific item for that milling thickness.
12. Bridges
    1. For bridge deck overlays, contact the AUS-Bridge section for coordination and guidance.
    2. Reference the Bridge Preservation Guide, Chapter 2.2.3, Overlays.
    3. Include Item 438 for cleaning and sealing existing joints.
    4. Include Item 785 for repair/replacement of existing joints.
    5. Do not overlay or use seal coat on an existing direct traffic concrete bridge deck.
13. Erosion Control
    1. Include Item 506 for erosion control.
14. Intersections and Driveways
    1. Include Item 530-6011 to pave intersections, driveways, and turnouts.
    2. Include plan detail showing tapers into driveways and intersections.

3. Avoid use of sealcoat within 300' of a signal or stop condition. Replace with Dense-Graded Type D or TOM-C.

15. Pavement Markings
    1. Include edge and centerline profile markings.
16. Traffic Signals
    1. Include Item 688 to replace existing signal loops or upgrade to other detection method.
17. Metal Beam Guard Fence
    1. Update Metal Beam Guard Fence (MBGF) to new standard and correct height.
    2. See project specific guide for Metal Beam Guard Fence Adjust/Update.
18. Guardrail End Treatments
    1. Update all Guardrail End Treatments to new standard and correct height.
19. Flood plain
    1. Avoid raising roadway profile in a flood plain.
    2. Provide mill detail to maintain existing profile elevation, or
    3. Coordinate with FEMA floodplain to confirm "No Adverse Impact."
20. Operational Improvements
    1. Consider modifications to existing striping to improve operations.
    2. Consider modifications to existing striping to improve bike accommodations.

## Off System and Small Bridge Projects

1. Bridge Beams
    1. Default beams use slab beams Item 0425-7016 thru 0425-7019 (capable spanning 50')
2. Bridge Abutment Riprap
    1. See Item 432.
3. Bridge Rail
    1. See Item 450
4. Typical Section
    1. Please refer to the Pavement Section Guide found in ProjectWise @ 14 - AUS\Offices\Construction\Designers Guide\Pavement Design\
    2. Pavement Section Guide has slide dedicated to this type of project.
5. Cost Reduction
    1. For cost reduction add the following to the general notes:
    2. Item 247 - Flex base is placed via ordinary compaction
    3. Item 275 – Cement may be mixed with base using a motor grader.
    4. Item 341 – Type D (Exempt) for rural areas (ADT < 10,000) and all Type B hot-mix may be placed with a motor grader.
6. Embankment
    1. Use Type B Embankment.
7. Striping
    1. Use Item 672 in lieu of Item 666 to eliminate retro test.
8. River access
    1. Include SS 4027 for payment of construction access to a river. Refer to Item 4027 in the Item-by-Item section.
9. Contract Time Determination Schedule
    1. Use the bar chart template found in Project Wise.
10. Traffic Control
    1. Verify with locals if closure and detour is allowed.
    2. Use 0914-26-007 as example of closure with detour (letting 7/11/2017)
11. Milestone
    1. If roadway closed, consider milestone to control closure duration.
    2. Use 0914-26-007 as example of milestone (letting 7/11/2017).

## Culvert Widening, Installation, and Replacement

1. Example project CSJ 0577-01-026 let 04/2016
2. Use SETs as 1st option to protect end of culvert/pipe.
    1. MBGF is option but creates a long-term maintenance commitment.
3. Temporary Shoring
    1. Temporary shoring for installation of all headwalls that require excavation at back of the headwall.
    2. Temporary shoring for all joints due to traffic control phasing.
    3. Excavation for widenings typically creates a vertical face that requires shoring to allow for culvert extensions and headwall construction.
4. Trench Protection
    1. Include trench excavation protection 402-7001 when necessary.
    2. Trench excavation protection for area parallel to culvert extension.
5. Traffic Control
        1. Consider handling of traffic if culvert requires lane reduction.
    2. Is ADT too high for use of one lane, two-way traffic control?
    3. Can the work be completed during a daytime work shift and travel lane restored?
    4. Should the work be completed on a weekend due to extent of work?
    5. Add necessary pay Items and notes in plans to provide guidance on when and how to perform the work if it impacts travel lane.
6. Wire Fence
    1. Include item to replace fence at ROW if culvert or outfall work is within 5 ft of ROW line.
    2. Select fence type based on standard WF(1)-10 and WF(2)-10
    3. Default item 552-7003 for new fence
    4. Removal of fence is subsidiary to Item 552Edge Drop Off
7. Edge Conditions
    1. Protect edge condition using following options.
    2. Refer to TxDOT Standard Worksheet for Edge Condition Treatment Types.
    3. Positive barrier, such as:
        1. MBGF and allow reuse for permanent installation.
        2. portable metal barrier
    4. Barrels in accordance with BC (10)-14.
        1. If elect to use barrels, reference BC (10)-14 in plans as selected TCP.
    5. One lane, two-way traffic control.
    6. Temporary Traffic Signals.
8. Erosion Control
    1. Include Rock Filter Dams TY 2 downstream of culvert widening.
    2. Include Rock Filter Dams Ty 4 to allow easy movement during widening.

## Notch and Widen

1. Refer to Pavement Design SOP, Flexible Pavement Design for Other Types of New Pavement Structures, Widening Section.
2. 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.
3. Cross Slope
    1. Include hotmix level to re-establish required cross slope or super elevation.
    2. 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. Include 10% of surface quantity for all roads with visible rutting, flat cross slope, or a bumpy ride. Quantity might be adjusted by Pavement or Maintenance Engineer.
4. Vertical and Horizontal Profile
    1. If not adjusting the roadway profile or alignment, please refer to Vertical Profile and Horizontal Alignment guidance in the General Plan Sheet Preparation Guide section
5. Pavement Repair
    1. Include pavement repair Item 351. Quantity and depth provided by Pavement or Maintenance Engineer.
6. Erosion Control
    1. Include Type 4 Rock Filter Dams toallow 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 Sidewalk
        1. Pay Item 0531-7025 CONC SIDEWALKS (SPECIAL)
        3. Temporary sidewalk detail is on district standard MCPSWMD.

## 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
2. Include standard TS-CD-19 to cover large signs that remain or installed during construction but conflict with TCP.

## 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 from 9/16/2016
        1. https://ftp.dot.state.tx.us/pub/txdot-info/sat/specinfo/ada-curb-ramp-sidewalk-guidance.pdf

    2. Curb ramps are required to be included in following projects: 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
2. 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
3. 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

## 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 540-7031 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. Concrete Rail Transition to short rails
    1. See Item 540 to include standards and bid items for trans from MBGF to bridge rail.
6. 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.
7. Embankment
    1. Include default 50 CY Item 132-7015 to embank around the mow strip or guard fence.
8. 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
3. Use the TxDOT Stormwater Management Guidelines document for TxDOT Austin District preferences on BMP selection, design and preferences.
4. See the *draft* TxDOT Standard Details for BMPs for preferences. Pond design sheets are still needed but these details can be referenced.
5. Checklist, guidelines, and draft details are available in project wise 14 - AUS\Offices\Construction\Designers Guide\

## Water/River/Creek/Stream Projects

1. River Access
    1. Include per Item 4027 (need to input the new number) Temporary Construction Access
2. Temporary River Impact or Access
    1. Notify DEQC (Heidi.Beyer@TxDOT.gov) if one or more of the following are required:
        1. DEQC discuss the work with the designer then coordinate with ENV for permits.
    1. Bridge work within limits of ordinary high-water mark
    2. Bridge work in the water
    3. Disturbed soil within 10 feet of the ordinary high-water mark
3. Cofferdams
    1. Use pay Item 403-7002
    2. Include the following general notes for Item 403
        1. 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 riverbed 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 riverbed.
4. Turbidity Curtain
    1. Include per Item 5002 (need to input the new number) Floating Turbidity Barrier.

## 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. Erosion Control
    1. ROW CSJ shall include token quantity of erosion control logs and silt fence.
5. Mobilization
    1. ROW CSJ shall include 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

## Utility Construction Management Plan

1. Conflict Management Transition Design to Construction
    1. The design PM shall contact the AO to obtain contact info for construction PM.
    2. The construction PM shall assume the management roll from the design PM.
    3. The design PM should coordinate a transition meeting to discuss scope the utility management plan.
2. Schedule
    1. Each utility conflict shall have an activity in the contract time determination schedule.

    2. Utility activity shall include 6 months of buffer between date communication utility cleared and impact to construction project.
3. Underground Utilities
    1. See Item 7251 in this guide. Include in contract to help locate utilities.
4. CMP
    1. The CMP is not a contractual document but internal to TxDOT.
    2. The time determination schedule is not a contractual document but for bidding information only
    3. Constraints and assumptions in the CMP and schedule need to be stated in the sequence of work or narrative.
5. Concurrent Phase/Step Work
    1. Standard Spec Item 8.1 allows contractor to work in concurrent phases. Add the following note to sequence/narrative to make the sequence in the schedule contractual.
        2. CONTRACTOR SHALL SUBSTANTILLY COMPLETE A PHASE OR STEP, INCLUDING PERMANENT EROSION CONTROL MEASURES, PRIOR TO PROCEED WITH NEXT PHASE OR STEP. WORK IN MULTIPLE PHASES AND/OR STEPS SHALL BE APPROVED BY THE ENGINEER.
6. Work Start Restrictions
    1. Include a note to restrict the start of a phase or step by note on sequence/narrative. Placing a date in the plans makes the dates in the CMP contractual.
    2. Example Note: UTILITY (LIST COMPANY) RESTRICTION - PHASE 1B MAY NOT BEGIN UNTIL 3/1/2024 UNLESS APPROVED BY THE ENGINEER.
7. Work Near Live Utilities
        1. Include the following note when utilities are not in direct conflict with a structure but conflict with excavation or pavement structure. This allows work to proceed with caution.
        2. Note: THE FOLLOWING IS A LIST OF BURIED UTILITIES THAT MAY REMAIN LIVE DURING CONSTRUCTION. UTILITY: INSERT HERE. TXDOT IS ACTIVLEY WORKING TO RELOCATE THESE LINES TO OBTAIN ADEQUATE CLEARANCE FROM THE PROPOSED CONSTRUCTION. IF LINE HAS NOT BEEN RELOCATED PRIOR TO BEGIN WORK IN THE PHASE, CONTRACTOR SHALL USE ITEM 7251 TO LOCATE THE UTILITIES PRIOR TO BEGIN WORK IN THE AREA. CONTRACTOR SHALL CONTINUE WORK NEAR THESE LIVE UTILITIES PRIOR TO THE RELOCATION OF THE UTILITY. THESE LIVE UTILITIES MAY BE LOCATED AND REMAIN WITHIN THE PROPOSED PAVEMENT OR GRADING. UNLESS THE LINE IS IN DIRECT CONFLICT WITH PROPSED PERMANENT CONSTRUCTION FEATURES, THE PROJECT AND EARTHWORK WORK SHALL PROCEED AND CONTRACTOR SHALL USE CAUTION TO PERFORM THE WORK WITHOUT DAMAGE TO THE UTILITIY.
8. Delay Start
        1. All projects with a utility conflict that will not be cleared within 9 months after letting shall include SP 008-003 for a 90-day delay.
        2. All projects with a utility conflict that will not be cleared within 6 months after letting shall include SP 008-002 allows 60-day delay.

## Rail Road

1. Schedule
    1. Each railroad permit shall have an activity in the contract time determination schedule.
2. TCP sequence
    1. Sequence shall avoid work in RR ROW
    2. Adjust sequence to allow 12 months of buffer between anticipated date to receive permit and impact to construction project.
    3. Add notes to TCP sequence specific to the impact.

4. Control ability for contractor to work in RR ROW
    1. Add note to sequence.
        1. “Phase XXX must be complete prior to work within RR ROW.”, or
        2. “Contractor not allowed to work in RR ROW until date XXXXXX.”
3. Rail
    1. See Item 450 to include chain link fence mounted to traffic/combo rail.

## Smart Work Zones

1. Smart Work Zone Guide (October 2018)
    1. https://ftp.dot.state.tx.us/pub/txdot-info/trf/smart-work-zone-guidelines.pdf
    2. Smart Work Zones (txdot.gov)
2. Smart Work Zone System Go/No-Go Decision Tool
    1. Decision tool is in Appendix A of the Smart Work Zone Guide
    2. gng-decision-tool.xlsx (live.com)
    3. Complete tool for all roadways with AADT over 50,000
    4. 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 and metal railing for lead and asbestos.
    1. Request testing following the district process found at ???
2. Default is remediate/removal all hazardous materials before construction.
    1. Reference the Bill Hale memo for Mitigation of Hazardous Materials dated 4/9/18 stored in Project Wise 14 - AUS\Offices\Construction\Designers Guide\
3. If any level of lead/asbestos remains within the project, regardless of concentration level or location, indicate this presence on the EPIC and plan sheet. Provide details for handling.
4. Indicate the location of the lead/asbestos on the appropriate plan or bridge sheet.
    1. Example plan/bridge sheet note: Based on the asbestos/lead survey, the bridge xxx over xxx has asbestos/lead located at xxx. TxDOT was unable to remove this material prior to letting. The Contractor shall provide 60 day notice to TxDOT to allow TxDOT to coordinate removal of the material. See EPIC sheet for more details.
5. Contact DEQC prior to 60% PS&E for handling of lead and asbestos prior to construction.
    1. DEQC will manage remediation with ENV division.

## Cable Barrier Safety Project

1. See Item 543 in this guide for additional information.

## Traffic Signals

1. Signals in following city limits require city review.
    1. Austin
    2. San Marcos
    3. Pflugerville

## ITS System and Permanent Traffic Counters

1. Review Appendix K for locations of AUS ITS system
2. TxDOT has permanent traffic counters.
    1. Use Statewide Planning and under Additional Overlays select “Permanent Count Stations.”
        1. https://www.txdot.gov/apps/statewide_mapping/StatewidePlanningMap.html

# Item by Item Guide

## Force Account Items

1. Consideration for designers:
    1. Design engineer may adjust the default amounts using engineer's judgement.
    2. Below default amounts for typical AUS projects that include overlay, widenings, etc.
    3. IH 35 or large freeway reconstruction projects over $20M should double the below default amounts.

Default Estimate Amounts
These are non-bid items but used in generation of the project estimate.

1. Law Enforcement 9606-7001
    1. Default amount is 1.0% of the engineers estimate.
    2. Used to fund the use of officers for traffic control assistance.
2. Erosion Control Maintenance 9606-7003
    1. Default amount is $0.00 for overlay and seal coat projects.
    2. Default amount is $7,000.
        1. This is the average amount spent in AUS per project
    3. Used to fund added erosion control work beyond what is covered in bid items.
3. Safety Contingency 9606-7004
    1. Default amount is $35,000.
        1. This is the average amount spent in AUS per project.
    2. Used to fund added safety and traffic control beyond what is covered in bid items.
4. 3rd Party Damage Repair 9606-7011
    1. Include in all jobs.
        1. This allows for repair of all items including crash cushions.
    2. Default amount for jobs without Item 545 is $1,000
    3. Default amount for jobs with Item 545 is 100% of the work zone crash cushion install amount.
        1. Do not include amount for relocate or remove items.

~~5. Crash Cushion Repair 9606-6063~~
~~1. Default amount is 100% of the crash cushion install amount (do not include relocate or remove)~~
~~1. This assumes each installation will be replaced once~~

6. Railroad Flaggers 9606-7008
    1. Default amount is $200,000 for bridge related.
    2. Default amount is $1,000 per day of work in RR ROW for all other work.
    3. Used to fund the use of railroad flaggers when working in railroad ROW.
7. Electrical Service 9606-7009
    1. Default is $2,000 per service.
    2. Used to fund electrical service and electricity cost beyond what is covered in bid items.
8. Irrigation Service 9606-7010
    1. Default is $2,000 per service.
    2. Used to fund irrigation system water meter cost beyond what is covered in bid items.

## 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

1. SP 008-005 required in all seal coat and overlay projects.
    1. See Delayed Start Special Provision section of this guide for additional information.
2. Include lane rental fee per blind note in Item 8
    1. See Appendix O for additional information.
3. Include following notes in projects over $25 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.

## 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 100-7002.
    1. Exceptions:
        1. AO determine if not necessary for overlay and seal coat jobs.
    2. Master General Note has default pruning note.
    3. Include prune detail for urban projects or a project within a city limit.
        1. Use “PREP ROW PRUNING DETAIL” standard PRWPD-20 (AUS)
2. Trees
    1. Designate specific trees for preservation.
    2. Show preservation in tabular form or on plan sheets.
    3. Include tree protection bid Item 100-7014 and 7016.
    4. Avoid listing those to be removed since omission of a tree to be removed could constitute added work.
3. 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. NOT subsidiary to Prep ROW, use necessary bid Item:

1. Default unit of measurement is area (SY), foot (LF) or each (EA).
2. Avoid use of CY due to varying depths in field.
3. Riprap and concrete see Item 104.
4. Large drainage structures, such as headwalls, should have a separate bid Item.
5. Bridges or bridge class culverts use Item 496.
6. Retaining walls use Item 496.
7. MBGF use Item 542-7001 and 544-7003.
8. Small, large, and overhead signs use Item 644, 647 or 650.
9. Electrical services use Item 628.
10. Roadway illumination use Item 610.

## Item 100 Tree Protection

1. Default bid Item 100-7014.and 7016.
2. Include tree protection detail sheet.

## Designate specific trees for preservation. Item 104 Removing Concrete

1. Riprap paid using Item 104-7006.
2. Concrete medians paid using Item 104-7008.
3. Mow strip.
    1. Use Item 104-7005 for removal of mow strip when guard fence remains during removal.
    2. Use Item 104-7003 for removal of mow strip when guard fence or cable barrier is removed.

## 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 material.
3. Topsoil, seeding and blankets.
    1. Include bid items for topsoil, soil retention blankets and seed.
    2. Typically, salvaged topsoil material is not enough to cover the disturbed area.

## 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 B-3 for detail.
3. Include a token quantity of embankment for unknown situations using Item 132-7015.
4. Include following note shown in appendix B-3 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 132-7003.
2. If need a token quantity for unknown situations use embankment Item 132-7015.
    1. Include a general note for Item 132 to explain this item is for use as directed by the Engineer.
3. Provide quantity summary in tabular form by station.
4. Type C to control PI may use 132-7005 if approved by the Area Office.
5. Use Type C1 or C2 when required by the Pavement Engineer (C1 = 132-7007 and C2 = 132-7009).
6. 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 134-7001 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 160-7002 for 4 in. topsoil.

## Item 161 Compost

1. Not commonly used. Use Item 160.

## Item 162 Sodding for Erosion Control

1. Include perm seed or sod for all disturbed areas.
2. 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.
3. Requires identical quantity of Item 160.
4. Use bid Item 162-7002, block sod for small areas.
5. Use bid Item 162-7008, roll sod for large areas more than 1000 SY.

## Item 164 Seeding for Erosion Control

1. Include perm seed or sod for all disturbed areas.
2. Perm seed default pay by SY.
3. Perm seed default use drill seed. Drill seed Items 164-7009, 7010, 7011, or 7012.
4. Temp seed default Item 164-7007
    1. Include for all jobs with soil disturbance and duration longer than 6 months.
5. Requires identical quantity of Item 160 and 169.
6. Do not use bid items for straw/hay mulch, cellulose fiber, hydro seed, or bonded fiber matrix.

## Item 168 Vegetative Watering

1. Use bid Item 168-7001.
2. For calculation of quantity in TGL (1000 gallons) = SY permanent seeding x 0.0014 x 12 weeks

## Item 169 Soil Retention Blankets

1. Use Item 169 to cover all Item 160/164 topsoil or seeded areas.
2. Type of Soil.
    1. Sandy soil blankets for Lee and Bastrop County.
    2. Clay soil blankets for all other counties.
3. Slope Blankets.
    1. Slopes 3:1 or steeper use bid Item 169-7006 for clay or 169-7008 for sandy soils.
    2. Slopes flatter than 3:1 use bid Item 169-7002 for clay or 169-7004 for sandy soils.
4. Channel Blankets.
    1. Use bid Item 169-7030.
    2. If velocity 6 ft per second or more use Item 432.
5. Houston Toad habitat use bid item 169-7026 or 7028.
    1. See Appendix P for toad habitat map.

## 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 | *Desmanthus Illinoensis* | 6.0 |
| Indian Blanket | *Gaillardia Pulchella* | 6.0 |
| Lemon Mint | *Mondarda Citriodora* | 1.0 |
| Bluebonnet | *Lupinus Texensis* | 12.0 |
| Pink Evening Primrose | *Oenothera Speciosa* | 1.0 |
| Black-Eyed Susan | *Rudbecia Hirta* | 1.0 |
| Indian Paintbrush | *Castilleja Miniata* | 1.0 |
| Partridge Pea | *Cassia (Chamaecrista)Fasiculata* | 8.0 |
| Plains Coreopsis | *Coreopsis Tinctoria* | 1.0 |

## Item 192 Landscape Planting

1. Mulch is not subsidiary, use Item 192-7002.
2. Only used in landscape projects.

## Item 247 Flexible Base

3. Default Items see Appendix B-1
4. 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. Default Items see Appendix B-1.
2. Do not use lime treatment for widths less than 6 ft.

3. Default is to lime treat all subgrade east of I-35.
4. Test sulfate of existing soil to determine if lime stabilization is appropriate. Refer to Pavement Design SOP, Soil Movement Mitigation Section.

## Item 275 Cement Treatment (Road-Mixed)

1. Default Items see Appendix B-1.

## Item 276 Cement Treatment (Plant-Mixed)

1. Default Items see Appendix B-1.
2. Item is default for use under concrete pavement.
3. Item 275 is not allowed for concrete pavement.

## Item 310 Prime

1. Default Items see Appendix B-1.

## Item 316 Seal Coat

1. Default Items see Appendix B-1.
2. Reference the ACP Plan Preparation Guide in Appendix B.
3. Reference the Pavement Design SOP, Attachment 2: District Material Selection Guide.
4. AUS district does not use the standard SCTABLE "Seal Coat Material Selection Table."

## Item 334 Hot Mix Cold Laid Asphalt Concrete Pavement

1. Default material 334-7033 for small patch and tapers fixes.

## Item 351 Flexible Pavement Structure Repair

1. Default material noted in District's Pavement Repair Detail and Pavement Design SOP, Attachment 2: District Material Selection Guide.
2. Default quantity is 10% of total SY of overlay. Quantity can be adjusted by Area Office, Pavement or Maintenance Engineer.
3. Include in all overlay and seal coat projects.
4. Default repair depth is 4 in using bid Item 351-7003. Depth can be adjusted by Area Office, Pavement or Maintenance Engineer based on the existing pavement conditions.
5. Tack coat is subsidiary.

## Item 354 Planing and Texturing Pavement

~~1. Default Item 354-6227 (ACP Depth +/- 1/2") for mill and inlay/overlay operations unless a specific milling thickness is provided in the pavement design or scope of work.~~
~~1. Requires use of AUS master general note for Item 354.~~

## Item 360 Concrete Pavement

1. See see Appendix B-1 for hot mix bond breaker.
2. See Appendix B-1 for default material under bond breaker.
3. Transition CRCP to Hotmix.
    1. Include state standard TRANS-20.
    2. Include appropriate bid Item 360-7029 thru 7045

4. CRCP Widening.
    1. Include bid item 104-7001 to saw cut and remove outside 2 in. of existing CRCP.

## Item 400 Excavation and Backfill for Structures

1. Flexible pavement section for cut and restore is provided in Master General Notes and flex pave district standards.
    1. Default Item is 400-7006.
2. Concrete pavement section for cut and restore shall be provided by designer.
    1. Default Item is 400-7007.
        1. 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. Karst features (caves) a possibility? If yes, see Appendix I.
2. Core Holes.
    1. May be used if there is not sufficient sub soil information below drilled shaft tip or engineer has of doubts of soil below tip elevation.
    2. Core holes, if required by engineer, must be requested by general note per Item 416.3.2 and paid using Item 416-xxxx.
    3. Typical Core Hole General Notes to add to Item 416:
        1. Core holes are required for all drill shafts at the following bridges: xxxx.
        2. Core holes are required all drill shafts on the project.
        3. Core holes are required for all drill shafts at the following bents: xxxx.

## Item 420 Concrete Substructures

1. Provide a 4:1 sloped abutment top for bridges with I girders in the following locations:
    1. Hays County, Travis County, Williamson County, and abutments within 25-year flood
    2. See Appendix F.

## Item 423 Retaining Walls

1. Designate retaining walls by numbers, not letters.
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. Soil Nail
        1. Requires both fascia and anchor item.
        2. Soil Nail anchor use Item 410-7001.
        3. Soil Nail fascia use Item 423-7023.
4. Rock Nail
        1. Requires both fascia and anchor item.
        2. Rock Nail anchor use Item 411-7001.
        3. Rock Nail fascia use Item 423-7024.
5. Drainage
    1. Avoid use of RCP pipe in retaining walls since the joints are unrestrained.
    2. Use of RCP pipe will require concrete pipe collars at the joints.
6. Underdrains
    1. Required using 6 in. Type 6 Item 556-7006.
    2. Show location and outfall. Does it tie into a storm sewer or open ended?
7. Mow-strip use bid Item 432-7013.

    1. Place at the face of the wall. Item 432 master general notes have default 2' wide. Detail not required but location should be shown on wall typical section.
8. Coping
    1. Retaining walls under box beams shall have coping directly under box beams.

## Item 432 Riprap

1. Non-mow strip uses Item 432-7005.
    1. Master General Note has default of 5 in.
2. Mow-strip use bid Item 432-7013
    1. Include state standard GF (31) MS-XX.
    2. Master General Note has default of 4 in.
    3. Required for guard fence and cable barrier.
3. Bridge abutments in waterways
    1. Include state standard SRR.
    2. Default Item 0432-7043 18 in. stone protection.
4. Culvert Outfalls
    1. Include from edge of outfall to ROW line.
    2. Default Items based on velocity.
        1. Less than 4fps Item 0432-7029 8 in. dry.
        2. 4 fps to 6 fps Item 0432-7031 12 in. dry.
        3. Greater than 6 fps Item 0432-7032 15 in. dry.
5. Riprap under bridges in low vegetation growth areas.
    1. Default Item 0432-7036 6 in. with grout.
    2. Use in lieu of concrete riprap or brick pavers.
    3. Not intended for use in waterways under bridges.

## Item 438 Cleaning and Sealing Joints

1. For existing bridges
    1. Include AUS district nonstandard CSBJ-22(AUS).
    2. Without ACP overlay use Class 7 Silicone Seal Item 438-7007.
    3. With ACP overlay and span 100' or less use Class 3 Hot-Poured Rubber Seal Item 438-7004.
    4. With ACP overlay and span more than 100' use expansion joint header both Items 454-7009 and 454-7010.

## Item 450 Railing

1. Rail Foundation
    1. Include Item 420-7052 for concrete rails not mounted on a bridge or retaining wall.
    2. Include statewide standard TRF.
2. Roadway
    1. Center medians see Item 514.
    2. Edge of roadway use Item 450-7024 with traffic rail foundation Item 420-7052 and statewide standard TRF.
3. Bridges, Retaining Walls, Structures.
    1. Direct Connectors.
        1. Traffic: T80SS Item 450-7028.
            1. Also include Safety Barrier Line Marking using special specification (special specification does not have number yet)
    2. Over Waterway.
        1. Traffic: T223 Item 450-7008.

    2. Combo: C223 Item 450-7034.
3. Retaining Walls
    1. Traffic: SSTR Item 450-7024.
    2. Combo: C221 Item 450-7032.
4. Off System bridges
    1. Traffic: T223 Item 450-7008.
    2. Combo: C223 Item 450-7034.
    3. Aesthetic: T66 Item 450-7022.
        1. View rail in google maps @ 29.888003205958565, -98.36825521299347
5. All other bridges
    1. Traffic: SSTR Item 450-7024.
    2. Combo: C221 Item 450-7032.
6. Center Median
    1. See Item 514
7. Aesthetic
    1. Allowed if speed 45 or less.
    2. Traffic in tangent: T411 Item 450-7014.
    3. Traffic in radius: See “MOD in radius”
    4. Combo in tangent: C411 Item 450-7038.
    5. Combo in radius: See “MOD in radius”.
    6. MOD in radius: SSTR MOD Item 450-7xxx.
        1. See 0015-13-382 Sheet 1784 and 1993, Letting 8/9/17.
8. TL 4
    1. Traffic: SSTR Item 450-7024.
    2. Combo: C402 Item 450-7036.
9. With Metal Elements.
    1. Do not use rails that have metal elements (i.e. T1F, T2P, T77, etc.).
    2. If metal elements are required for aesthetics, do not use metal in a radius. Transition to a traffic or combo rail listed above to avoid damage and maintenance of metal rail.

4. Pedestrian
    1. Separate Traffic and Pedestrians.
        1. Combo: C221 Item 450-7032.
    2. Separate Traffic and Pedestrians over waterway.
        1. Combo: C223 Item 450-7034.
    3. Edge of a bridge.
        1. PR11 Item 450-7044 at edge of bridge when pedestrians are protected from traffic.
            1. See Appendix C.
        2. Combo C221 at edge of bridge when pedestrians are not protected from traffic.
    4. Not on a bridge.
        1. < 30in. drop off use Type B 450-7059.
        2. >= 30 in. drop off use Type F 450-7063.
5. Railroad
    1. Traffic: SSTR Item 450-7024.
    2. Combo: C221 Item 450-7032.
    3. Include CLF-RO Item 450-7049 attached to traffic and combo rail.
        1. Need bid items for CLF-RO AND the traffic/combo rail.

## Item 454 Bridge Expansion Joints

1. For existing bridges see Item 438.
2. For new bridges.
    1. Include AUS district nonstandard CSBJ-22(AUS).
    2. Use Type M Item 454-7004 and include state standard SEJ-M.

## Item 460 Corrugated Metal Pipe

1. Not allowed for storm drains or cross drainage.
2. Not allowed in following counties due to sandy soils and rust potential: Bastrop, Lee, Caldwell.
3. Only allowed for driveway pipes.
4. Default use CMP for driveways.
    1. Use RCP in sandy soils due to CMP rust issues.
5. Inspect all 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.
3. Include temporary shoring at joints caused by traffic control phasing.
4. Include trench excavation protection.

## Item 464 Reinforced Concrete Pipe

1. Verify existing pipe size during site visit.
2. No pipes smaller than 18 in. for storm drains.
3. Not allowed to use arch or elliptical pipes DES 8 or larger. Not cost effective or available.
4. Install longitudinal lines under existing pavement to limit conflicts with existing utilities.
    1. Backfill trench with CSB and pay using Item 400-7010.
5. For concrete collars use Pharr District Standard
    1. .dgn file found in project wise @ 14 - AUS\Offices\Construction\Designers Guide\
    2. Do not include the Pharr backfill details.

## 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 see Item 479.

## 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 432-7005 for riprap when using flared wing wall standards for box culverts.
    1. See note 5 on the standard that requires Item to be added.
3. Include stone riprap at outfall in accordance with Item 432 in this guide.
4. Include temporary shoring at back of wall for all walls that require excavation.

## Item 467 Safety End Treatment

1. Allow precast and cast in place for all projects.
    1. Include precast (PSET-xx) AND cast in place standards (SETP-xx)
    2. Include precast end treatment riprap detail (PSET-RR).
    3. Use Type II Safety End Treatment Guide.
        i. setguide.pdf (state.tx.us)
        ii. Use Option 2 for all pipe types to require WITH riprap aprons.

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 479 Adjusting Manholes and Inlets

1. Capping Existing Inlet
    1. Inlet bid Item 479-7xxx.
    2. Manhole bid Item 479-7xxx.
    3. For capping an existing inlet or a manhole use drainage standard PSL lid Style 'SL'
    4. prestd05-20.pdf (state.tx.us)
2. Adjusting Inlet use Item 479-7003
3. Adjusting Manhole use Item 479-7003

## Item 496 Removing Structures

1. Bridges or bridge-class culverts will be paid using bid Items 496-7009 thru 496-7012.
2. Retaining walls will be paid using bid Item 496-7019.

## 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 503 Portable Changeable Message Sign

1. Pay by EA if duration is longer than 12 months 503-7002.
2. Pay by DAY if duration is shorter than 12 months or an overlay/seal coat project 503-7001.
3. Quantity to be confirmed by the Area Office.
    1. Default quantity by EA = 1
    2. Default quantity by DAY = 30

## 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 505 Truck Mounted Attenuators and Trailer Mounted Attenuators

1. Default include Stationary 505-7001 for ALL projects.
2. Default include Mobile 505-7003-6005 for contracts with mobile operations such as pavement markings (662, 666, 668, & 678), milling (354), overlay, raised pavement markings (672), herbicide (731), debris removal (735), etc.
3. Default quantity use TMA Estimation Calculator.
    1. Excel file in project wise 14 - AUS\Offices\Construction\Designers Guide\Estimate Calculators

## Item 506 Temporary Erosion, Sedimentation and Environmental Controls

1. Implementation and SW3P sheets.
    1. Use following erosion controls based on need:
    2. Erosion Logs - sheet flow, along ROW line, minor ditch flow w/ velocity less than 4 ft/sec
    3. Silt Fence – use in ditch flow.
    4. RFD Type 4 – use in ditch flow when need to relocate control often due to nature of work
    5. RFD Type 2 – culvert outfall and dry creeks
    6. RFD Type 5 – culvert outfall and dry creeks in sensitive areas
2. Default Items
    1. Include a minimum of 100 LF of erosion logs in ALL jobs.
    2. Include all default items for erosion logs, silt fence, and RFD Type 2&4 in all plans with soil disturbance.
    3. If item not shown on SW3P sheets, use token quantity of 100 LF of each item.
3. Erosion Control Logs
    1. Default Items 0506-7044 and 7046.
    2. Standard size 12 in. Avoid use of other sizes to allow for consistency district wide.
    3. Required on overlay and seal coat projects. Use instead of silt fence.
4. Silt Fence
    1. Default Items 506-7039 and 7041.
    2. Not required on overlay and seal coat projects. Use erosion logs instead.
5. Rock Filter Dams.
    1. Default Items 506-7002, 7004, 7048, and 7011.
        1. Item 506-7048 required for all projects with Type 2. Provides 6:1 slope for RFD in clear zone.
    2. Include Item 0506-7002 Type 2 at culvert outfall when widening a culvert.
    3. Include Item 0506-7004 Type 4 in ditches for widening jobs or short-term culvert outfall.
6. Waterways
    1. Include district temp water crossing detail for all waterways including dry creeks.
        1. File found in project wise @ 14 - AUS_Standards\District Design Standards\Non-Standard Details
    2. Use Floating Turbidity Barrier Item 5002 for waterways that are not dry creeks.
        1. A dry creek is a waterway that only has water during rains and until runoff is over.
        2. See Item 5002 in this guide for additional guidance on when to use.

## Item 510 One-Way Traffic Control

1. Long term one-way traffic control that remains beyond working hours (overnight, weekends)
    1. Default Item 510-7003.
    2. Include Item 6xxx-7xxx to supplement the signal with portable illumination at each signal.
    3. Include standard TCP (2-8)-23.
    4. Include Item xxxx (need new 2024 spec to replace 6480/6509) if driveways or intersections are located between the signals.

## Item 512 Portable Traffic Barrier

1. All barriers shall be furnished and install unless approved by DCO.
2. Furnish and Install bid Items:
    1. It is preferred and default method to have contractor furnish and install barrier.
    2. Greater than 45 MPH without driveways use Items 7085, 7086, 7088
        1. Include all the following standards: CSB(1)-10,CSB(7)-10, SSCB(2)-10, SSCB(5)-10, HIGHWAYGUARD-21, BARRIERGUARD-19, & ZONEGUARD-19
    3. Greater than 45 MPH with driveways use Items 7093, 7095, 7097
        1. Include the following standard: LPTB-22
        2. LPTB does not have an approved CCA.
            1. Include 7085, 7086, 7088 with CCA to protect the end of the LPTB.
        3. Add following general note to Item 512: A quantity of portable low profile T barrier has been included in the plans. When TCP requires portable traffic barrier upstream of a driveway, the T barrier shall be used in lieu of the barrier type shown on the plans for the 100 FT. of barrier directly upstream of a driveway. The T barrier will allow the driveway user to have line of sight to see oncoming traffic. The T barrier does not have an approved end treatment; therefore, the T barrier shall be tucked in behind and protected by the portable traffic barrier and its associated crash cushion.
    4. 45 MPH or less use Items 7009, 7010, 7033, 7034, 7057 and 7058
        1. Include the following standards: LPCB-13
3. Designated source barrier:
    1. AUS district does not have barrier to provide.
    2. Reserve barrier by contacting DCO 6 months prior to letting.
    3. Caution: There is very small or no quantity of low profile in stock to designate a source
    4. Greater than 45 MPH use Items 7086, 7087.
        1. Include 100 LF of Item 104-7xxx to pay for disposal of barrier that is not reusable.
    5. 45 MPH or less (low profile) use Items 7021, 7022, 7033, 7034, 7045, and 7046

## Item 514 Permanent Concrete Traffic Barrier

1. Bridges, Retaining Walls, Structures see Item 0450
2. Roadway
    1. Center Median use 0514-7009 thru 7012
    2. Center Median in lieu of cable barrier.
        1. Refer to CSJ 3417-02-038 for go by plans.
    3. Edge treatment see Item 450.
3. Transitions
    1. Include the SSCB transitions items when connect Item 514 to Item 450.

## Item 527 Color Textured Concrete

1. Default use color textured concrete instead of landscape pavers.

2. Use Item 527-7002 for 5 in. color textured concrete.

## Item 528 Landscape Pavers

1. See Item 527.

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

1. Default Item 529-7008 Concrete Curb and Gutter Type II.
2. Curb and gutter should sit on base or subgrade. Avoid placing on layer of HMA to avoid remobilization of HMA crew when curb is complete.
3. Layers of HMA below the bottom of the curb can include note to allow blade lay to avoid multiple mobilization of the hotmix crew.

## Item 530 Intersections, Driveways, and Turnouts

1. Include AUS district standard DW-XX(AUS)
    1. project wise 14 - AUS_Standards\District Design Standards\Approved
    2. AUS Standards Website: Austin District standards and guidance (txdot.gov)
2. Driveways
    1. Use bid item to match roadway surface.
    2. Conc 530-7006, ACP 530-7010 or Surf Treat 530-7016
    3. Replace concrete with concrete.
    4. Provide separate pay items for each surface type.
    5. Master General Note provides specs for default typical section.
    6. Base driveway item 530-7015 is not allowed.
        1. Upgrade existing base driveways to ACP or SURF TREAT to match roadway surface.
    7. Verify driveway pipe type and size.
3. Fast Track Driveways
    1. Conc 530-7007 or ACP (Type 3) 530-7013
4. Turnouts
    1. Turnout surface to match driveway.
        1. Conc 530-7017, ACP 530-7018 or Surf Treat 530-7019
5. Driveway Pipes
    1. Include Item 401-7001 to concrete encase if pipe extends into pavement structure.

## Item 531 Sidewalks

1. Include district standard MCPSWMD.
2. Use bid Item 531-7002 for 5 in. thick sidewalk and shared use path.
3. Use bid item 531-7025 for temporary sidewalk.
    1. Temporary sidewalk detail is on district standard MCPSWMD.

## Item 533 Milled Rumble Strips

1. District moving away from milled rumble strip.
2. See Item 666 and 668 for center and edge treatment.
3. Use Item 533-7005 thru 7008 for filling 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. Do not use adjust Items, use remove and install.
    1. See Project Specific Guide section for Metal Beam Guard Fence Adjust/Update
2. Include a mow strip per Item 432.
3. Include delineators per Item 658.
4. Use Item 467 SETs as 1st option to protect end of culvert/pipe.
5. See Standard BED-14 for bridge ends.
    1. Use Non-Sym trans when applicable and bid Item 540-7016.
6. Verify posts do not conflict with underground drainage or utilities.
7. 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.
8. Concrete Rail Transition to short rails
    1. T2,T201,T202,T5,T501,T502 include retrofit standard from bridge standards.
    2. Include item 540-7029 for payment of anchor plate.

## Item 542 Removing Metal Beam Guard Fence

1. MBGF paid using Item 542-7001
    1. A separate bid Item for TAS (542-7002) or DAT (542-7006) is not required unless removal of adjacent MBGF is not included.
    2. GET removal paid using Item 544.

## Item 543 Cable Barrier System

1. Type
    1. Use TL-4 for all applications, not TL-3.
    2. Default Item 543-7002 and 543-7018.
2. Standards
    1. Include ONLY the following standards CASS(TL4)-14 and GBRLTR(TL4)-14.
3. Mowstrip.
    1. Include a mow strip per Item 432.
4. Example
    1. Reference CSJ 0204-01-074 (letting Feb 2024 for Georgetown Area Office) for go by plans and pay Items required for cable barrier safety projects.
5. Delay Start
    1. Include SP 008-xxx delay start in cable barrier safety projects to allow time to procure materials.
6. Earthwork
    1. Include embankment Item 132-7015 to address slope per standards for projects without earthwork. Include a token amount of 10 CY per 1000 LF of barrier.
    2. Include blading Item 150-7001 to address slope per standards for project without earthwork. Quantity will need to reflect the entire length of the cable barrier installation.
7. Delineators.
    1. Subsidiary and general notes for Item 543 must specify delineator type.
8. Barrier placement location:

1. See Roadway Design Manual Appendix A Item 8.
2. Should be installed at least 12 feet from the edge of the travel lane.
3. Should be installed on the inside (concave) side of curves.
4. Should be installed on the high side of separated roadways.
5. Should be installed min 8 feet and preferably 10 or more feet from the ditch bottom.
6. See TxDOT Roadway Design Manual Appendix A.8 for more information.

## 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 544-7003.
3. Installation paid using Item 544-7001.

## Item 545 Crash Cushion Attenuators

1. Include 2013 Crash Cushion Summary Sheet standard CSSS.
2. Use bid item for TL3 for ALL applications.
    1. 70 mph rated CCAs do not exist. Use the above TL-3 rated cushions for all installations.
3. Link to latest CCA approved devices cccc.pdf (state.tx.us)
4. Below are confirmed by maintenance supervisors. Do not revise unless approved by the maintenance supervisor.
5. Permanent Installations.
    1. Use bid items 545-7006 for narrow or 545-7008 for wide.
    2. Include ONLY the following standards:
        1. Wide: QGELITE(M10)(W)-20 and TAU-II R(W)-16
        2. Narrow: QGELITE(M10)(N)-20and TAU-II R(N)-16
    3. Avoid using following standards: REACT (M)-21, REACT (W)-16
6. Temporary Work Zone Installations
    1. Use bid items 545-7002 for move/reset and 545-7004 for remove.
    2. Use bid items 545-7018 for narrow or 545-7020 for wide.
    3. Include the following standards for wide and Narrow: ABSORB-M, SLED (NOT SLED MINI), TAU(M)(N), QG(M)(W), QUADGUARD (M10)(N), SMART (N), SMART (W)

## Item 560 Mailbox Assemblies

1. Default bid items
    1. Below are confirmed by maintenance supervisors. Do not revise unless approved by the maintenance supervisor.
    2. Single default item 0560-7008.
    3. Double default item 0560-7009.
    4. Multiple default item 0560-7010.

## Item 585 Ride Quality for Pavement Surfaces

1. See Appendix N for ride schedule.
2. Adjust Item 585 general notes to reference the correct schedule per Appendix N.
3. Do not include Item 585 bid items.
    1. These items will be added after letting by construction staff.

## Item 610 Roadway Illumination Assemblies

1. Coordinate with District Maintenance Office to verify city maintenance of new assemblies.
2. Default is use high mast to reduce maintenance.
3. Conventional lights use Type SA unless on concrete barrier then use Type SP
4. Pole Height
    1. Default height is 40 ft. for conventional illumination poles.
    2. The best price per foot and most common size for illumination poles is 40 ft. tall pole.
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. 614 6014 LED HI MST IL AM(6 FIXT)ASYM(TY A)SHLD~~
    ~~2. 614 6015 LED HI MST IL AM(6 FIXT)ASYM(TY B)SHLD~~
~~2. Pole default Items~~
    ~~1. Select appropriate Item 613 based on location, height, and wind~~
1. Use high mast at intersections to provide complete coverage with less poles.
2. Use high mast for illumination of roundabout and other innovative intersections.
3. Design TCP to install and energize early in project sequence.
4. Verify pole location does not conflict with overhead utilities.
5. Rural High Mast locations and pole height
    1. Light assembly use 614-7010
    2. Pole use 100 ft. pole using 613-7001 or 613-7002
6. Urban High Mast locations and pole height
    1. Light assembly use 614-7010
    2. Pole use 100 ft. pole using 613-7005 or 613-7006
    3. Interchanges may use 150 ft. pole to accommodate height of direct connectors.
    4. Use high mast at intersections to provide complete coverage with less poles.
    5. Use high mast for illumination of roundabout and other innovative intersections.
    6. 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)
    7. Loop 1
        1. William Cannon to Southwest Blvd. (100 ft. pole)
        2. US 183 to SH 45 NW (100 ft. pole)
    8. US 183
        1. SH 45 SE to Lakeline Mall Dr. (100 ft. pole)
    9. SH 71
        1. IH 35 to US 183 (150 ft. pole)
        2. All other sections (100 ft. pole)
            1. Exception within airport runway area
    10. 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)
2. Use HDPE for all ITS, illumination, and signal.
3. Use HDPE for all bores for ITS, illumination, and signal.
4. Do not use PVC SCH 40 or SCH 80.

5. Do not use ½" sizes. Use only whole number sizes of pipe.
6. AUS has general note for Item 618 to allow PVC or HDPE at contractor's choice.
7. Default pipe size when buried shall be 2 in. or 3 in. Do not use ½ or ¼ in. increments.

## Item 619 ITS Multi-Duct Conduit

1. Default Item 619-7010 or 619-7011
2. Bridge mounted conduit used Item 619-7009.
3. Concrete encasement not required.
4. Pay for each conduit individually. NOT as a system of conduits.
5. Do not use Schedule 80.

## Item 617 Temporary Roadway Illumination

1. Consider including portable light tower at busy intersections or TCP transitions.
    1. Use bid Item 617-7002 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. Use insulated conductors for all wires, including the ground wire.
2. 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 Type D with aprons 624-7008.
2. All ground boxes should include aprons.

## Item 628 Electrical Services

1. All services should be 120/240.
2. Electrical services installed after January 2015 should be reused.
    1. Electrical service standard was last updated in 2014.
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. All signs use 10BWG post with slip base anchor.
    1. Items 0644-7001 thru 7020.
    2. 48" Yield and Stop use T support
    3. 54" one way use T support
2. Sign Size
    1. 36" x 36" minimum sign size.
3. Sign Location
    1. Sign Crew Field Book Sign Crew Field Book (SFB) (txdot.gov)
    2. Route markers shall be installed using Sign Crew field book at the preferred location.
4. Cross Traffic Does not Stop.

    1. This sign is required on Stop Signs when condition exist.
5. Bridge rail mounted signs.
    1. should be avoided due to limited access for maintenance.
    2. If necessary, use bid Item 644-6066 and statewide standard SMD (BR-1)-14.
6. Bridge mounted vertical clearance signs.
    1. Use bid Item 644-7061 or 644-7062 and statewide 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.
3. Include standard TS-CD-19 to cover large signs that remain or installed during construction but conflict with TCP.

## 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. MBGF
    1. Use (BRF)GF2 bid Item 658-70018 (white) or 658-7036 (yellow).
2. Cable barrier delineators
    1. These are subsidiary.
    2. In a center median use (BRF)GF2 bid item 658-7022 (yellow).
3. Concrete Rail
    1. Use (BRF)CTB bid Item 658-7012 (white) or 658-7031 (yellow).
    2. Use (BRF)CTB(BI) for concrete rail separating traffic using item 658-7032 (yellow).
4. Ground and Surface Mount
    1. Delineators use W or Y FLX for GND and SRF mount.
5. Object Markers
    1. Type 2 Object Markers use W or Y FLX for GND and SRF mount.
    2. Type 3 Object Markers use TWT for GND mount 658-7066, 7070.
    3. Type 3 Object Markers use W or Y FLX for SRF mount.
6. Flexible posts for delineators and object markers shall match the adjacent roadway stripe.
    1. YFLX for near yellow stripe and in center medians or cross overs.
        1. D & OM(4)-20: Detail 1
    2. WFLX for near white stripe and along outside edge of roadway.
        1. D & OM(4)-20: Detail 2, 3, 4.

## 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. Pavement Markings
    1. Do not use the sealer except on concrete pavement and bridge decks.
    2. Place Type II then Type I for final surface.
    3. Type II
        1. Use bid Items 666-7172 thru 7221

    4. Type I
        1. Use thickness per 666.4.4.1.1
        2. Do not use High-Performance markings.
        3. Do not use all weather markings.
        4. More guidance coming on when to use high performance and all-weather markings.
2. Center Line Rumble Strips.
    1. Are required in addition to profile markings.
    2. See Item 668 for additional information.
3. Profile Markings
    1. Use on all roadways with speed 50 mph or greater.
    2. Use for ALL solid yellow lines with speed 50 mph or greater.
        1. This includes center turn lane solid and broken yellow line.
    3. Edge or Center line
        1. Use 90 mils for edge and center line.
        2. Use below items on top of Type II markings in lieu of Type I non profile markings.
        3. Use bid Item 666-7265 for edge treatment.
        4. Use bid Item 666-7269 or 7273 for centerline.
    4. Profile marking on an existing stripe.
        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.
        2. 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.
                a. Trace over with Type I 60 mil profile marking.
                b. 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.
                a. Trace over with Type 1 60 mil non-profile marking.
            3. Roadway has existing profile pavement markings in poor audible quality.
                a. Eliminate existing profile using Item 677 then trace over with a Type I profile marking.
4. Seal Coats
    1. Use 100 mil for all markings, including profile. Per Item 666.4.4.1.1.
5. Concrete Pavement
    1. See Item 668 for contrast broken stripe per CPM (1)-23.
    2. Do not use shadow stripe.
    3. Use sealer instead of Type II under the Type I.
6. Bridge Decks
    1. See Item 668 for contrast broken stripe per CPM (1)-23.
    2. Do not use shadow stripe.
7. Handicap
    1. See Item 668.
8. Route Markers.
    1. See Item 668.

## Item 668 Prefabricated Pavement Markings

1. Center and Edge Rumble Strip
    1. Include 668-7002 in all projects for centerline rumble strip.
2. Route Makers

    1. use Item 668-7135 for lane designation.
3. Handicap
    1. wheelchair symbol use Item 668-7133.
4. Concrete pavement and bridge decks
    1. Skips use Item 668-7012 for contrast lane line per CPM(1)-23 on concrete driving surface for roadway and bridges.

## Item 672 Raised Pavement Markers

1. Follow state standards.
2. Use 40 ft. spacing when required by System Safety Checklist Construction tab in the Austin District project development manual

## 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.
3. Use Item 677-7xxx thru 7xxx for contrast stripes on concrete pavement.

## Item 680 Highway Traffic Signals

1. Include a signal timing plan.
2. All signals must include illumination mounted to the top of the signal poles.

## Item 681 Temporary Traffic Signals

1. Include a signal timing plan.
2. Include temporary illumination in layout.

## Item 682 Vehicle and Pedestrian Signal Heads

1. All signal and pedestrian heads shall be aluminum.
2. All signal heads shall include reflective vented aluminum back plates Items 682-7042 thru 682-7044
3. Pedestrian signal heads shall be countdown bid Item 682-7018

## Item 688 Pedestrian Detectors and Vehicle Loop Detectors

1. Pedestrian detectors shall be APS bid Item 688-7001.
~~2. Include District Standard PPA-14(AUS)~~
3. If replacing vehicle loops, include 2 EA Item 624-7001 Ty A Ground Box 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 730-7019 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. Requires a checkbox in TxDOT Connect in the estimate section to designate "Federally Non-Participating."

## Item 734 Litter Removal

1. Use bid Item 734-7002 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. Requires a checkbox in TxDOT Connect in the estimate section to designate "Federally Non-Participating."

## Item 738 Cleaning and Sweeping Highways

1. Use bid Item 738-7104 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. Requires a checkbox in TxDOT Connect in the estimate section to designate "Federally Non-Participating."

## Item 740 Graffiti Removal and Anti-Graffiti Coating

1. Do not use anti-graffiti coating.
2. Include Item 740-7003 at quantity of 200 SF for following roadways located in Travis County: IH 35, US 290, Loop 1, and US 183.
3. Requires use of State funds only, no Federal participation.
    1. Requires a checkbox in TxDOT Connect in the estimate section to designate "Federally Non-Participating."

## Item 4xxx Temporary Construction Access

1. Default bid Item 4027-6001
2. Requires a plan sheet to explain the nature of the work and constraints.
3. Include for bridges and bridge class culverts that meet 1 or more of the following conditions:
    1. Bridge permanent work within limits of ordinary high-water mark
    2. Bridge permanent work in the water
    3. Temporary work or pad in the water to build the bridge.
    4. Very steep banks to access the bridge work.
    5. Requires large amount of temporary excavation or embankment to build bridge.

## Item 5002 Floating Turbidity Barrier

1. Default bid Item 5002-6001 and 6002
2. Include for the following conditions:
    1. Not required for dry waterways
    2. Typical flow depth of waterway should be 3 ft. or deeper.
    3. Bridge bent work (shafts and columns) within 25 ft. of a waterway.
    4. Soil disturbance within 25 ft. of the waterway.
    5. Soil disturbance or bridge work within 25 ft. of the following waterways.
        1. San Marcos River, Colorado River, Blanco River, Pedernales River, Llano River

## Item 5xxx Construction Perimeter Fence with Screen

1. Include visual screen along ROW line when parks, residential homes, or objects that could benefit from a visual barrier are directly adjacent to ROW.
2. Include sound dampener along ROW line when rock excavation is directly adjacent to single and multifamily homes.

## Item 5xxx Orthophoto

1. Include in all jobs over $25M.
2. Include in all jobs with a CMP (construction management plan) for outstanding ROW or utilities.

## Item 6xxx 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. Include the work zone standards WZ-ITS
3. Quantity is based on anticipated closures with following as default.
    1. Type 1 - Item 6xxx-6001 - 2 for each month of barricades.
    2. Type 2 - Item 6xxx-6002 - 8 for each month of barricades

## Item 6xxx Temporary Speed Monitoring System

1. Include on roadways meeting one or all following conditions.
    1. Construction speed zone reduction of 10 mph or more
    2. TCP plan has several shifting tapers.
    3. TCP has narrow lanes.
    4. Work area is static.
        1. Not used for overlay or other moving operations
2. Default pay by Day using Item 6xxx-7001
    1. Include an installation for each direction.
    2. Quantity = 1 per day per direction per duration of the above conditions

## Item 6xxx Temporary Construction Equipment Alert System

1. Include on roadways meeting all following conditions.
    1. ADT over 50,000
    2. Work traffic has to enter high speed (55 mph or more) roadway.
    3. Work area is static.
        1. Not used for overlay or other moving operations
2. Default pay by Day using Item 6309-7001
    1. Include an installation for each direction.
    2. Quantity = 1 per day per direction per duration of the above conditions
3. Include AUS master general notes and plan detail.

## Item 6xxx Temporary Incident Detection and Surveillance System

1. Include 6xxx-6002 for reconstruction projects on below roadways.
    1. IH 35 - ALL
    2. Loop 1 - ALL
    3. US 183 – SH 29 to SH 45 SE
    4. SH 71 - Y in Oak Hill to SH 130

5. US 290 – FM 1826 to SH 130
2. Use 0015-13-077 sheet 3036 as example layout.
3. Do not use pay by the EA. Pay by day allows the ability to keep longer or remove earlier.
4. If a divided highway include one for each direction.

## Item 6xxx Portable Roadway Illumination

1. Include 6412-6001 for project with following conditions that have poor lighting.
    1. Projects with lane closures in areas with high volume and a queue.
    2. Projects with intersections that have revised traffic patterns.
    3. Projects with a shifting tapers.
    4. Projects with portable or temporary traffic signals.
    5. Projects with temporary detours that have curves.
2. Default quantity
    1. Duration less than 6 months = 25
    2. Duration more than 6 months = 50 per year

## Item xxx Full Color Matrix Dynamic Message Sign (DMS)

1. All new, replaced, or relocated DMS shall be updated to Full Color Matrix.

## Item 7xxx Subsurface Utility Locate

1. One Time Use SS needs approval to use again.
2. Include for project with following utility conditions:
    1. Culvert extensions near buried utilities
    2. Widening jobs with re grade ditches near buried utilities
    3. Underground storm sewer near buried utilities
3. Default quantity
    1. 7xxx-6001 = potholes outside the roadbed = 20
    2. 7xxx-6002 = potholes within the roadbed = 10

# Appendix

## Appendix A – Project Duration and Barricade Calculation

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

**CONTRACT DAY AND BARRICADE 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' and 'B'.**

| Designer Provided Information | |
|---|---|
| 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)<br>B = W / Wm = C / Cm = |

**AUTO CALCULATE FOR USE IN PS&E**

| | | | Standard | Calendar | 5 Day | 6 Day | 7 Day |
|---|---|---|---|---|---|---|---|
| W = | 340 | C = | 340 | 431 | 412 | 407 | 425 |
| | | B = | 21 | 15 | 21 | 17 | 15 |

**Notes**

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 calendards that include weather, etc. Contact Jesus Valdez @ DCO for primavera calendars.

Input the working days for the project (do not include weather, weekends, or holidays)

Calculations using W = 340 days

| | | | |
|---|---|---|---|
| **Standard Work Week** | Wm = | 16.90 | Standard Work Week does not need to account for impacts due to weather, weekends, or holidays. |
| | Cm = | 16.90 | |
| | C = W = | 340 | Contractor will not be charged a working day due these events. |
| **Barricades** | B = W / Wm = C / Cm = | 21 | |
| **Calendar Day** | Wm = | 24.00 | Calendar Day will charge the Contractor for every day of the week without regard to weather, weekends, or holidays. |
| | Cm = | 30.42 | |
| | C = Cm * ( W / Wm) = | 431 | |
| **Barricades** | B = W / Wm = C / Cm = | 15 | |
| **5 Day Work Week** | Wm = | 16.90 | 5 Day charges Mon - Fri regardless of weather. Holidays defined by the contract are the only days not charged. |
| **Contract Time Adjustment** | Cm = | 20.45 | |
| C = 20 days * (W / 16 days) | C = Cm * ( W / Wm) = | 412 | |
| **Barricades** | B = W / Wm = C / Cm = | 21 | |
| **6 Day Work Week** | Wm = | 20.40 | 6 Day charges Mon - Sat regardless of weather. Holidays defined by the contract are the only days not charged. |
| **Contract Time Adjustment** | Cm = | 24.40 | |
| C = 25 days * (W / 20 days) | C = Cm * ( W / Wm) = | 407 | |
| **Barricades** | B = W / Wm = C / Cm = | 17 | |
| **7 Day Work Week** | Wm = | 24.00 | 7 Day charges Mon - Sun regardless of weather. Holidays defined by the contract are the only days not charged. |
| **Contract Time Adjustment** | Cm = | 30.00 | |
| C = 30 days * (W / 24 days) | C = Cm * ( W / Wm) = | 425 | |
| **Barricades** | B = W / Wm = C / Cm = | 15 | |

## Appendix A-1 - Weather in 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 rainstorm. 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 Contract Duration

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 A-3 – Project Start Date

Below is the estimated start date for use in schedule development. This table can be found in ProjectWise @ 14 - AUS\Offices\Design\Standard Operating Procedures\Construction Management Plans

Estimated Construction Start & Delay Construction Start Dates

| Letting Month | Construction Begin* | 60 day delay | 90 day Delay | 120 day Delay | 150 day Delay | 180 day Delay |
|---|---|---|---|---|---|---|
| JAN | 1-Apr | 1-May | 1-Jun | 1-Jul | 1-Aug | 1-Sep |
| FEB | 1-May | 1-Jun | 1-Jul | 1-Aug | 1-Sep | 1-Oct |
| MAR | 1-Jun | 1-Jul | 1-Aug | 1-Sep | 1-Oct | 1-Nov |
| APR | 1-Jul | 1-Aug | 1-Sep | 1-Oct | 1-Nov | 1-Dec |
| MAY | 1-Aug | 1-Sep | 1-Oct | 1-Nov | 1-Dec | 1-Jan |
| JUN | 1-Sep | 1-Oct | 1-Nov | 2-Dec | 1-Jan | 1-Feb |
| JUL | 1-Oct | 1-Nov | 1-Dec | 1-Jan | 1-Feb | 1-Mar |
| AUG | 1-Nov | 1-Dec | 1-Jan | 1-Feb | 1-Mar | 1-Apr |
| SEP | 1-Dec | 1-Jan | 1-Feb | 1-Mar | 1-Apr | 1-May |
| OCT | 1-Jan | 1-Feb | 1-Mar | 1-Apr | 1-May | 1-Jun |
| NOV | 1-Feb | 1-Mar | 1-Apr | 1-May | 1-Jun | 1-Jul |
| DEC | 1-Mar | 1-Apr | 1-May | 1-Jun | 1-Jul | 1-Aug |

# Appendix B – Pavement

Please refer to the Pavement Design SOP and other support documents found in ProjectWise @ 14 - AUS\Offices\Construction\Designers Guide\Pavement Design\

1. Non-surface
    1. Flex base
        1. At least 4.0 in. of hot mix shall be placed on top of base if surface is hot mix
    2. Flex base prime
        1. Not considered part of the seal coat surface
        2. Type to use
            1. Use prime if > 4 in. hot mix is placed on top of the base
            2. Use inverted prime if <= 4 in. hot mix is placed on top of the base
            3. Use inverted prime if flex base exposed to traffic prior to place surface
        3. Prime
            1. MC 30, EC 30 or AEP @ 0.2 GAL/SY
        4. Inverted prime
            1. Asphalt
                1. RC-250 @ rate of 0.25 GAL/SY
            2. Aggregate
                1. Type D Grade 5 at a rate of 1CY/130SY
    3. Bond and under seal
        1. Refer to Pavement Section Guide in project wise 14 - AUS\Offices\Construction\Designers Guide\Pavement Design
        2. Use between all lifts and types of hot mix
            1. This includes between each lift of the same mix
        3. Do not use tack bid items. Use either bond or under seal.
    4. Type D
        1. All mix use 76 -22
    5. Level up
        1. < 3” use Type D or Type C
        2. > 3” use Type B
    6. Type B
        1. 64-22 for all mixes
        2. Minimum 3 in. thick
    7. Treated Subgrade
        1. Cement
            1. Default 26 LBS/SY @ 6 in. deep
            2. Requires a cement and treatment item
        2. Lime
            1. Default 36 LBS/SY @ 8 in. deep
            2. Requires a lime and treatment item
        3. Sulphate over 7000 ppm
            1. Default excavate 8 in. deep and replace using embankment Item
2. Surface
    1. Asphalt
        1. All surface mix shall use 76 -22 or better grade asphalt
    2. Aggregate
        1. SAC B is default
            1. SAC B for new hotmix under a seal coat surface
        2. SAC A per guidance map stored in Project Wise
            1. 14 - AUS\Offices\Construction\Designers Guide\Pavement Design
    3. Surface Mixture Type
        1. Select per guidance maps stored in Project Wise
            1. 14 - AUS\Offices\Construction\Designers Guide\Pavement Design
    4. SMA

1. Default 2 in. thick SMA-D
2. SAC A Only. No SAC B
3. Requires an under seal. Bonding course and tack not allowed.
4. SMA-F not allowed.

5. TOM
   1. Default 1 in. thick TOM-C 76 -22
   2. Min 2 in. of hot mix underneath is required.
   3. For overlay requires 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.
   5. See Appendix B-5 for required locations of PFC due to environmental reasons.
6. Type D
   1. Default thickness is 1.5 in.
7. PFC
   1. Default 1.5 in. thick PFC-C 76 -22
   2. SAC A Only. No SAC B
   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 and tack 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.
   8. See Appendix B-5 for required locations of PFC due to environmental reasons.
8. 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 system. AUS uses a specific bid item for all seal coats.
   7. Aggregate
      1. Only Grade 4
      2. Default
         1. Single Course - Grade 4
         2. Two Course - Grade 4 topped w/Grade 4

3. Notes
   1. See Master General Notes "Basis of Estimate" for rates to calculate quantities
   2. AADT and % Trucks can be found in the "Statewide Planning" link https://www.txdot.gov/apps/statewide_mapping/StatewidePlanningMap.html

# Appendix B-1 – Pavement Section Guide and Bid Items

Please refer to ProjectWise for the Pavement Section Guide and Pavement Section Guide Bid Items.
@ 14 - AUS\Offices\Construction\Designers Guide\Pavement Design\
Below file is latest when designers guide was published. Check Project Wise for updated pavement section guide and bid item list.

| Use of other bid items should be approved by the AE, DCO or Lab. | | | | Legend | Requires the use of multiple items to perform the work<br>Surface mixtures see Surface Mixture Map |
|---|---|---|---|---|---|
| **Spec** | **Bid Codes** | **Description** | **Units** | **Purpose** | **Notes** |
| 132 | 132 6003-7003 | EMBANKMENT (FINAL)(ORD COMP)(TY B) | CY | Refer to AUS Designers Guide. | No TY C or DENS CONT unless approved by Lab or AE. |
| 247 | 0247 6366-7179 | FL BS (CMP IN PLC)(TY A GR 5)(FNAL POS) | CY | Default Item | |
| | 0247 6392-7191 | FL BS (CMP IN PLC)(TY D GR 5)(FNAL POS) | CY | Allow use of recycled concrete. | Eastern Travis and Bastrop AO Item. There is a recycled concrete plant in eastern Travis Cnty |
| 250/5001 | 5001 6002/250 7002 | GEOGRID BASE REINFORCEMENT (TY II) | SY | | |
| 260 | 0260 6073-7007 | LIME TRT (SUBGRADE)(8") | SY | Used for treatment of subgrade. | Requires use of both items. See AUS Designers Guide Appendix B for default rate. |
| | 0260 6043-7005 | LIME (HYD, COM OR QK)(SLURRY) | TON | | |
| 275 | 0275 6019-7003 | CEMENT TREAT (SUBGRADE)(6") | SY | Used for treatment of subgrade. | Requires use of both items. See AUS Designers Guide Appendix B for default rate. |
| | 0275 6001-7001 | CEMENT | TON | | |
| | 0275 6014-7007 | CEMENT TREAT (MX EXST MTL & NW BS)(8") | SY | Used for treatment of reworked base. | Requires use of all 4 items. Typically includes delivery item for new base to dress up existing material to final elevation. If rework existing base, select appropriate item 251. |
| | 0275 6001-7001 | CEMENT | TON | | |
| | 0247 6124-7199 | FL BS (RDWY DEL)(TY A GR 4) | TON | | |
| | 0251 XXXX | REWORK BS MTL (TY X) | | | |
| | 0275 6003-7010 | CEMENT TREAT (NEW MATL)(6") | SY | Use for treatment of new base on rural roads. | Requires use of all 3 items. Not intended for under CRCP. Depth of treatment may vary based on design. |
| | 0275 6001-7001 | CEMENT | TON | | |
| | 0247 6044-7178 | FL BS (CMP IN PLC)(TY A GR 4)(FNAL POS) | CY | | |
| 276 | 0276 6310-7100 | CM TRT(PT MX)(CL N)(TY A)(GR 5)(FN POS) | CY | Under CRCP or urban area CTB. | Use under CRCP bond breaker or for cement treated base. |
| 310 | 0310 6001-7013 | PRIME COAT (MC-30 OR AE-P) | GAL | Flex base Prime | Use on flex base getting more than 4" of hotmix. Does not stick to cement treated base. |
| 316 | 0316 6029-7016 | ASPH (RC 250) | GAL | Inverted Prime | Requires use of both items. Use on flex base getting only seal coat, when base exposed to traffic, or if base is cement treated. Not used under CRCP. |
| | 0316 6467-7252 | AGGR (TY-D GR5) | CY | | |
| | 0316 6419-7071 | ASPH (AC-15P, AC-20-5TR OR AC-20XP) | GAL | See Surface Mixture Map | For all ADT. Requires use of both items. Asph Tier system not used in AUS district. |
| | 0316 6240-7224 | AGGR(TY-PD GR-4 SAC-B) | CY | | |
| | 0316 6038-7014 | ASPH (A-R TYPE II) | TON | Between Concrete & Hotmix | Use as the bond/tack coat when overlay conc pavement. |
| 342/3079 | 3079 6011/342 7001 | PFC-C PG76-22 SAC-A | TON | See Surface Mixture Map | Bonding or tack not allowed, requires underseal. |
| 346/3080 | 3080 6030 | STONE-MTRX-ASPH SMA-D SAC-A HPG | TON | See Surface Mixture Map | Bond or tack not allowed. Requires underseal. No SAC B. |
| | 346 7009 | STONE-MTRX-ASPH SMA-D SAC-A PG76-22 | TON | See Surface Mixture Map | Bond or tack not allowed. Requires underseal. No SAC B. |
| 347/3081 | 3081 6007/347 7001 | TOM-C PG 76-22 SAC-A | TON | See Surface Mixture Map | Tack not allowed, requires bond or underseal. |
| | 3081 6008/347 7002 | TOM-C PG 76-22 SAC-B | TON | See Surface Mixture Map | Tack not allowed, requires bond or underseal. |

| Use of other bid items should be approved by the AE, DCO or Lab. | | | | Legend | Requires the use of multiple items to perform the work<br>Surface mixtures see Surface Mixture Map |
|---|---|---|---|---|---|
| **Spec** | **Bid Codes** | **Description** | **Units** | **Purpose** | **Notes** |
| 341/3076 | 3076 6050/341 7058 | D-GR HMA TY-D SAC-B PG76-22 | TON | See Surface Mixture Map | Greater than 5,000 tons. If need SAC A use TOM |
| | 3076 6070/341 7063 | D-GR HMA TY-D SAC-B PG76-22 (EXEMPT) | TON | See Surface Mixture Map | Less than 5,000 tons. If need SAC A use TOM |
| | 3076 6048/341 7056 | D-GR HMA TY-D PG76-22 | TON | Non-surface | Greater than 5,000 tons. Max depth 1.5" |
| | 3076 6072/341 7065 | D-GR HMA TY-D PG76-22 (EXEMPT) | TON | Non-surface | Less than 5,000 tons. Max depth 1.5". |
| | 3076 6071/341 7064 | D-GR HMA TY-D PG64-22 (EXEMPT) | TON | Bond breaker | Use under CRCP |
| | 3076 6031/341 7030 | D-GR HMA TY-C PG76-22 | TON | Non-surface | Structural overlay greather than 1.5" to 4" |
| | 3076 6001/341 7001 | D-GR HMA TY-B PG64-22 | TON | Non-surface | Greater than 5,000 tons. |
| | 3076 6003/341 7003 | D-GR HMA TY-B PG64-22 (EXEMPT) | TON | Non-surface | Less than 5,000 tons, width less than 6', or blade lay. |
| | 3076 6051/341 7059 | D-GR HMA TY-D PG76-22 (LEVEL-UP) | TON | Level up | Less than 3" |
| | 3076 6004/341 7004 | D-GR HMA TY-B PG76-22 (LEVEL-UP) | TON | Level up | Greater than or equal to 3". Requires use of 3076 6051 for surface of level up. |
| 351 | 0351 6002-7005 | FLEXIBLE PAVEMENT STRUCTURE REPAIR (6") | SY | ADT under 100,000 | Further evaluation of failure type and existing pavement section should be used for depths other than 6". Contact district lab for approval for depth other than 6". |
| | 0351 6004-7007 | FLEXIBLE PAVEMENT STRUCTURE REPAIR (8") | SY | use when directed by pave design | |
| | 0651 6006-7009 | FLEXIBLE PAVEMENT STRUCTURE REPAIR (10") | SY | use when directed by pave design | |
| | 0351 6008-7011 | FLEXIBLE PAVEMENT STRUCTURE REPAIR (12") | SY | use when directed by pave design | |
| 354 | 0354 6188-7047 | PLANE ASPH CONC PAV (MICRO-MLLING)(1") | SY | Milling for TOM | |
| | 0354 6219-7049 | PLANE ASPH CONC PAV (0"-1" EDGE MILL) | SY | Milling adjacent to curb or edge | When milling a taper at pavement edge or curb/gutter |
| | 0354 6139 | PLANE ASPH CONC PAV (1.5"-3") | SY | Milling for PFC | Allows milling extra depth to avoid leaving a scab layer |
| | 0354 7051 | PLANE ASPH CONC PAV (2") | SY | Milling for PFC | Temp item until submit request for new item code. |
| | 0354 6157 | PLANE ASPH CONC PAV (2"-3") | SY | Milling for SMA | Allows milling extra depth to avoid leaving a scab layer |
| | 0354 7051 | PLANE ASPH CONC PAV (2") | SY | Milling for SMA | Temp item until submit request for new item code. |
| 401 | 0401 6002-7002 | FLOWABLE FILL (EMBANKMENT) | CY | For narrow widening 6' or less | |
| 3094 | 3094 6001/30xx 70xx | COMPOSITE GEOGRID FOR ASPHALT OVERLAY | SY | | Requires use of both items. |
| | 3094 6006/30xx 70xx | TACK COAT | GAL | | |
| 3085 | 3085 6001/30xx 7001 | UNDERSEAL COURSE | GAL | Under PFC. | Use when cracks in existing surface deeper than 1" or wider than 1/4" |
| 3084 | 3084 6001/30xx 7001 | BONDING COURSE | GAL | Use in all layers not getting PFC. | Use instead of tack. |
| 8013 | | HMCL | | | |

# Appendix B-2 - Flexible Pavement Design Approval Process

District Pavement Engineers (DPE)
James.Phillips@txdot.gov and Evan.Russell@txdot.gov

Reference Documents
1. Project Wise in folder 14 – AUS\Offices\Construction\Designers Guide\Pavement Design
    1. Austin District Pavement Design Standard Operating Procedures
    2. Pavement design example reports
    3. Pavement bid codes.
    4. Pavement section guide

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

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

Submission Process
2. Pavement Concept
        1. Required for all projects.
        2. Submit ASAP to the Area Office (AO) for concurrence.
            1. Copy the Maintenance Section Supervisor
            2. If required, request maintenance section provide level up and base repair quantity and depth
        3. Once receive AO concurrence, submit to DPE
            1. Email subject: prelim pave CCCC-SS-JJJ roadway
            2. Copy the AO on the email to the DPE.
3. Pavement Design
        1. Required for all projects except overlay.
        2. Required for all projects with a pavement design greater than 2 years old.
        3. Submit pavement design or request for design prior to 30%
        4. Email subject: pave design CCCC-SS-JJJ roadway
        5. TxDOT design
                1. send request to DPE to request DPE prepare a pavement design.
        6. Consult Prepared Design

1. Follow the latest version of the District's Pavement Design SOP, Department's Pavement Manual, example reports, and this guide.
2. Consultant submit a pavement concept to TxDOT PM for AO and DPE approval
3. After geotechnical information is available, schedule a conference call with the DPE to discuss material selection and rehabilitation options.
4. Final pavement report must be reviewed by DPE.
5. Consultant design send Project Wise link to DPE via email when document is ready for review.

Pavement Concept

1. Contents
    1. Project Description
        1. Written description of project
    2. Location
        1. Written description of begin and end points.
        2. screen shot pasted in email of google earth.
    3. Pavement Design Required
        1. Yes or No? If yes, TxDOT or consultant prepared.
    4. Preliminary data required?
        1. If yes, see above section for preliminary data.
    5. Traffic Data
        1. AADT and % Trucks
        2. Info can be found in the "Statewide Planning" link https://www.txdot.gov/apps/statewide_mapping/StatewidePlanningMap.html
    6. Existing Typical Section
        1. Provide sketch of existing, screen shot of old plans, or written description of existing layers and thickness of each layer.
    7. Proposed Typical section.
        1. Provide sketch.
        2. Proposed material of each layer
            1. Pay Item not required for concept, unless overlay only.
            2. Thickness not required for concept, unless overlay only
        3. Base Repair
            1. Yes or No? If yes, how deep of a repair?
        4. Milling
            1. Yes or No? If yes, how deep, entire roadway, etc.?
        5. Level up
            1. Yes or No?
        6. Seal Coat
            1. Yes or No? If yes, provide oil and rock type.

Pavement Design

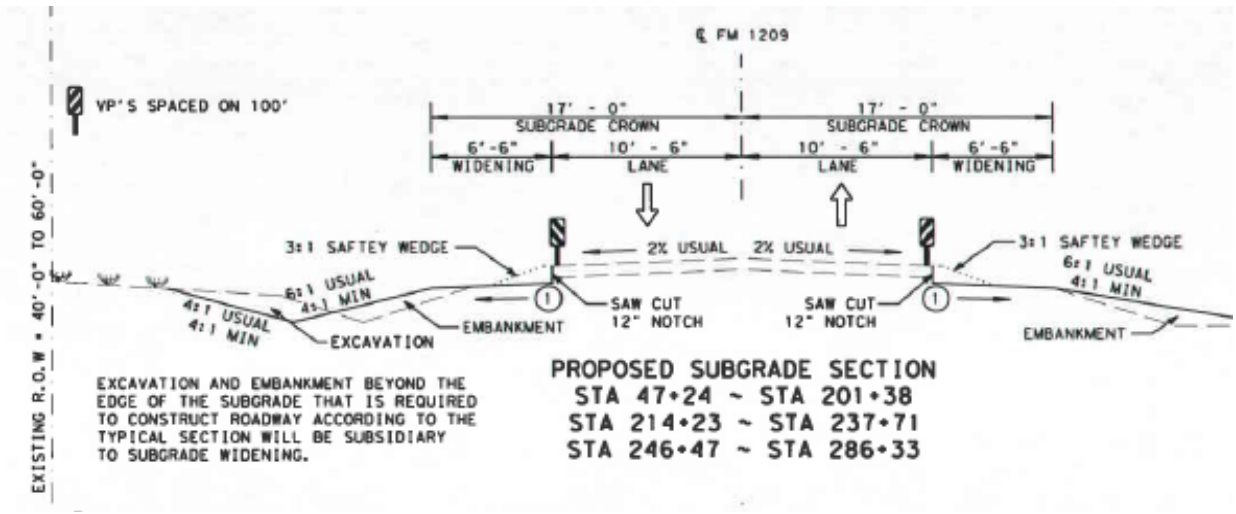
1. Contents
    1. Examples: IH 35 @ Parmer (0015-13-396) & SH 45 Grand Ave Ramps(0015-10-063)
        1. Examples in Project Wise @ 14 - AUS\Offices\Construction\Designers Guide\Designers Guide Referenced Plans\
    2. Table of Contents
        1. Project Description
        2. Location Map
        3. Traffic Data
            1. AADT, AADT future, ESALs, % Trucks, ATHWLD
        4. Soil Conditions
            1. Laboratory soil report or tests, Ground Penetrating Radar (GPR), Falling Weight Deflectometer (FWD), Dynamic Cone Penetrometer (DCP), pavement cores, Atterberg limits.
        5. Typical Sections

1. Existing
2. Proposed (include bid Items, surface aggregate, and thickness)

6. Pavement Concept
    1. Copy of AO concurrence
7. Appendices
    1. A - Traffic Data Report
    2. B - FPS Reports

3. Review Process
    1. Email confirmation of receipt will be provided.
    2. Allow 10 business days for review.
    3. The designer will be notified if more information is needed or if testing (GPR, FWD, etc.) will be requested.
    4. If accepted, the designer will be notified via email.
    5. 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
    6. If resubmission, the designer will be notified with comments

## Appendix B-3 - Typical Section Subgrade Widening Detail




## Appendix B-4 - Typical Section Narrow Widening

Please refer to the Narrow Road Surface slide in the Pavement Section Guide found in ProjectWise @ 14 - AUS\Offices\Construction\Designers Guide\Pavement Design\

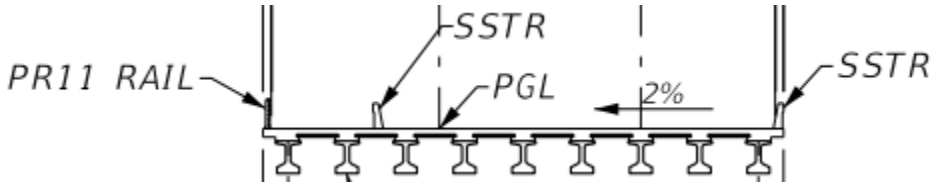
## Appendix B-5 - PFC Required for WPAP

The below table is a summary of locations where PFC was placed as required by the TCEQ permit issued as part of the water pollution abatement plan (WPAP). These areas are required to have PFC as a surface material.

| Roadway | Begin | End | CSJ | Distance (Miles) | TCEQ # |
|---|---|---|---|---|---|
| SH 71 | Serene Hills | RM 3238 | 0700-03-122,123 | 2.75 | 11-13050801 |
| SH 71 | Uplands Ridge Drive | Arroyo Canyon | 0700-03-105 | 1.50 | 11-08062401, 11-08062401A, 11-08062401B |
| SH 71 | Arroyo Canyon | SW Parkway | 0700-03-114 | 0.75 | 11-11021002 |
| SH 71 | SW Parkway | Scenic Brook | 0700-03-125,126,127 | 3.50 | 11-13050801 |
| RM 2325 | Fisher Store Rd | Carney Lane | 0285-02-012 | 2.75 | 11-10110901 |
| RM 1626 | Bliss Spillar | RM 967 | 1539-01-005 | 3.25 | 11-11070702 |
| RM 1626 | RM 967 | RM 2770 | 1539-01-013 | 3.25 | 11-13060301 |
| RM 967 | RM 1626 | Canyon Wren | 1776-01-032 | 0.50 | 11-14021001 |
| US 290 | RM 1826 | Convict Hill | 0113-08-075 | 1.00 | 11-12051501 |

## Appendix C – Typical Section Pedestrian Rail on a Bridge

The bridge rail next to the PR11 shall be a combo rail in accordance with Item 450 guidance.
Below example shows SSTR next to PR11 but should be C221/C223 per Item 450 guidance.

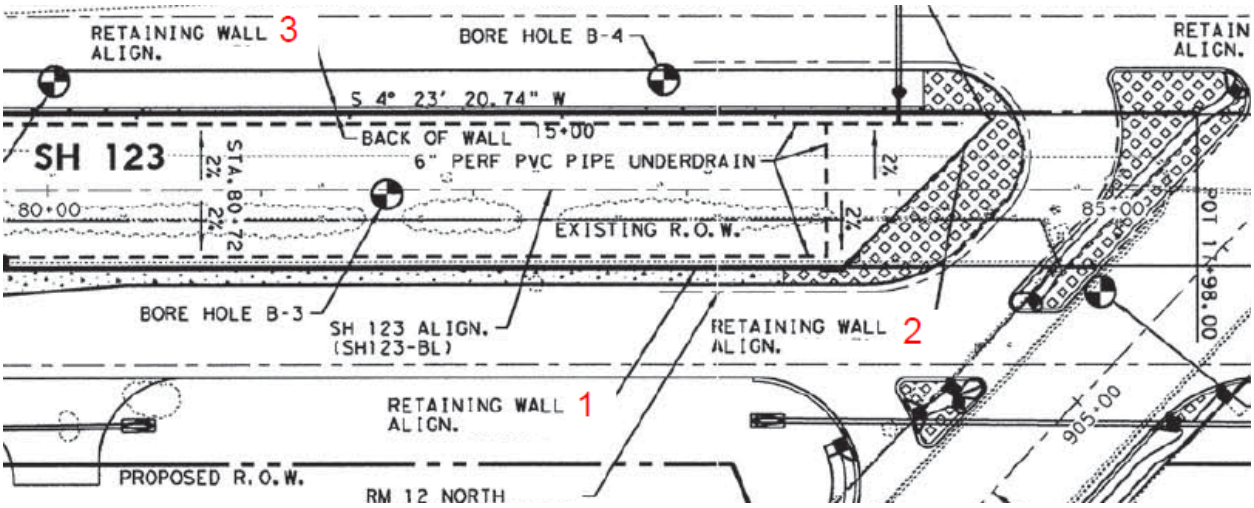



Note: The original Appendix C Typical Subgrade Widening Detail was moved to Appendix B-3.

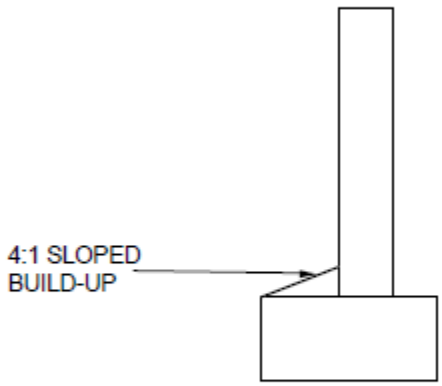
## Appendix D - Not Used

This appendix for Typical Subgrade Widening Detail for Narrow Urban Locations was moved to Appendix B-4.

## Appendix E - Retaining Wall Alignment Names




## Appendix F – Sloped Abutment Treatment




**ABUTMENT SECTION (TYP)**

## Appendix G - IH 35 Mobility Projects

Due to size of this appendix, this information has been placed in a separate document titled “AUS Designers Guide Freeway Supplemental.” 14 - AUS\Offices\Construction\Designers Guide

## Appendix H – Aquatic Salamander

1. Is your project located within the aquatic salamander habitat?
    1. If yes, CHECK WITH ENV
2. Aquatic Salamander Habitat Map
    1. in development
3. Plans
    1. Include the salamander habitat map (in development).
    2. Plan SW3P sheets need to identify any know salamander locations.
    3. Plan SW3P sheets need to identify any sensitive water features.
    4. Plan sheets need to provide the elevation of the ordinary high-water mark.
    5. Show installation of Amphibian and Reptile Exclusion Fence (AREF) around known salamander locations.
    6. Include the AREF detail and pay Item 5003-7001/7002 for perimeter fence.
4. General notes
    1. Add the following notes to Item 7.

Item 7 – Aquatic Salamander
This project is subject to the following restrictions/requirements due to the presence of the Aquatic Salamanders. The limits of the salamanders are for the entire project limits unless stations are provided in the following: ??+?? to ??+??.

Salamander 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 federally permitted TxDOT representative. Provide 72-hour notice to schedule the training

In addition to normal schedule the TxDOT staff will complete a SW3P inspection using form 2118 after each 0.25-inch rain event. Contractor shall complete a separate Contractor Daily Environmental Monitoring Log using form 2801 every day for the area within 1000 ft. of a known salamander. The completed form 2801 shall be emailed weekly to the TxDOT staff.

All spills, of any amount, shall be reported to TxDOT. All parked equipment and refuelling shall remain 1000 ft. from a waterway and a known salamander location.

No on or off right of way PSLs for material storage, borrow sites, water sources, etc. will be allowed within the salamander limits unless approved by TxDOT. Any material temporarily staged within the ROW shall be stored off the ground and enclosed with silt fence as directed. If approved, a project PSL shall be enclosed with silt fence. No PSL may be placed within 1000 ft. of a known salamander location. No storage of chemicals or fuels in quantities greater than 55 gallons. Chemicals and fuels in quantities greater than 25 gallons shall have a secondary containment system.

Install Amphibian and Reptile Exclusion Fence (AREF) around know salamander locations. AREF shall be paid using construction perimeter fence bid Item.

Install a cloth catch net for any elevated concrete work near a waterway.

If the total rainfall in a 48-hour period is 2 in. or greater, the Contractor must suspend work for 24-hour period. Time suspension will not begin until the rain event has ended, and time will not be charged during the 24-hour suspension. Time charges during the rain event will be in accordance with the contract. The suspension will be non-compensable.

# Appendix I - Void Mitigation Guide

1. Plan Sheets.
    1. Austin District Void Mitigation Details VMD-18(AUS)
    2. dgn files found in project wise @ 14 - AUS_Standards\District Design Standards\Approved
2. Pay Items and Default Quantities

| | Item | Quantity |
|---|---|---|
| 1. | 0506 7035 SANDBAGS FOR EROSION CONTROL | 20 |
| 2. | 0506 7044 BIODEG EROSN CONT LOGS (INSTL) (12”) | 20 |
| 3. | 0506 7045 BIODEG EROSN CONT LOGS (REMOVE) | 20 |
| 4. | 0420 7002 CL A CONC (MISC) | 20 |
| 5. | 0481 7027 PIPE (PVC) (SCH 80) (6 IN) | 20 |
| 6. | 0432 7031 RIPRAP (STONE COMMON) (DRY) (12 IN) | 20 |

Drill shaft cores are required per VMD-18(AUS) standard, but a pay item is not required per Standard Specification Item 416.5.2.

3. 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

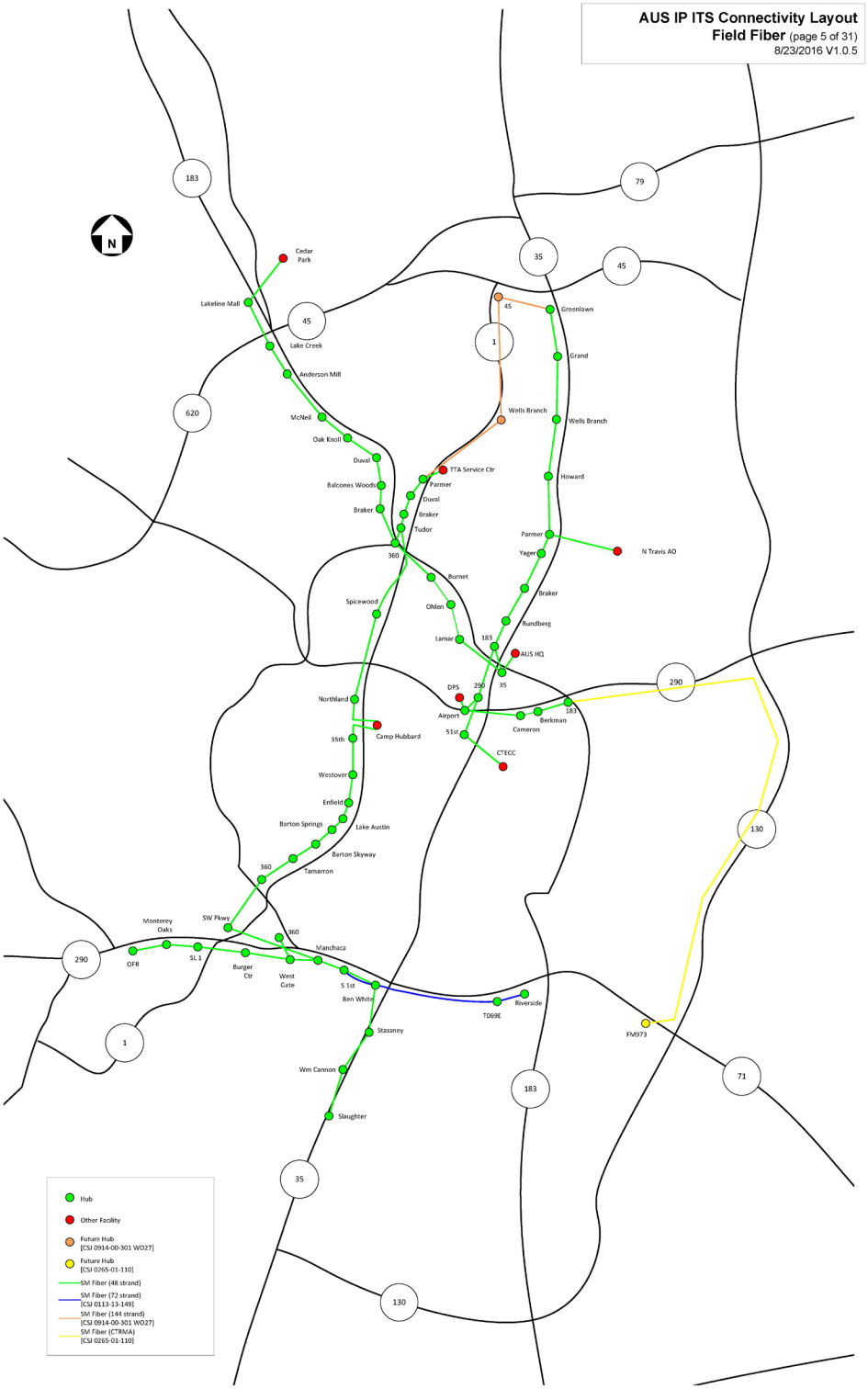
| Roadway | Limits | Allowable Closure Time |
|---|---|---|
| IH 35 | All (1 lane closed) | 9 P to 5 A |
| IH 35 | All (2 lanes closed, see allowable work below) | 9 P to 5 A |
| IH 35 | All (2 lanes closed, all work) | 11 P to 5 A |
| IH 35 | All (Full Closure, see allowable work below) | 11 P to 4 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 K - ITS Location Map



# Appendix L – NOT Used

# Appendix M - Milestones and Project Liquidated Damages

1. Contact Jesus Valdez or Ben Engelhardt for assistance.
2. Complete Form 2699
    1. This form identifies situations that could require an incentive or additional project specific liquidated damages (APSLD).
3. APSLD
    1. Additional Project-Specific Liquidated Damages (APSLD) Handbook (txdot.gov)
    2. Typically use 16.7% of the calculated RUC
    3. There is maximum APSLD based on engineer's estimate. The maximum is listed in the master general notes.
4. Estimate
    1. Include incentive in Engineers estimate.
    2. Incentive $ is not accounted for as a bid Item (such as force account)
    3. Include the amount in the estimate as a cost
    4. Cost accounted for and charged to the district budget during construction
5. General Notes
    1. Master general notes includes milestone and substantial complete template in Item 8
6. RUC Calculation
    1. Daily rate for the incentive is 16.7% of the daily RUC
    2. AUS has a milestone calculator located in Project Wise
        1. TXDOT4\Documents\14 - AUS\Offices\Construction\Designers Guide\
    3. Construction Division has RUC calculator located on the web
        1. https://www.txdot.gov/inside-txdot/division/construction/road-user-costs.html
7. Maximum $ incentive amount
    1. Total amount of all incentives is 3.4% of the construction estimate.
        1. This is based on TTI evaluation of Missouri DOT projects
    2. FHWA likes to max total of all incentives to 5% of the contract value
8. 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 - 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 in. | All | 1 |
| New Construction | Flexible w/ HMA < 1.5 in. | All | 2 |
| Rehabilitation | Rigid | All | 2 |
| Rehabilitation | Flexible w/ HMA => 1.5 in. | All | 1 |
| Rehabilitation | Flexible w/ HMA < 1.5 in. | All | 2 |
| Overlay | HMA => 1.5 in. | 2 lane | Default |
| Overlay | HMA => 1.5 in. | > 2 lane < 90,000 ADT | 2 |
| Overlay | HMA => 1.5 in. | > 90,000 ADT | 1 |
| Overlay | HMA => 1.5 in.+ smoothness | > 90,000 ADT | 1 |
| Overlay | HMA => 1.5 in.+ smoothness | < 90,000 ADT | 2 |
| Overlay | HMA < 1.5 in. | > 90,000 ADT | 2 |
| Overlay | HMA < 1.5 in. | < 90,000 ADT | Default |
| Widening** | HMA => 1.5 in. | 2 lane | Default |
| Widening** | HMA => 1.5 in. | > 2 lane < 90,000 ADT | 2 |
| Widening** | HMA => 1.5 in. | > 90,000 ADT | 1 |
| Widening** | HMA => 1.5 in.+ smoothness | > 90,000 ADT | 1 |
| Widening** | HMA => 1.5 in.+ smoothness | < 90,000 ADT | 2 |
| Widening** | HMA < 1.5 in. | > 90,000 ADT | 2 |
| Widening** | HMA < 1.5 in. | < 90,000 ADT | Default |

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

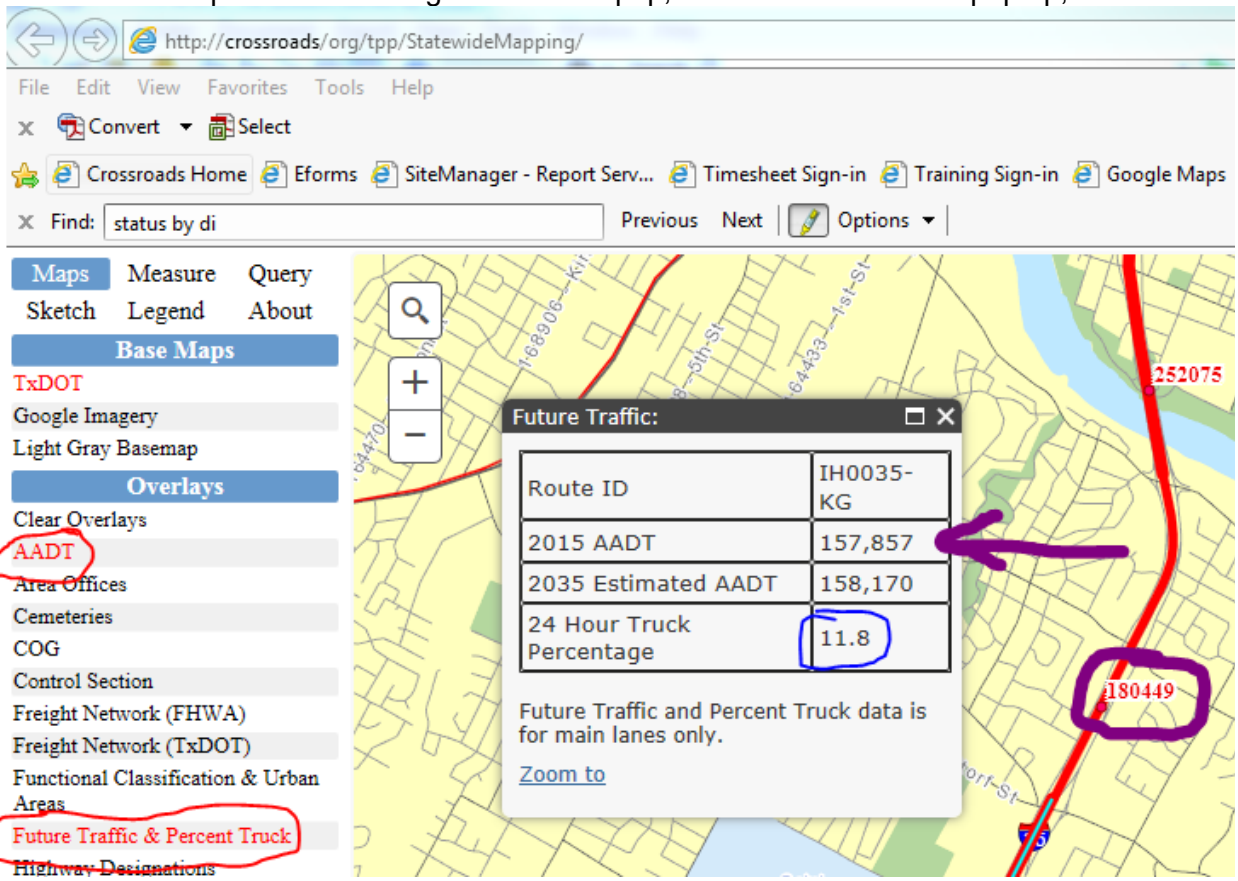
Smoothness opportunity definition: A smoothness opportunity is defined as a ~~continuous~~ level-up regardless of the thickness, a specified lift of 1.0 inches or more of asphaltic concrete pavement, in place recycling, and grading for base courses. ~~Spot level-ups,~~ milling operations, and seal coats, 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.

~~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 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 & SP008-045 (045 replaces 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. https://www.txdot.gov/apps/statewide_mapping/StatewidePlanningMap.html

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.



# Appendix P - Houston Toad

1. Is your project located within the Houston Toad habitat?
    1. If yes, CHECK WITH ENV
2. Houston Toad Habitat Map
    1. 14 - AUS_Standards\District Design Standards\Non-Standard Details\
3. If construction will begin or occur between Jan 1-July 1 ENV will need to provide a toad monitor.
4. Plans should minimize construction in drainage areas during the Houston toad breeding period January l -July 1.
5. Plans
    1. Include the toad habitat map.
    2. Show installation of Amphibian and Reptile Exclusion Fence (AREF) around known toad locations.
    3. Include the AREF detail and pay Item 5003-7001/7002 for perimeter fence.
6. 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 Amphibian and Reptile Exclusion Fence(AREF) to ensure full site containment and permit compliance must be submitted to TxDOT 96 hours prior to begin installation. AREF shall be paid using construction perimeter fence bid Item.

Install (AREF) 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 AREF. 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.

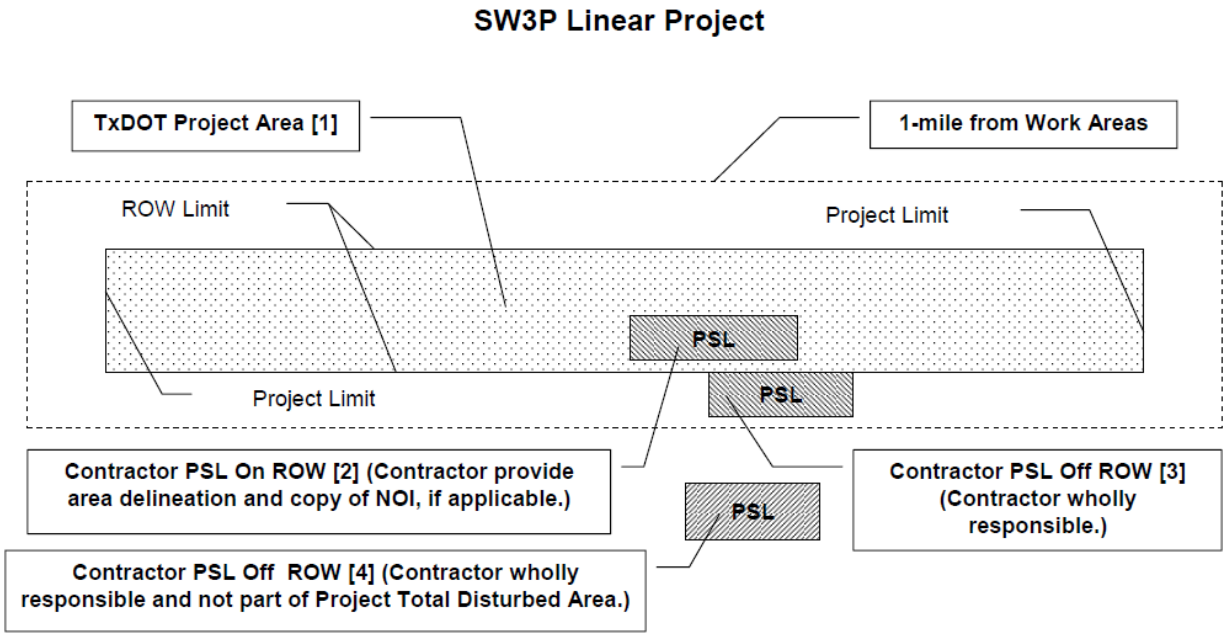
No on or off right of way PSLs for material storage, equipment staging, borrow sites, water sources, etc. will be allowed within the toad habitat boundaries. All materials shall store off the ground and surrounded with AREF. A project PSL shall be enclosed with AREF.

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.




**Total Disturbed Area:**

**All TxDOT Project Locations On ROW Disturbed Area [1] = _____**
**+ All Contractor On ROW PSLs Disturbed Area [2] = _____**
**+ All Contractor Off ROW PSLs Disturbed Area (within 1-mile) [3] = _____**

---

**Project Total Disturbed Area [1] + [2] + [3] =**

# 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
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 617-7001 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 Gisel.Carrasco@TxDOT.gov
        2. Note City of Austin may not sign the agreement. Check with District Maintenance on status of Austin MMA agreement
    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

## 03/22/18

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

## 07/18/18

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

## 11/02/20

1. General Plan Sheet Preparation
    1. Preliminary Plans Posted Online – updated to have 60% and 90% sent to DCO to post
    2. Typical Sections – avoid callout of asphalt PG unless multiple PG of same Type of hotmix
2. Project Specific Guide
    1. Project Schedule and Duration – updated this section to add more guidance
    2. Lead/Asbestos – update to add notes to plan sheets and EPIC
3. Item by Item
    1. Item 168 – added equation to calculate MG for watering quantity
    2. Item 169 – added info for channel liner bid Items
    3. Item 275 – added default pay Items
    4. Item 432 – added default stone riprap Items for culvert outfalls
    5. Item 614 – revised high mast fixture bid Items from 6156 to 614
    6. Item 681 – Require plans include illumination at temporary signals
    7. Item 6185 – added reference to TMA quantity calculator
    8. Item 6412 – added guidance for portable illumination
    9. Item 7251 – added guidance for subsurface utility locate
4. Appendix
    1. B – require 76 -22 and SAC B for new hotmix under a seal coat surface
    2. H – inserted guidance for projects with salamanders

## 03/04/21

1. General Plan Sheet Preparation
    1.
2. Project Specific Guide
    1. Stage Gate Checklist – added guide for jobs that do not require stage gate
    2. Utility Management Plan - added this section to address issues related to this subject
    3. Railroad – added this section to address issues related to this subject
    4. Off System and Small Bridges – added notes about TCP, schedule, and milestones
3. Item by Item
    1. Item 260/275 – updated to have minimum width of treatment
    2. Item 276 – updated the default bid code
    3. Item 360 – updated the default bid Items and reference new state standard
    4. Item 420 – added abutment slope treatment

5. Item 668 – added guide for route marker shields and contrast stripe
6. Item 677 – added bid items for contrast stripe removal
7. Item 4027 – added guidance on when to use

4. Appendix
    1. B – complete revision to all data
    2. C – moved to B-3
    3. D – moved to B-4
    4. F – added abutment slope treatment

## 05/25/21

1. General Plan Sheet Preparation
    1. Typical Sections – added information about 24 in. separated center stripe, was in Item 666
2. Project Specific Guide
    1. N/A
3. Item by Item
    1. Item 450 – updated guidance
    2. Item 506 – updated guidance to include a quantity of silt fence, RFD, and logs in all jobs
    3. Item 510 – added guidance for one way traffic control
    4. Item 5048 – added guidance for a floating turbidity barrier in waterways
4. Appendix
    1. B1 – updated list of pavements bid items

## 12/22/21

1. General Plan Sheet Preparation
    1. N/A
2. Project Schedule and Duration Guide
    1. Working Day Determination – added this section to reference appendix A
    2. Milestones and Project Liquidated Damages – added this section to reference appendix M
3. Project Specific Guide
    1. Overlay / Seal Coat Projects – updated directions for Item 354
    2. Off System and Small Bridge Projects – added typical section for dirt roads
    3. Culvert Widen, Install, Replace – added default items to remove and install fence at ROW
4. Item by Item
    1. Force Account – added default amounts
    2. Item 104 – updated direction on paying for mow strip removal
    3. Item 168 – updated multiplier in formula
    4. Item 354 – updated to include direction on new variable depth milling item for inlay/overlay
    5. Item 432 – adjusted default rock riprap sizes
    6. Item 479 – added info for capping existing inlets and manholes, no longer use SAT dist detail
    7. Item 560 – added default bid items for mail boxes
    8. Item 613/614 – edit to use 6310 instead of 613/614
    9. Item 618 – added default sch 40 pvc and default pipe sizes
    10. Item 662 – added requirement for work zone profile pavement markings
    11. Item 672 – removed reference to 40’ spacing. Follow state standards

12. Item 6016 – removed bid item for concrete encasement
13. Item 6302 – add note to include the state standards
14. Item 6307 – added item for temporary speed monitor system
15. Item 6309 – added item for equipment alert system
16. Item 6310 – added to replace 613 and 614

5. Appendix
    1. A – update the Wm and Cm days per month for each time charge method
    2. I – update to state that pay item for cores is not required
    3. M – update to address additional project specific liquidated damages

## 01/27/22

1. General Plan Sheet Preparation
    1. N/A
2. Project Specific Guide
    1. N/A
3. Item by Item
    1. Item 512 – revised barrier items to allow the use of steel barrier as an option with concrete
    2. Item 545 – included bid items and the default standards to provide cushion consistency
4. Appendix
    1. B-1 – updated the bid item list to reflect new TOM, SMA and PFC special spec bid items

## 07/29/22

1. Project Development
    1. Austin District Project Development Manual – added reference to project development manual
2. General Plan Sheet Preparation
    1. Added website link to AUS standards
3. Project Specific Guide
    1. Water Quality Ponds – added additional information
4. Item by Item
    1. Item 464 – restriction added on use of arch and elliptical pipes DES 8 or larger
    2. Item 543 – added note related to cable material delayed delivery
5. Appendix
    1. A-3 – added a table that contains work start date based on letting and delayed start duration

## 08/18/22

1. Project Development
    1. N/A
2. General Plan Sheet Preparation
    1. Standards – added location of AUS non-standard details that are used in AUS district
3. Project Specific Guide
    1. N/A
4. Item by Item
    1. Item 662 – added info about profile markings in work zone

5. Appendix
    1. N/A

## 12/15/22

1. Project Development
    1. N/A
2. General Plan Sheet Preparation
    1. N/A
3. Project Specific Guide
    1. N/A
4. Item by Item
    1. Force Account – updated RR daily rate. removed crash cushion item and replaced with 3rd party damage item
    2. Item 438 – updated default bid items and reference to district joint detail
    3. Item 450 – changed rail type for direct connectors to a taller rail
    4. Item 454 – updated default bid items and reference to district joint detail
    5. Item 510 – added reference to DADs for driveways
    6. Item 512 – added guidance for low profile T barrier for 45 MPH or greater with driveways
    7. Item 531 – added guidance for temporary sidewalk
    8. Item 533 – adjusted guidance for milled rumble strip, district no longer using
    9. Item 666 – adjusted guidance for profile markings
    10. Item 6056 – added guidance for rumble strip for seal coat surface
    11. Item 6469 – added guidance for full color DMS
5. Appendix
    1. N/A

## 02/17/23

1. Pre-Bid Contact and Approver
    1. Added directions to complete pre bid contact and approver in TxDOT Connect
2. General Plan Sheet Preparation
    1. N/A
3. Project Specific Guide
    1. Computation of Contract Time – revised duration to 24 months when to use standard vs 5 day
    2. Delays Start Special Provision – added this guide to assist with requesting approval for SP
4. Item by Item
    1. Item 618 – do not use SCH 80
    2. Item 620 – use insulated conductors for all wires
    3. Item 666 – added note that all profile markings shall be 90 mils
    4. Item 666 – added note that profile and item 6056 will be used together
    5. Item 6028 – added note to not use this item, use full color DMS boards
    6. Item 6056 - added note that profile and item 6056 will be used together
5. Appendix
    1. N/A

## 07/05/23

1. Project Development
    1. N/A
2. Pre-Bid Contact and Approver
    1. N/A
3. General Plan Sheet Preparation
    1. N/A
4. Project Specific Guide
    1. Utility Construction Management Plan – updated
5. Item by Item
    1. Item 132 – added default bid item to use for unknow work by provide a token quantity of material
    2. Item 450 – added info about center medians and edge of roadway and updated railroad rail
    3. Item 467 – added link to SET guide and require aprons for all SET types
    4. Item 512 – added guidance for low profile T barrier for 45 MPH or greater with driveways
    5. Item 514 – added item 514 to the guide for permanent barrier in center median
    6. Item 543 – added default bid items to use TL-4 and not TL-3
    7. Item 543 – added guide on where to place cable barrier and reference to design manual
    8. Item 610 – added language to use 40 ft. tall poles as default for conventional poles
    9. Item 644 – added min sign size, post type, location, and anchor type for small roadside signs
    10. Item 658 – updated the post color for delineators and object markers
    11. Item 668 – added pay item for handicap wheelchair symbol
    12. Item 5161 – added guide on construction perimeter fence
    13. Item 5162 – added guide on aerial photo for all jobs over $25M
    14. Item 6016 – updated info for ITS conduit
6. Appendix
    1. B-1 – updated when to use Type D for Item 247 flex base

## 10/05/23

1. Project Development
    1. N/A
2. Pre-Bid Contact and Approver
    1. N/A
3. General Plan Sheet Preparation
    1. N/A
4. Pavement Section
    1. N/A
5. Project Duration and Schedule Guide
    1. Computation of Contract Time – revised parameters to determine time charge method
6. Project Specific Guide
    1. Lead and Asbestos – adding link to district request process for testing
7. Item by Item
    1. Item 192 – added new item to designers guide. Mulch is not subsidiary to bed prep item.
    2. Item 316 – revised to not use the SCTABLE standard for tier oil system

3. Item 543 – added note to include blading in cable barrier jobs

8. Appendix
    1. B-5 – new appendix for locations of PFC required for environmental reasons due to WPAP commitment.

## 04/23/24

1. Extensive changes to accommodate new 2024 spec book.
2. Other changes beyond 2024 spec book are included.