



Designer Reference Guide

Fort Worth District Guidance

TPD Director, Fort Worth District

Purpose

These guidelines are maintained by the Fort Worth District Director of Transportation, Planning and Development Office to serve as a quick reference to all designers developing projects for the Fort Worth District. The purpose is to produce a more standardized approach for Fort Worth District projects.

Summary of Changes

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General Plan Sheet Preparation

Agreements

- ***Execution of agreement/amendment will need to be completed prior to letting and referenced on title sheet.***
- Coordinate with District Maintenance and District Traffic Operations on existing maintenance agreements that may be impacted or amended.
 - Landscaping
 - Aesthetics
 - Painting
 - Lighting
 - Signals
- Landscape and Aesthetic elements included in the plans will require a Landscape Maintenance Agreement (LMA) or amendment to existing LMA.
- Lighting to be maintained by others will required Lighting Agreement to be coordinated with District Traffic Operations office.

Preliminary Plans Posted Online

- Check with District Construction Office (DCO) Construction Administrator on all projects to evaluate need for early online posting.
- Display at 60%, comments from contractors normally when the plans are closer to 90%.
- DCO will provide guidance on adding plans to File Transfer Protocol (FTP) site for Early Plan Review.
- Early Plan Review site: <https://ftp.dot.state.tx.us/pub/txdot-info/Pre-Letting%20Responses/>.

Standards

- Check for [Fort Worth \(FTW\) Standards](#).
- Include all Barricade and Construction and applicable Work Zone (WZ) standards.
 - This includes the current rumble stripe standards, [WZ\(RS\)-XX](#).
- Include the current standard for temporary large roadside signs [TLRS \(1\) thru \(4\)-17](#) in all projects on controlled roadways.

Stream Crossings

- Use the Temporary Stream Crossing Detail ([TSCD](#)) ([FTW](#)) Standard for any construction activity in the vicinity of a stream.

Survey

- Aerial Survey: Request for Aerial Survey (in-house) shall be submitted two (2) fiscal years (FYs) prior to starting Schematic or Plans Specifications and Estimates (PS&E). If need for aerial survey has not been planned to meet start of project, coordinate with District Survey prior to work authorization execution.
- Determine the need for an aerial survey based on criteria below:
 - Is aerial survey needed for schematic? (added capacity, major realignments, etc.) and/or
 - Does the project have earthwork quantities? Cross-section needed? and/or
 - Is your project over 1 mile? and/or
- The Project Manager (PM) shall evaluate the scope of the project and evaluate the needed survey prior to requesting aerial survey.
- PM should evaluate scope of project before recommending width of aerial survey to determine need. Coordinate with District Survey and/or Advance Project Development for options to evaluate your project outside recommended widths.
- Typical width of Aerial survey:
 - Freeway = 1200 feet.
 - Arterials = 600 feet.

Stationing

- For On-System Projects: Stationing shall be in preference order.
 - west to east/south to north, or
 - by direction of increase reference markers, or
 - by current established stationing.
- For Off-System Projects: Stationing to increase from west to east or south to north.
- Differentiate alignments if roadway has multiple, parallel alignments, for example:
 - Main Lanes “3755+00”.
 - Northbound Frontage Road “13755+00”.
 - Southbound Frontage Road “23755+00”.
- Use alignment names that describe the purpose, such as:
 - Northbound Frontage Road (NBFR).

- Southbound Main lane (SBML).
- Northbound Exit Ramp (NBEX).
- Southbound Entrance Ramp (SBEN).

****Note****: All alignments in the plans shall have a Main Lane reference.

Traffic Control

- Temporary Roadway Illumination will be required and maintained throughout construction when illumination exist along the corridor. Traffic phasing will account for temporary illumination and all efforts to establish permanent illumination as early in phasing as possible. Use Item 617 for Temporary Roadway Illumination.
- Multiple Phases
 - Use “Phase” and “Step” terminology. Avoid using the term “Stage.”
 - Use numbers to designate order, for example:
 - Phase 1 followed by Phase 2.
 - Phase 1-Step 1; Phase 1-Step 2; Phase 2, etc.
- Traffic Control Plan (TCP)
 - Design the TCP with the same detail as the rest of the project.
 - a. Do not reference standards (detail layout and design phasing).
 - b. Detail the alignment of detours (geometry).
 - c. Detail required signing and the sign locations (stationing).
 - d. Detail the required alignment between phases (detour alignment into next phase).
 - e. Do not rely only on old plans, verify what is in the field (pavement widths, shoulder conditions, etc.).
 - Evaluate and keep cross sections for detour pavement to identify vertical challenges.
 - a. Driveway tie-ins.
 - b. Construction Vertical Transitions.

Overlays

- Reference the [FTW Pavement Design Standard Operating Procedure](#) (internal only, outside TxDOT coordinate with PM for guidance).
- Visit the project site and look for areas in need of improvement, (e.g., bridge follow-up actions, scour, signage, lighting, signals) and check with the Area Office (AO) Maintenance Section supervisor for issues that should be corrected.
- Include TxDOT Standard [TE\(HMAC\)-11](#).

- Use the 5-day workweek. Use of alternate charge day is to be coordinated and approved by the Area Engineer (AE).
- For overlay only projects, include Item 134 for Type A Backfill unless curbed roadway. Refer to Item 134 for additional information.
- Include Item 351 for base repairs. Quantities for base repairs should be based on non-destructive pavement testing such as Ground Penetrating Radar. Schedule testing with Pavement Engineer.
- If traffic elements (e.g. signals, illumination, flashers) are located within project limits, coordinate with District Traffic Section to identify replacement and upgrade items.
- If Metal Beam Guard Fence is present, use Item 540 to bring to new standard, and include:
 - Rail adjustment bid items,
 - Increase height if placing overlay adjacent to existing Metal Beam Guard Fence (MBGF).
- Include plan detail showing tapers into driveways and intersections.
- Include shoulder texture per guidance in [Appendix B](#).
- Do **NOT** overlay or use seal coat on bridges with no existing overlay.
- Do **NOT** overlay or use seal coat on an existing direct traffic concrete bridge deck.
- If bridges are located within project limits, coordinate with District Bridge Section.
 - Mill off all existing hot mix on bridge decks prior to overlay.
 - Incorporate items to address Follow Up Actions for bridges within project limits.
 - Overlays 2 inches and over, include Item 454-6008 for bridge expansion joints.
 - Construction joints coordinate with District Bridge Section (to be posted).
 - Review existing Bridge Inspection Records for bridge deck conditions.
 - Include Bridge Deck Repair Item 429-6005 based on inspection report findings and coordination with Bridge Section.
- Mill under existing bridges/structures to maintain vertical clearance.
 - If milling is not feasible:
 - a. Coordinate with District Bridge Section on change of vertical clearance.
 - b. Vertical Clearance measurements will be required to be measured.
 - a. Include vertical clearance sign and/or bracket.
- Avoid raising roadway profile in a floodplain (otherwise it may impact Base Flood Evaluation).
 - Provide mill detail to maintain existing profile elevation, or
 - Coordinate with Federal Emergency Management Agency floodplain to confirm “No Adverse Impact.”

- Consider modifications to existing striping for:
 - Updates to current standards.
 - Areas to improve operations.
 - Areas to improve bike accommodations (check with district bike coordinator).
- Verify with AO Maintenance Section if following items are needed:
 - Item 100,
 - Tree trimming/brush removal- Use [TRB-15\(1\)](#) & [TRB-15\(2\)](#),
 - Use Item 752-6003 for along right-of-way,
 - Use Item 752-6004 for channels.
- Is Type D level-up necessary to obtain cross slope and fix rutting?
 - Required when overlay thickness is 1 inch or less.

Bridges

- Review existing Lead and Asbestos report log.
 - Coordinate lead or asbestos removal with Bridge Section and District Maintenance for remediation prior to project letting.
- All new bridge designs are to account for 2-inch Hot Mix Asphalt Concrete (HMAC) overlay loading. Issues arising due to account of HMAC loading to be coordinated with District Bridge section for evaluation and further guidance.
- Bridge deck without existing overlays shall not receive overlay without approval of Director of Maintenance (DOM) and Bridge Engineer. The preference is no overlay.
- Surface Seal from water infiltration prior to overlay.
 - Use a two-course seal, not desirable on freeways.
 - Use trackless tack to be used with high quality asphalt only (i.e., SMA, TOM-mixes) consult with Pavement Engineer.
- Approved overlays or existing overlays.
 - Mill off all existing overlay. Use profile mill (Item 0354 6013) on last ½ inch asphalt surface.
 - Load rating will be performed on structure(s) to ensure load capacity of additional dead load.
 - Bridge Deck overlays shall not exceed 2 inches.

Pedestrians

- When including pedestrian elements into a project, a separate summary sheet shall be included.

- Projects with pedestrian element aggregate cost of \$50,000 or more shall be submitted for Texas Department of Licensing and Regulation (TDLR) Review and receive TDLR Registered Accessibility Specialist (RAS)# prior to letting. Place TDLR RAS# on the title sheet.
- Address existing or project impacts to existing pedestrian paths, including non-American with Disabilities Act (ADA) compliant paths created by existing pedestrian traffic.
- Provide an alternate route or a temporary path during construction.
- Temporary Path.
 - Pay item 0531-6033 CONCRETE (CONC) SIDEWALKS (SPECIAL) TYPE B.

Item 7 Legal Relations and Responsibilities

- Refer to District Master GN for constraints defined for the district.
 - Select appropriate constraints to include in the project. Do not include constraints when not applicable.
- Additional Constraints: Does the project have additional constraints?
 - Coordinate with AO for additional constraints in respective area of project.
- See District Master GN for more information of “Prevention of Migratory Bird Nesting.”

Item 8 Prosecution and Progress

- Coordinate with AE on working day charges. Default 5-day workweek.
- Coordinate with DCO to review working day charges to account for weather and holidays.
- State in GN use of CPM Schedule (8 months or more) or Bar Chart (less than 8 months).
- Designate in General Notes to provide a Project Schedule Summary Report as directed by DCO.

Item 9 Measurement and Payment

- DCO is available to assist with creating estimated amount for each item.
- Include a force account in the estimate for the following items when applicable:
 - Erosion Control
 - Safety
 - Law Enforcement
 - Railroad

Item 100 Series

Item 100 Series

Item 100 Preparing Right-of-Way

- All projects include bid item 100-6002 Preparing Right-of-Way (ROW). Designate specific trees for preservation.
 - Show preservation in tabular form or on plan sheets.
 - Include tree protection bid item 1004.
 - Avoid listing those to be removed since omission of a tree to be removed could constitute added work.
- Coordinate with AO, Maintenance Section, and DOM on tree trimming and brush removal along the corridor to include in project estimate.
 - Refer to Item 752 Tree and Brush Removal,
 - Request state funds for this item to ATP, when not used in a Routine Maintenance Contract.
- Use of appropriate removal item will need to be used, these items will not be subsidiary to Item 100.
- Clearly show all removal items and quantities on the removal layouts within the plans. Include all pay items and subsidiary items to item.

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.

- If permanent fencing is included in the plans, sequence the work to be done early in the construction phase prior to removing existing fencing.
- If fencing is to be removed with no permanent fencing in the plans, include temporary fencing when permanent fencing must be removed for construction.

Item 104 Removing Concrete

- Clearly show all removal items and quantities on the removal layouts within the plans. Include all pay items and subsidiary items to item.
- Riprap and mow strips will be paid using Item 104-6009.
- Concrete medians will be paid using Item 104-6011.
- When a structure is to be removed, removal of riprap as required, approach slabs, and shoulder drains are to be listed in tabular format in the plans and to be designated as subsidiary to Item 496.

Item 105 Removing Treated and Untreated Base and Asphalt Pavement

- Must be quantified and paid for separately.

- Do not include as part of excavation quantity.
- Include quantity summary alongside excavation summary.
- Coordinate with DOM and corresponding Maintenance Section if salvaging materials removed from the project. This may be used for County Assistance Program.

Item 106 Obliterating Abandoned Road

- Must be quantified and paid for separately.
- Do not include as part of excavation quantity.
- Requires use of Item 105 to remove base and/or Item 305 for asphalt material.
- Requires additional topsoil and seed, typically salvage material is not enough.

Item 110 Excavation

- Provide quantity summary in plans in tabular form by station.

Item 132 Embankment

- Default is Type B Ordinary Compaction bid Item 132-6004.
 - Includes Special Provision 132-002.
- Provide quantity summary in tabular form by station. Do not use Type C unless AO approval is obtained.

Item 134 Backfill Pavement Edges

- Use bid item 134-6001 for Type A Backfill.
- Recycled Asphalt Pavement (RAP) material may be used with emulsion. Coordinate with AE or Pavement Engineer on emulsion type.

Item 160 Topsoil

- The intended use for this item is for use of salvaged topsoil from project.
- Use Item 160 when the availability of Item 161 Pre-Blended Compost Manufactured Topsoil (CMT) is limited or price prohibitive. Coordinate with local AO on availability for project location.
- Use in conjunction with Item 162 or Items 164/169.
- Limit the amount of disturbance.
- Use bid item 160-6003 for 4-inch topsoil.
- Coordinate with AE and DCO before use of “Blended on Site” CMT on a project.

Item 162 Sodding for Erosion Control

- Use sod for all urban projects, unless a large area or adjacent to undeveloped property.
- Coordinate with Environmental Section if any type of grasses is restricted in areas within project limits.
- Requires identical quantity of Item 160.
- Use bid item 162-6002, block sod for small areas.
- Use bid item 162-6008, roll sod for large areas more than 1,000 square yards.
- Coordinate with FTW Landscape Architect on use of Item 166 for seeded or sod locations for project.

Item 168 Vegetative Watering

- Use bid item 168-6001 (1,000,000 Gallons = 1 MG).
- Use rate on [FTW Master GN](#), (internal only, outside TxDOT coordinate with PM for guidance).

Item 169 Soil Retention Blankets

- Use to cover ditch or stream flow areas or steep embankment slopes as needed. Combine with seeding or sod to establish permanent vegetation.
- See Item 169.2 Standard Specification book for class and type.

Item 180 Wildflower Seeding

- Use this item for all rural project with disturbed soil.
- Locations are to be shown in the plans for Wildflower seeding.
- Use mixture in Master GN and verify with FTW Landscape Architect on variations for the project.

Item 200 Series

Item 200 Series

Item 247 Flexible Base

- Type A, Grade 1-2 is to be used for roadway.
- Type E, Grade 4 is to be used for foundation course under the approach slabs and at other locations shown on the plans.
- Payment for flex base to be cement treated will be by Flex Base (Roadway Delivery) (Type E Grade 4) (Final Position).
- Roadway detail showing limits for cement treatment must be included in the plans.

Item 260 Lime Treatment (Road-Mixed)

- FTW preference is road mixed Item 260.
- Treatment depths and type of treatment are to be shown on Pavement Design Report or coordinated with the Pavement Engineer.
- When requiring 36-inch treatment depth, make sure to provide an acceptable area within or adjacent to the site to allow the contractor to remove and treat the top 18 inches of soil. May impact environmental clearance if outside the roadway environmental footprint. Coordinate with District Environmental Section.
- Use slurry in all urban projects.
- Reference the [FTW Standard Operating Procedure \(internal only, outside TxDOT coordinate with PM for guidance\)](#).

Item 275 Cement Treatment (Road-Mixed)

- FTW preference is road mixed Item 275. (Use Master GN).
- Treatment depths and type of treatment are to be shown on Pavement Design Report or coordinated with the Pavement Engineer.
- Reference the [FTW Standard Operating Procedure \(internal only, outside TxDOT coordinate with PM for guidance\)](#).

Item 300 Series

Item 300 Series

Item 301 Asphalt Antistripping Agent

- Use this Item in all plans requiring Items 334, 340, 341, 342, 344, 346, 347, and 348 as the alternate to lime which has been proven to be detrimental with the use, with our local limestone aggregates.

Item 305 Salvaging, Hauling, and Stockpiling Reclaimable Asphalt Pavement

- When material to be retained by the department, default 95% passing the 2-inch sieve. Approval for use other than 95% shall be approved the DOM and Director of Construction.
- Coordinate with AO and Maintenance Section on need for Reclaimed Asphalt Pavement for use in Maintenance or County Assistance Program. Provide overall quantity to Maintenance Section for inventory purposes.
- Location(s) is(are) to be determined by the Maintenance Section and incorporated in GN under this item.

Item 316 Seal Coat

- Type of treatment and material selection to be coordinated with the DOM, AE, and Pavement Engineer.
- For surface seal coats use [Seal Coat Material Selection Table](#).

Item 400 Series

Item 400 Series

Item 438 Cleaning and Sealing Joints

- All projects (except traffic and routine maintenance) with bridges within the project limits shall include this item and pertinent pay items to maintain bridge joints. Coordinate all exceptions with Director of Transportation, Planning and Development.

Item 500 Series

Item 500 Series

Item 512 Portable Traffic Barrier

- If need to furnish new barrier, default use of Single Slope Concrete Barrier (SSCB) and Low Profile Concrete Barrier.
- Tarrant County projects are required to use the following pay items:
 - Use, furnish, and install bid items. No available stockpiles within Tarrant County.
 - Use remove item retained by contractor.
- When placing barrier on a curved alignment, verify that the barrier to be used can be fitted to the specified horizontal and/or vertical curve radius.
- Avoid mixing portable steel with portable concrete due to connection issues.
- Coordinate with AO Maintenance Section on stockpile location and availability.
- Use designated source and reserve and coordinate with AO/MS to determine stockpiles availability 6 months prior to letting.
- Coordinate with AO Maintenance Section to determine if TxDOT is going to retain barrier and identify restocking and stockpile location. **Do Not Retain barrier within Tarrant County projects.**
- When using a designated source (DES SOURCE) and/or stockpile (STKPL) items, place location addresses in GN. **Not for use in Tarrant County.**

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

- Use [FTW District Standard Concrete Curb and Curb and Gutter \(CCCG\)](#).
- Default Item 529-6008 Concrete Curb and Gutter Type II.
- Curb and gutter should sit on base or subgrade. Avoid placing on layer of hot mix to avoid remobilization of hot mix crew when curb is complete.

Item 530 Intersections, Driveways, and Turnouts

- Use bid item based on surface.
- Provide separate pay items for CONC, Asphalt Concrete Pavement or Surface Treatment.
- Replace existing driveways with same type of material.
- New and replacement driveways will require vertical profiles in plans.
- Upgrade existing base driveways to seal coat or hot mix surface.
- Verify driveway pipe type and size.

- Use mailbox side road placement and turnouts statewide standard [MB-14\(2\) thru \(2B\)](#) for mailbox turnout.

Item 531 Sidewalks

- Use bid item 531-6002 for 5-inch-thick sidewalk and shared use path.

Item 533 Milled Rumble Strips

- Profile pavement markings or rumble strips (Center and Edge line) shall be placed for all roadways with posted speed of 50 miles per hour (mph) or greater.
- Milled Rumble strips are preferred.
- Designer would need to evaluate bicycle traffic. Refer to Edge and Center line Texture Guide in [Appendix B](#) for guidance.

Item 536 Concrete Medians and Direction Islands

- Do not place medians on bridge decks. Coordinate with Bridge Section is required if alternative is required for consideration.
- Allow for turning radius at intersections in all directions with auto turn templates or similar.
- Is there high truck volume or special industrial receivers around the project area?
 - Use WB-67 turning radius to evaluate median geometry.
- Medians less than 10 feet wide shall be riprap or brick pavers.
 - Less than 10 feet is difficult to maintain vegetation.
 - Coordinate aesthetic treatment with local government and TxDOT Landscape Architect.
 - a. Coordinate with District Maintenance on needed Landscape Maintenance Agreements.

Item 540 Metal Beam Guard Fence

- Guardrail should be offset at least 4 feet and desirably 5 feet or more from the nearest edge of fixed objects. Refer to [Roadway Design Manual](#)
- See Standard [Bridge End Details \(BED\)-14](#) for bridge ends.
- Verify posts do not conflict with underground drainage or utilities.

Item 542 Removing Metal Beam Guard Fence

- Coordinate removal with respective Maintenance Section Supervisor for use in County Assistance Program. Designate stockpile location as coordinated with respective Maintenance Section.

Item 543 Cable Barrier System

- Cable barrier shall be minimum 12 feet from travel lane or obstruction due to deflection.
- If less than 12 feet from travel lane, use alternate respective Item 540 Metal Beam Guard Fence or Item 450 Railing or Item 512 Portable Traffic Barrier.
- Include note from Master GN for delineator designation. Include FTW Delineator and Object Marker (D&OM) standard for delineation. For delineation refer to Item 658.

Item 545 Crash Cushion Attenuators

- Include Crash Cushion Summary Sheet.
- Evaluate length and width of attenuator selected, proper placement in area designated, and impacts to pedestrian elements.

Item 600 Series

Item 600 Series

Item 610 Roadway Illumination Assemblies

- Coordinate with District Traffic Office to verify city maintenance of new assemblies.
- Use LED lights for all fixtures.
- Conventional lights use Type SA unless on concrete barrier then use Type SP.
- Assembly shall be designated as a combo of circuit letter and run number (ex. A-2).
- High Mast Illumination: Coordinate with District Traffic Office for default bid items to ensure items below are per FTW Guidance.
 - 6156 6009 LED HI MST IL AM (6 FIXT) ASYM (TY A) SHLD.
 - 6156 6010 LED HI MST IL AM (6 FIXT) ASYM (TY B) SHLD.
- Design TCP to install and energize early in project sequence.
- Verify pole location does not conflict with overhead utilities.

Item 617 Temporary Roadway Illumination

- Corridors with existing illumination will need to maintain illumination through duration of project. Use of temporary roadway illumination will be required.
- Consider including portable light tower at busy intersections or TCP transitions.
 - Use bid Item 617-6002 and following general note.
 - a. Item 617- Temporary illumination by the month is for placement of a single portable light plant for safety of the public. Placement as directed.

Item 618 Conduit

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

Item 620 Electrical Conductors

- Regardless of volts, install a minimum size #8 equipment grounding conductor (EGC) in all conduits including loop detectors and traffic signal cables. Payment and size of the EGC will be in accordance with standard Electrical Details Conductors [ED \(3\)-14](#).

Item 624 Ground Boxes

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

Item 628 Electrical Services

- All services should be 120/240.
- Services shall be placed near an existing power transformer.
- Avoid cost for new electrical distribution lines.
- Electrical Services shall be designated by a number.
- Circuits shall be designated by a letter.

Item 644 Small Roadside Sign Assemblies

- Bridge rail mounted signs should be avoided due to limited access for maintenance.
 - If necessary, use bid item 644-6066 and statewide standard Sign Mount Details Bridge Railing [SMD \(BR-1\)-14](#).
- Bridge mounted vertical clearance signs.
 - Use bid item 644-6064 or 644-6065 and statewide standard Bridge Mounted Clearance Sign Assembly [BMCS](#).

Item 647 Large Guide Sign Support and Assemblies

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

Item 650 Overhead Sign Supports

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

Item 658 Delineator and Object Marker Assemblies

- Use D&OM standards to verify type.
- Use FTW D&OM standard (to be posted online)
- D&OM are to be evaluated along corridor to be re-established or updated to FTW D&OM standard and color designation.
- For Cable Barrier & MBGF use:
 - 0658-6088 INSTL DEL ASSM (D-SY) SZ 1 (YFLX) SRF.
 - 0658-6089 INSTL DEL ASSM (D-SY) SZ 1 (YFLX) SRF (BR) For Bi-direction traffic with Red on back.

- Yellow delineator mounted to Concrete Traffic Barrier (CTB) (Left side of road):
 - 0658-6026 INSTL DEL ASSM (D-SY) SZ (BRF) CTB (Yellow on one side blank on back).
 - 0658-6027 INSTL DEL ASSM (D-SY) SZ (BRF) CTB (BI) For Bi-direction traffic (Yellow on both sides).
 - 0658-6070 INSTL DEL ASSM (D-SY) SZ (BRF) CTB (BR) For Bi-direction traffic (Red on back).
- White delineator mounted to CTB (Right side of road):
 - 0658-6013 INSTL DEL ASSM (D-SW) SZ (BRF) CTB (White on one side blank on back).
 - 0658-6014 INSTL DEL ASSM (D-SW) SZ (BRF) CTB (BI) For Bi-direction traffic (White on both sides).
 - 0658-6069 INSTL DEL ASSM (D-SW) SZ (BRF) CTB (BR) For Bi-direction traffic (Red on back).

Item 662 Work Zone Pavement Markings

- Include pay item for tabs on all finished overlay surfaces open to traffic prior to final striping, except for Interstate and Freeway mainlanes.
- For interstate and freeway mainlanes, include type II pavement markings (water based).
- Include pay item for tabs on all projects that have new surface over the existing stripe.

Item 666 Retroreflectorized Pavement Markings

- Use multi-polymer striping for all concrete riding surfaces.
- Use 6-inch-wide markings for following main lanes:
 - I-20 (All)
 - I-30 (All)
 - I-35W (All)
 - I-635 (All)
 - I-820 (All)
 - SH 114 (All)
 - SH 121 (All)
 - SH 170 (All)
 - SH 183 (Murphy to Dallas County Line)
 - SH 183 (Vickery Boulevard to I-20)
 - SH 199 (Tarrant/Parker County Line to Lake Worth)
 - SH 360 (All)
 - Spur 280 (All)
 - US 287 (I-20 to Ellis County Line)

- US 287 (I-30 to I-820)
- US 81/287 (Tarrant/Wise County Line to I-35W)
- Include Item 666-6158 or 666-6161 for shadow lane line per [CPM \(1\)-14](#) on concrete pavement and bridge decks with concrete driving surface.
- Profile pavement markings or rumble strips shall be considered for all roadways.
 - See Edge and Centerline Texture Guide in Appendix B for guidance.
- If there is high bicycle traffic in the area, designate gap spacing by detail for shoulder rumble strip to accommodate bicycle traffic.

Item 680 Installation of Traffic Signals

- Coordinate with District Traffic Office for new maintenance assemblies and upgrades.
- If maintained by a local entity; maintenance agreement must be executed and shown on title sheet.

Item 686 Traffic Signal Pole Assemblies

- Verify traffic signal poles do not conflict with underground and overhead utilities. Existing utilities verified with survey and sub utility engineering.

Item 688 Pedestrian Detectors and Vehicle Loop Detectors

- Traffic signals that have pedestrian push buttons and walk/dont walk signal heads will need to be upgraded to current ADA standards if the curb ramps are upgraded at the signalized intersection.

Item 700 Series

Item 700 Series

Item 730 Roadside Mowing

- Use bid item 730-6107 for full width cycle.
- Include on projects longer than 12 months at 2 cycles per year.
- Requires use of State funds only, no Federal participation.

Item 731 Herbicide Treatment

- Use bid item 731-6007 for herbicide of pavement edges, structures, and fixtures.
- Include on projects longer than 12 months at 2 applications per year.
- Requires use of State funds only, no Federal participation.

Item 734 Litter Removal

- Use bid item 734-6002 for a cycle.
- Include on projects longer than 12 months at 2 cycles per year, prior to mowing.
- Add cycle for project completion, to be used as needed.
- Requires use of State funds only, no Federal participation.

Item 738 Cleaning and Sweeping Highways

- Use bid item 738-6010 by the mile.
- Include sweeping on curbed, urban projects longer than 12 months at once per quarter.
- Requires use of State funds only, no Federal participation.

Item 1000 and 6000 Series

Item 1000 and 6000 Series

Item 3076 Dense-Graded Hot mix Asphalt

- *Approval from Director of Maintenance required for use as surface mix.*
- Item 134 Backfilling Pavement Edges is required on all overlay projects unless the existing surface is milled and replaced to the same depth.
- RAP is not allowed in surface mixes.
- Use for level-up regardless of tons.
- Use for narrow areas (widths 4 feet or less).
- Hard to compact narrow areas and meet Item 341, etc. testing requirements.

Appendix

Appendix A Working Day Determination

- See "Standard Specification for Construction and Maintenance of Highways, Streets, & Bridges" for definitions of the various working days; Chapter 8.3.A.
- Excel (as well as Suretrak) provided by Division does not recognize impacts to construction due to weather. Suretrak will only recognize impacts to weather if define by user.
- To avoid a conflict within the contract between contract time and barricade the number of working days may need to be adjusted to reflect holidays/weather. For submittal as part of PS&E, provide schedule that has been modified to show contract time length. Will require adjustment of durations of activities.
- To determine total number of contractual working days and month of barricades follow the below examples. (AO to determine type of working day to be used.)

Calendar Day	30 days per month
Contract Time Adjustment	$C = T_s = 300$ days
No Adjustment made for the project	
5 Day Work Week	16 days per month
6 Day Work Week	20 days per month
7 Day Work Week	24 days per month

Appendix B Edge and Center Line Texture Guide

- Milled Rumble Strips (Item 533) vs Retroreflectorized Pavement Markings (Item 666).
- Method to determine type: Answer questions in order with last YES answer being the method to use.
 - Is posted speed 45 mph or less?
 - a. If yes, do not use and do not continue.
 - Does roadway have Curb or Curb & Gutter section (non-mountable)?
 - a. If yes, do not use and do not continue.
 - Determine type based on roadway.
 - a. Work on the following roadways? If yes, use milled rumble on main lanes

- I-20 Mainlanes
- I-30 Mainlanes
- I-35W Mainlanes
- I-635 Mainlanes
- I-820 Mainlanes
- SH 114 Mainlanes
- SH 121 Mainlanes
- SH 170 Mainlanes
- SH 183 Mainlanes
- SH 199 Mainlanes
- SH 360 Mainlanes
- US 287 Mainlanes
- US 67 Mainlanes (Cleburne)
- US 81/287 Mainlanes

****Note**:** All freeway mainlanes to receive milled edge line rumble strips due to snow and ice operations.

- Work on roadways not listed? If yes, continue with following questions.
- Determine type of treatment base on surface.
 - Is surface a seal coat? If yes, use profile marking and do not continue with questions.
 - Is surface hot mix less than 2 inches thick? If yes, use profile marking and do not continue with questions.
 - Is surface hot mix 2 inches or greater? If yes, use milled rumble.
 - Is surface concrete? If yes, use profile marking and do not continue with questions.

- Determine type of treatment based on shoulder width.
 - Is shoulder width 6 feet or greater? If yes, used milled rumble.
 - Is shoulder width less than 6 feet? If yes, use profile markings
- Account for bicycles on roadway.
 - Does roadway warrant Item 533 Milled Rumble Strips? If yes, provide spacing for bicycle access.