Bridge Plan Sheets QC Checklist

Initial (30%)	PBLR	Detailed (60%)	Final (90/95%)	Sealed (100%)	RTL	N/A	QC Item	Comments
Bridge Plan Sheets								
☐	☐	☐	☐	☐	☐	☐	Title Block information is complete	
☐	☐	☐	☐	☐	☐	☐	Sheet numbering is correct and matches Index of Sheets	
☐	☐	☐	☐			☐	Engineer's Preliminary Stamp on all applicable pdfs	
				☐	☐	☐	Engineer's Seal, Signature and Date on all applicable pdfs	
Hydraulic Data Sheets (***for bridges and bridge class culverts***):								
☐	☐	☐	☐	☐	☐	☐	Verify design storm is consistent with roadway classification	
							Drainage area map:	
☐	☐	☐	☐	☐	☐	☐	Drainage area boundary shown in bold	
☐	☐	☐	☐	☐	☐	☐	Structure location and callout shown	
☐	☐	☐	☐	☐	☐	☐	Contours shown (optional)	
☐	☐	☐	☐	☐	☐	☐	Stream name & flow direction	
☐	☐	☐	☐	☐	☐	☐	Direction of upstream flow shown	
☐	☐	☐	☐	☐	☐	☐	Scale	
☐	☐	☐	☐	☐	☐	☐	List of USGS maps used for delineating drainage area (optional)	
☐	☐	☐	☐	☐	☐	☐	**North Arrow**	
☐	☐	☐	☐	☐	☐	☐	Other:	
							Hydrologic Method table:	
☐	☐	☐	☐	☐	☐	☐	Note stating which hydrologic method used (SCS, Regression, gage analysis, rational method, etc.)	
☐	☐	☐	☐	☐	☐	☐	Hydrologic parameters (Q, Tlag Tc, CN, Channel Slopes, Omega EM parameters, P, Gage coefficient, etc.)	
☐	☐	☐	☐	☐	☐	☐	Other:	
☐	☐	☐	☐	☐	☐	☐	Other:	
							Cross Section Location Map:	
☐	☐	☐	☐	☐	☐	☐	Structure location and callout shown	
☐	☐	☐	☐	☐	☐	☐	Stream name & flow direction	
☐	☐	☐	☐	☐	☐	☐	Roadway centerline and stationing	
☐	☐	☐	☐	☐	☐	☐	Cross section lines with channel station numbers	
☐	☐	☐	☐	☐	☐	☐	Scale	
☐	☐	☐	☐	☐	☐	☐	Other:	
☐	☐	☐	☐	☐	☐	☐	Other:	
							Notes:	
☐	☐	☐	☐	☐	☐	☐	Note stating which type of terrain used (DEM, Lidar, resolution, etc.)	
☐	☐	☐	☐	☐	☐	☐	Note stating Atlas 14 rainfall data used	
☐	☐	☐	☐	☐	☐	☐	Note stating which hydrologic software used and version number	
☐	☐	☐	☐	☐	☐	☐	Note stating when date of coordination with local FPA	
☐	☐	☐	☐	☐	☐	☐	Note stating FEMA floodplain designation (includes Zone, Map number and effective date)	
☐	☐	☐	☐	☐	☐	☐	Note stating Datum used or adjustment factor	
☐	☐	☐	☐	☐	☐	☐	Note documenting tailwater boundary conditions (e.g., normal depth at downstream boundary)	
☐	☐	☐	☐	☐	☐	☐	Other:	
☐	☐	☐	☐	☐	☐	☐	Other:	
							Hydraulic Cross section (recommended)	
☐	☐	☐	☐	☐	☐	☐	Structure location and elevations	
☐	☐	☐	☐	☐	☐	☐	Design and 100 yr water surface elevations	

Bridge Plan Sheets QC Checklist								
Initial (30%)	PBLR	Detailed (60%)	Final (90/95%)	Sealed (100%)	RTL	N/A	QC Item	Comments
							Hydraulic Data Table:	
☐	☐	☐	☐	☐	☐	☐	Existing condition design and 100 year data (location of cross sections, channel station, Q, channel velocity, WSEL)	
☐	☐	☐	☐	☐	☐	☐	Proposed condition design and 100 year data (location of cross sections, channel station, Q, channel velocity, WSEL)	
☐	☐	☐	☐	☐	☐	☐	Verify model convergence upstream and downstream (i.e., exist and proposed WSELs should match downstream and upstream)	
☐	☐	☐	☐	☐	☐	☐	Hydraulic profiles (existing and proposed) of crossing graph (recommended)	
☐	☐	☐	☐	☐	☐	☐	Stage Discharge Curves graph included	
☐	☐	☐	☐	☐	☐	☐	Indicate type of model used (steady vs unsteady)	
☐	☐	☐	☐	☐	☐	☐	Verify bridge rail is included in model	
☐	☐	☐	☐	☐	☐	☐	Verify opening area of structure should be larger or equal to existing structure	
☐	☐	☐	☐	☐	☐	☐	Other:	
☐	☐	☐	☐	☐	☐	☐	Other:	
Bridge Layout:								
☐	☐	☐	☐	☐	☐	☐	Same horizontal/vertical scale used for plan and profile views (1:20 or 1:40)	
☐	☐	☐	☐	☐	☐	☐	Correct structural dimensions are shown (i.e., bridge lengths to nearest 0.01', etc.)	Refer to TxDOT's Bridge Detailing **Guide**
☐	☐	☐	☐	☐	☐	☐	Proper title is shown (i.e., IH 35 Overpass at 38th Street vs IH 35 Underpass at 38th Street)	Refer to TxDOT's Bridge Detailing **Guide**
							Design Info:	
☐	☐	☐	☐	☐	☐	☐	New NBI number shown	
☐	☐	☐	☐	☐	☐	☐	Target Design Speed	
☐	☐	☐	☐	☐	☐	☐	ADT (existing/projected)	
☐	☐	☐	☐	☐	☐	☐	Functional Classification	
☐	☐	☐	☐	☐	☐	☐	Context Classification	
							Existing Bridge Info:	
☐	☐	☐	☐	☐	☐	☐	Existing structure shown in plan view (dashed line)	
☐	☐	☐	☐	☐	☐	☐	Existing NBI number shown	
☐	☐	☐	☐	☐	☐	☐	Description of existing structure to be removed including number of spans, type of superstructure and type of substructure	
							Plan View:	
☐	☐	☐	☐	☐	☐	☐	Reference Line, Centerline, or Profile Grade Line (bearing and location)	
☐	☐	☐	☐	☐	☐	☐	Beginning and ending Bridge Stations and Elevations	
☐	☐	☐	☐	☐	☐	☐	All Bent numbers, stations and bearings	
☐	☐	☐	☐	☐	☐	☐	Joint types, widths and sealed/unsealed - if SEJ give SEJ size	
☐	☐	☐	☐	☐	☐	☐	Width (overall width, roadway width, lane widths, shoulder width, median width, sidewalk widths, etc.)	
☐	☐	☐	☐	☐	☐	☐	Rail type and nominal face of rail callout	
☐	☐	☐	☐	☐	☐	☐	Proposed foundation locations (dashed line)	
☐	☐	☐	☐	☐	☐	☐	Outside beam line numbers (consistent with span details)	
		☐	☐	☐	☐	☐	Dimensions to features that control vertical and horizontal clearances	
☐	☐	☐	☐	☐	☐	☐	Alignments of roadways passing below structure (if applicable)	
		☐	☐	☐	☐	☐	Points of minimum clearance for roadways, other structures, utilities, RR tracks, etc. (if applicable)	
		☐	☐	☐	☐	☐	Location of vertical clearance signs (if applicable)	Not a Bridge E&Q **sheet item**
		☐	☐	☐	☐	☐	Location of bridge drains or bridge lighting bracket stations (if applicable)	
☐	☐	☐	☐	☐	☐	☐	Approach pavement width (lanes, shoulders, etc.)	

Bridge Plan Sheets QC Checklist

Initial (30%)	PBLR	Detailed (60%)	Final (90/95%)	Sealed (100%)	RTL	N/A	QC Item	Comments
☐	☐	☐	☐	☐	☐	☐	Approach Slab type and dimension and Curb Returns	
☐	☐	☐	☐	☐	☐	☐	CSAB - Option 1 or CSAB Option 2 callout (if required)	
☐	☐	☐	☐	☐	☐	☐	Direction of traffic arrows	
		☐	☐	☐	☐	☐	Test hole number, station and offset, and elevation	
☐	☐	☐	☐	☐	☐	☐	ROW and/or easements shown (if applicable)	
☐	☐	☐	☐	☐	☐	☐	Horizontal Curve Data (if applicable)	
☐	☐	☐	☐	☐	☐	☐	Cross slopes (%)	
☐	☐	☐	☐	☐	☐	☐	Type, limits and thickness of riprap (and blockouts, if required)	
		☐	☐	☐	☐	☐	Deck Texture note	Refer to Pavement Manual
☐	☐	☐	☐	☐	☐	☐	Superelevation method and amount (if applicable)	
☐	☐	☐	☐	☐	☐	☐	Contours (optional)	
☐	☐	☐	☐	☐	☐	☐	Skew angle	
☐	☐	☐	☐	☐	☐	☐	North arrow	
☐	☐	☐	☐	☐	☐	☐	Other:	
☐	☐	☐	☐	☐	☐	☐	Other:	
							Stream Crossings:	
☐	☐	☐	☐	☐	☐	☐	Stream name and direction of flow	
							Widenings:	
☐	☐	☐	☐	☐	☐	☐	Existing structure with widths and lengths	
☐	☐	☐	☐	☐	☐	☐	Overall width and roadway width of new structure	
☐	☐	☐	☐	☐	☐	☐	Width of existing structure to remain	
☐	☐	☐	☐	☐	☐	☐	Dimension to stage construction joints.	
							Stage Construction:	
☐	☐	☐	☐	☐	☐	☐	Existing structure with widths and lengths	
☐	☐	☐	☐	☐	☐	☐	Existing/proposed foundation locations (dashed line)	
☐	☐	☐	☐	☐	☐	☐	Dimension to stage construction joints.	
							Railroad Overpasses/Underpasses	
☐	☐	☐	☐	☐	☐	☐	Specific Railroad guidelines used	
☐	☐	☐	☐	☐	☐	☐	Overpass: NBI and railroad milepost number shown	
☐	☐	☐	☐	☐	☐	☐	Underpass: DOT # and railroad milepost number shown	
☐	☐	☐	☐	☐	☐	☐	Location of RR tracks and ROW shown	
☐	☐	☐	☐	☐	☐	☐	Horizontal clearances from CL of track to bridge elements shown	
☐	☐	☐	☐	☐	☐	☐	Show RR station = roadway station at intersection of RR and roadway control lines	
☐	☐	☐	☐	☐	☐	☐	Direction of increasing RR milepost shown	
☐	☐	☐	☐	☐	☐	☐	Crashwall locations shown (if applicable)	
☐	☐	☐	☐	☐	☐	☐	Note to indicate if grade separation structure eliminates a highway-railroad at-grade crossing with active warning signals.	
☐	☐	☐	☐	☐	☐	☐	**Profile View:**	
☐	☐	☐	☐	☐	☐	☐	Overall Length of Structure	
☐	☐	☐	☐	☐	☐	☐	Lengths and Types of Units/Spans	
☐	☐	☐	☐	☐	☐	☐	Overall length, limits of payment, and type of railing (rail post spacing if required to clear slab joints) ("End of bridge rail for payment" note at both ends)	
☐	☐	☐	☐	☐	☐	☐	Vertical Curve Data and Grade (shown to the nearest 0.001') (e.g., +/- 1.275%)	
☐	☐	☐	☐	☐	☐	☐	Beginning and Ending Bridge Station (at face of abutment backwall) and Elevation	

Bridge Plan Sheets QC Checklist								
Initial (30%)	PBLR	Detailed (60%)	Final (90/95%)	Sealed (100%)	RTL	N/A	QC Item	Comments
☐	☐	☐	☐	☐	☐	☐	Girder end conditions at all bents (if applicable)	
☐	☐	☐	☐	☐	☐	☐	Minimum Calculated Vertical Clearances and Other Clearances as Required (structures, utilities, RR tracks, etc.)	
☐	☐	☐	☐	☐	☐	☐	PGL labeled	
☐	☐	☐	☐	☐	☐	☐	Existing and Proposed Ground Lines Clearly Marked	
☐	☐	☐	☐	☐	☐	☐	Grid Elevations and Stations	
☐	☐	☐	☐	☐	☐	☐	Column Heights ("H" heights)	Show regardless of Optional Interior Bent Drilled Shaft Detail on the FD standard sheet.
☐	☐	☐	☐	☐	☐	☐	Number, size, length (to scale), type and tip elevations of foundations	If required, direction of pile batter and orientation of footing on elevation and plan views)
							Special foundation notes (if required by geotechnical engineer)	
☐	☐	☐	☐	☐	☐	☐	Bent numbers must be circled	
		☐	☐	☐	☐	☐	Test Holes, Data, and Information	
☐	☐	☐	☐	☐	☐	☐	Header bank slope (e.g., 2:1 or 3:1)	
☐	☐	☐	☐	☐	☐	☐	Limits of header bank excavation (patterned)	
		☐	☐	☐	☐	☐	Clearance sign(s) and other signs attached to bridge	
		☐	☐	☐	☐	☐	Traffic signal detectors in bridge slab	
☐	☐	☐	☐	☐	☐	☐	Limits and type of riprap	
☐	☐	☐	☐	☐	☐	☐	Scale	
☐	☐	☐	☐	☐	☐	☐	Other:	
☐	☐	☐	☐	☐	☐	☐	Other:	
							Stream Crossings:	
							Do not show scour envelope - this should be included in drainage report	
☐	☐	☐	☐	☐	☐	☐	Include hydraulics data (100-yr and design flood elevations, Q and V) Verify these match Hydraulic Data Sheets	
☐	☐	☐	☐	☐	☐	☐	Proposed headwater labeled for cross section just upstream of bridge for design and 100 yr check	
☐	☐	☐	☐	☐	☐	☐	Bents/piers are not placed in center of channel	
☐	☐	☐	☐	☐	☐	☐	Bents are parallel to streamline	
☐	☐	☐	☐	☐	☐	☐	Low Chord Elevation shown. Proposed low chord should match existing low chord or be higher	
☐	☐	☐	☐	☐	☐	☐	Minimum 1 ft freeboard/Desirable 2 ft freeboard for on-system; meets or exceeds existing conditions for off system with current ADT < 400	
							Widenings:	Refer to Bridge Detailing Manual for more information
☐	☐	☐	☐	☐	☐	☐	Existing/Proposed foundation locations	
		☐	☐	☐	☐	☐	Show thickness of asphalt level up course (if applicable)	
							Stage Construction:	Refer to Bridge Detailing Manual for more information
☐	☐	☐	☐	☐	☐	☐	Existing structure with widths and lengths	
☐	☐	☐	☐	☐	☐	☐	Existing/proposed foundation locations (dashed line)	
							Railroad Overpasses/Underpasses	
☐	☐	☐	☐	☐	☐	☐	Location of RR tracks and ROW shown	
☐	☐	☐	☐	☐	☐	☐	Top of RR track elevation	
☐	☐	☐	☐	☐	☐	☐	Horizontal clearances from CL of track to face of interior bent columns, crashwall, retaining wall, or other obstructions.	
		☐	☐	☐	☐	☐	Vertical clearance sign shown on bridge rail (if required)	
☐	☐	☐	☐	☐	☐	☐	Location of crashwalls (if required)	
							Typical Transverse Bridge Section:	
☐	☐	☐	☐	☐	☐	☐	Overall roadway and bridge widths	
☐	☐	☐	☐	☐	☐	☐	Lane, shoulder and sidewalk widths	

Bridge Plan Sheets QC Checklist								
Initial (30%)	PBLR	Detailed (60%)	Final (90/95%)	Sealed (100%)	RTL	N/A	QC Item	Comments
☐	☐	☐	☐	☐	☐	☐	Direction of traffic arrows	
☐	☐	☐	☐	☐	☐	☐	Cross slopes (%)	
☐	☐	☐	☐	☐	☐	☐	Location of PGL	
☐	☐	☐	☐	☐	☐	☐	Type of rail and nominal face of rail called out	
☐	☐	☐	☐	☐	☐	☐	Type of superstructure used	
☐	☐	☐	☐	☐	☐	☐	Beam types and numbers (if applicable)	
							Widenings:	
☐	☐	☐	☐	☐	☐	☐	Existing structure with width	
☐	☐	☐	☐	☐	☐	☐	Overall width and roadway width of new structures	
☐	☐	☐	☐	☐	☐	☐	Width of existing structure to remain	
☐	☐	☐	☐	☐	☐	☐	Width of widening	
☐	☐	☐	☐	☐	☐	☐	Existing/Proposed Superstructure used and spacing	
							Stage Construction - use separate plan sheet:	
☐	☐	☐	☐	☐	☐	☐	Existing bridge section with existing widths, cross slopes, rail type and location, existing superstructure	
☐	☐	☐	☐	☐	☐	☐	Proposed lane widths, traffic arrows, and temporary rail locations for each stage	
☐	☐	☐	☐	☐	☐	☐	Proposed CL offset width (if applicable) for each stage	
☐	☐	☐	☐	☐	☐	☐	Proposed transverse bridge section as described above	
Bridge Class Culvert Layout:								
							Plan View:	
☐	☐	☐	☐	☐	☐	☐	Reference Line, Centerline, or Profile Grade Line (bearing, location and station)	
☐	☐	☐	☐	☐	☐	☐	Beginning and ending bridge class culvert stations and elevations (shown from inside face of outer walls)	
☐	☐	☐	☐	☐	☐	☐	Widths (overall width, roadway width, lane widths, shoulder width, median width, sidewalk widths, etc.)	
☐	☐	☐	☐	☐	☐	☐	Traffic direction arrows	
☐	☐	☐	☐	☐	☐	☐	Direction of stream flow	
☐	☐	☐	☐	☐	☐	☐	Description of existing structure	
☐	☐	☐	☐	☐	☐	☐	Wingwall type or end treatment with relevant dimensions	
☐	☐	☐	☐	☐	☐	☐	ROW and/or easement lines	
☐	☐	☐	☐	☐	☐	☐	Type, limits and thickness of riprap	
☐	☐	☐	☐	☐	☐	☐	Existing structure (dashed line) and existing NBI number	
☐	☐	☐	☐	☐	☐	☐	Proposed NBI number	
☐	☐	☐	☐	☐	☐	☐	Approach pavement width (lanes, shoulders, etc.)	
☐	☐	☐	☐	☐	☐	☐	Contours (optional)	
☐	☐	☐	☐	☐	☐	☐	Skew angle	
☐	☐	☐	☐	☐	☐	☐	North arrow	
☐	☐	☐	☐	☐	☐	☐	Other:	
☐	☐	☐	☐	☐	☐	☐	Other:	
							Lengthening/Widenings:	
☐	☐	☐	☐	☐	☐	☐	Dimension of width of lengthening/widening	
							Profile View:	
☐	☐	☐	☐	☐	☐	☐	Roadway cross section	
☐	☐	☐	☐	☐	☐	☐	Earthwork slopes and extents	
☐	☐	☐	☐	☐	☐	☐	Include hydraulics data (100-yr and design flood elevations and velocities) Verify these match Hydraulic Data Sheets	
☐	☐	☐	☐	☐	☐	☐	Proposed HW and TW are labeled for design and 100 yr storms	

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Initial (30%)	PBLR	Detailed (60%)	Final (90/95%)	Sealed (100%)	RTL	N/A	QC Item	Comments
☐	☐	☐	☐	☐	☐	☐	Flow line elevations at entrance and exit are labeled and culvert slope is shown	
☐	☐	☐	☐	☐	☐	☐	Direction of flow arrow with "FLOW" shown above	
☐	☐	☐	☐	☐	☐	☐	Wingwall type or end treatment with relevant dimensions	
☐	☐	☐	☐	☐	☐	☐	Type of rail or MBGF	
☐	☐	☐	☐	☐	☐	☐	Overall length of culvert	
☐	☐	☐	☐	☐	☐	☐	Existing and proposed ground lines	
☐	☐	☐	☐	☐	☐	☐	Grid elevations and widths	
☐	☐	☐	☐	☐	☐	☐	Existing structure (dashed line) and existing NBI number	
☐	☐	☐	☐	☐	☐	☐	Scale	
☐	☐	☐	☐	☐	☐	☐	Other:	
☐	☐	☐	☐	☐	☐	☐	Other:	
☐	☐	☐	☐	☐	☐	☐	**Lengthening/Widenings:**	
☐	☐	☐	☐	☐	☐	☐	Overall roadway widths of existing and new structures	
☐	☐	☐	☐	☐	☐	☐	Dimension of width of lengthening/widening	
☐	☐	☐	☐	☐	☐	☐	Dimension of breakback line (if applicable)	
							Stage Construction:	
☐	☐	☐	☐	☐	☐	☐	Dimension to stage construction joints	
							Special Details:	
☐	☐	☐	☐	☐	☐	☐	Table of reinforcing included if not shown in standards or provided elsewhere in plans.	
							Quantities:	
☐	☐	☐	☐	☐	☐	☐	Estimated quantities shown in tabular form on sheet. Include culvert, trench excavation, riprap, etc.)	
Bridge EQ Sheet:								
☐	☐	☐	☐	☐	☐	☐	Bid code number along top of table corresponds to bid item	
☐	☐	☐	☐	☐	☐	☐	Bid items in sequential order by increasing bid item number	
☐	☐	☐	☐	☐	☐	☐	Bid Item description matches description codes on TxDOT.gov	
☐	☐	☐	☐	☐	☐	☐	Unit of measurement for bid item matches the units on TxDOT.gov	
☐	☐	☐	☐	☐	☐	☐	Bridge element lists substructure elements (e.g., 2~Abutments, 2~Bents, etc.) followed by superstructure spans or units	
☐	☐	☐	☐	☐	☐	☐	Quantities match structural detail sheet quantities	
☐	☐	☐	☐	☐	☐	☐	Quantities are separated into phases (if applicable)	
☐	☐	☐	☐	☐	☐	☐	If EQ sheet does not include bearing seat elevations or other engineering-related information, Engineer's seal is OMITTED.	
☐	☐	☐	☐	☐	☐	☐	Vertical clearance signs are not included in Bridge EQ sheet (if applicable)	
							Bearing Seat Elevations:	
☐	☐	☐	☐	☐	☐	☐	Elevations are checked against program output or spreadsheet	
☐	☐	☐	☐	☐	☐	☐	Elevations are listed forward and back	
☐	☐	☐	☐	☐	☐	☐	Elevations are rounded to the nearest 0.001 ft.	
Bridge Detail Sheets - ***Refer to the Bridge Detailing Guide for these checklists*** **:**								