



Design-Build Project

Design and Submittal Review Process

Alternative Delivery Program



Design and Submittal Review Process

This is a self-directed overview of Design-Build contracting based on Version 6.0 of the Programmatic Documents





Training Goals:

1

Understand TxDOT and DB Contractor roles in the Design and Submittal Review Process

2

Become familiar with the Design and Submittal Review Process

3

Design and Submittal Review Process - Challenges



Design Submittal and Review Process



1	TxDOT Review Responsibilities	5-16
2	DB Contractor Submittal Responsibilities	17-19
3	Design Submittal Process	20-33
4	Record Documents and Plans	34-35
5	General Submittal Guidelines	36-37
6	Resolution of Comments	38-40
7	Key Take Aways	41-42



1.

TxDOT Review Responsibilities





PURPOSE OF TxDOT REVIEW

CONTRACT REFERENCE

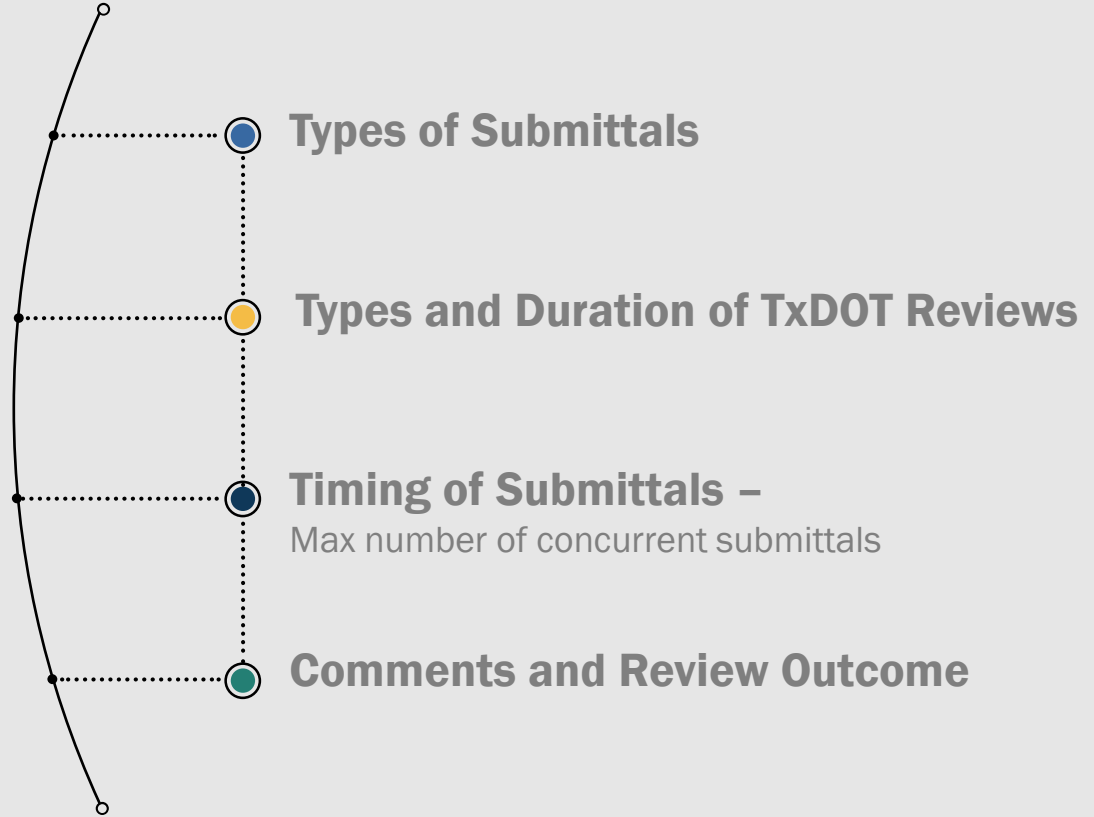
DB GC,
Section
5.2.1.7.1

TxDOT reviews for:

- Completeness or correctness
- Compliance with contract documents
- Verification that contractual predecessor requirements have been met
- Commitments made to Third Parties are consistent with TxDOT practices
- Equal to or better than the requirements of Good Industry Practice
- Do not violate or conflict with any Law of Governmental Approval

TxDOT Reviews – Key Takeaways





Types of Submittals



Submittals	Submittal Schedule	Department Action	Reference Section
Technical Working Group meeting minutes	Upon Request	For Information	Attachment 4-1
Pre-Submittal Workshop meeting invitations, supporting materials, and agendas	5 Business Days prior to the workshop	For Information	Attachment 4-1
	Upon Request	For Information	Attachment 4-1

Submittal Schedule	Department Action	Reference Section
After NTP1	Approval	4.2.1
Approval prior to NTP2	Concurrence	4.2.3
Approval prior to NTP2	Approval	4.2.5

CONTRACT REFERENCE
DB GC,
Table 4-2
Table 4-3

CONTRACT REFERENCE
DB GC,
QCP-02

- PMP & QMP
- Safety Plan
- PSQMP (inc. packaging plan)
- Project baseline schedule and updates
- Milestone design packages
- Studies and reports

DB Contractor prepares a Design Submittal Packaging Plan and Submittal Schedule containing all items, elements or portions of the Work.

- Permanent Work Items
- Temporary Work Items
- Early Start of Construction
- 3rd Party Submittal Packages

Lists shown in this presentation are only informative and not a complete list



General Review

- Quality Records
- Preliminary Design Submittals
- Final Design Submittals
- Environmental Documents
- USACE 404 IP Amendments
- Information Shared with Public

Types of Submittals that require a standard review but not an Approval or Concurrence

Information Only

- Quality records
- Information shared with public



Approval Review –
Review of
submittals that
require TxDOT
approval.



- Baseline Schedule
- ROW Acquisition Package
- Public Information and Communication Plan
- PMP and QMP
- Media Releases
- Payment Requests
- TCP RFC Design Submittal
- Max Pay Curve



Concurrence Review –

Review of submittals to ensure they are in compliance with the contract documents.



- Released for Construction (RFC) Submittals
- Utility Certification of Compliance
- Monthly Report of Quality Inspections
- Meeting Summaries

Independent Review of Complex Structures



Complex structures definition:

- Long span bridges (>350 feet), cable-stayed bridges, suspension bridges, arch bridges, post-tensioned boxes, segmental concrete bridges, moveable bridges, truss bridges, walls over 30 feet in height.
- Associated erection design, plans, and manuals are also considered Complex Structures.



Complex Structure Criteria Reports and Plans are submitted for TxDOT [review and approval](#).

Submittals	Submittal Schedule	TxDOT Action	Reference Section
Draft of Complex Structures Criteria Report	Three Business Days in advance of initial Complex Structures workshop	For information	21.2.1.1
Complex Structures Criteria Report	Must be submitted so that review and comment process is completed in advance of submittal of Preliminary Design Submittal	Approval	21.2.1.1
Complex Structures Modeling Data	Prior to submittal of Complex Structures Plans	Review and comment	21.2.1.1
Complex Structures Plans	After submittal of Complex Structures Modeling Data	Approval	21.2.1.1



Duration of TxDOT Reviews



Duration of reviews vary from submittal to submittal.



Duration of TxDOT reviews can be found in the DB General Conditions.



DB Contractor's schedule should reflect accurate review durations.



The DBA specifies the due dates of various submittals.

- A list of submittals is included in the DB Contractor's Design Packaging Plan and Submittal Schedule approved by TxDOT.
- The timing of submittals in the Design Packaging Plan and Submittal Schedule complies with the contractual due dates.



The maximum number of concurrent submittals is defined in the contract documents.

Submittals	Submittal Schedule	Department Action	Reference Section
PMP – Project Administration Component	After NTP1	Approval	4.2.1
PMP – Safety and Health Plan	Approval prior to NTP2	Approval	4.2.3
PMP – TxDOT – DB Contractor Communications Plan	Approval prior to NTP2	Approval	4.2.5



TxDOT's Review Responsibilities – Key Takeaways

Understanding TxDOT's role in the submittal review process



Requires action from TxDOT

- General Review
- Concurrence
- Approval/disapproval



TxDOT has authority to reject

- Incomplete submittal
- Inaccurate submittal



TxDOT provides review dispositions

- For submittals that require TxDOT's Approval, Concurrence, and Review and Comments
- These include:
 - Exceptions - Objections
 - Rejections - Disapprovals
 - Resolution



2.

DB Contractor Submittal Responsibilities



DB Contractor Responsibilities – Submittals



DB Contractor Submittals and TxDOT Actions



The Design-Build Contract Documents include Submittal tables identifying the Submittals the DB Contractor is required to submit and TxDOT actions.

Lists shown in this presentation are only informative and not a complete list

Submittals	Submittal Schedule	Department Action	Reference Section
Technical Working Group meeting minutes	Upon Request	For Information	Attachment 4-1
Pre-Submittal Workshop meeting invitations, supporting materials, and agendas	5 Business Days prior to the workshop	For Information	Attachment 4-1
Pre-Submittal Workshop meeting minutes	Upon Request	For Information	Attachment 4-1
Preliminary Design package	Prior to development of the Final Design package	Review and comment	Attachment 4-1
Design Exceptions and design standards deviations	Prior to Final Design Submittal	Approval	4.1.2.2.4, Attachment 4-1
Design Manager's certification	With RFC Documents	Concurrence	Attachment 4-1
Final Design Submittal	As Agreed upon with TxDOT	Review and comment	Attachment 4-1
RFC Documents	As Agreed upon with TxDOT	Concurrence	Attachment 4-1
Requests for Information and copies of Engineer of Record's determination of NDC	As necessary, Access to TxDOT prior to implementation	For Information	Attachment 4-1
Early Start of Construction procedures	Prior to Work	Approval	Attachment 4-1
List of proposed ESOC Submittal packages	Prior to submittal of the Design Submittal Packaging Plan	Approval	Attachment 4-1
ESOC Submittal packages	No later than 180 days after NTP2	Review and Comment	Attachment 4-1
Record Documents	Prior to Final Acceptance	For Information	Attachment 4-1
Manufacturers' warranties, guarantees, instruction sheets, parts lists, and other product data	With the Record Documents	For Information	Attachment 4-1

DB Contractor Responsibility – Prepare a Compliant Submittal



Conduct a
completeness
review

Conduct quality
control
review

Conduct quality
assurance
review

Ensure
consistency of
submittals



3. Design Submittal Process



Block Code	Limits of Workarea	Block No.	Description	Retaining Wall	Group No.	Code
000			General (Overall Project)	155		267
101				154	W102	264
101A		Block 1.01	Mill&Overlay [500+91.32 - 560+43.83]	120		263
101B		Block 1.01	(ITS, OHS, Illum) WA#1 + ITS connections	121	W104	263(2)
102	Work Area 1 From STA 500+47.5 to project End	Block 1.01	MOT WA #1	122		270
103		Block 1.02	Main street 1	130		268
104		Block 1.02	Main street 2	132	W105	269
105		Block 1.04	Main streets Retaining Walls	134		296
106		Block 1.05	Bridge 19	135		297
201A			Block 1.06	Bridge 20	137	W106
201B		Block 2.01	[183+25 - 366+00] Roadway	139		233
202A		Block 2.01	[183+25 - 264+00] Grading	275	W202	225
202B		Block 2.02	Area 1 Access [275+00 - 298+50] Roadway	285		223(2)
203		Block 2.02	[264+00-366+00] Grading	176		206
204		Block 2.03	Bridges 1A & 1B	183	W203	206(2)
205		Block 2.04	Bridge 2	177		207
206		Block 2.05	Bridges 3 and 3A	178		217
207		Block 2.06	Bridge 4A & 4B	214		219
208		Block 2.07	Bridge 5	215	W204	221
209		Block 2.08	Bridge 10A and 10B	216		209
210	Work Area 2 Project Start (STA 183+25) to STA 366+00	Block 2.09	Bridge 6	184		211
211		Block 2.10	Bridge 7	186		208
212		Block 2.11	Bridge 8	185	W205A	354
213		Block 2.12	Bridge 9	187		355
214		Block 2.13	Bridge 11	188		326
215		Block 2.14	WB Main street 3	223(1)	W205B	325
216		Block 2.15	EB Main street 3	204		372
217		Block 2.16	Main street 4	213		374
218		Block 2.17	Main street 5	205(1)		380
219		Block 2.18	Main street 6	205(2)	W206	371
220		Block 2.19	Bridge 21 & 21A	198		373
221		Block 2.20	Bridge 22	202		377
301	Work Area 3 STA 366+00 to STA 465+14.00	Block 2.21	Culvert (bridge class) at CWW5	203		379
302		Block 3.1	[366+00 - 465+14.00] Roadway	222		388
303		Block 3.2	Bridge 12	231	W207	382
303A		Block 3.3	Bridge 17	227		384
304		Block 3.3	Bridge 17 (A, B & C)	300(1)		390
305		Block 3.4	Bridge 15	300(2)	W208A	387
306		Block 3.5	Culvert (bridge class) at CWW3	309		460
307		Block 3.6	Bridge 13	310		461
308		Block 3.7	Bridge 14	323		462
		Block 3.8	Bridge 16			

CONTRACT REFERENCE
DB GC,
Attach 4-1,
QCP-02

Design Submittals Preparation

- Packaging Workshop
- Packaging Plan
- Submittal Schedule

Typical
Approach

— Packaging of single items or related
groups (e.g. one bridge package,
and related Ret Walls package)



CONTRACT REFERENCE
DB GC,
Attach 4-1,
QCP-05

Preliminary Design Submittal

CONTRACT REFERENCE
DB GC,
Attach 4-1,
QCP-06

Final Design Submittal

CONTRACT REFERENCE
DB GC,
Attach 4-1,
QCP-08

Released for Construction

CONTRACT REFERENCE
DB GC,
Attach 4-1,
QCP-04

Pre-Submittal Workshop and Q&A

- At TxDOT's direction, DB Contractor conducts a pre-Submittal workshop no later than five days before the scheduled date for each Final Design Submittal.



Regulatory Control

Allows TxDOT oversight of design and interim reviews of DB Contractor submittals.

Comment Period

Provides the opportunity for comment resolution, dialogue, and presentation of progress prior to submitting for formal TxDOT review.

Informal Feedback

Typically informal, non-binding review and comments by TxDOT.

Direct Engagement

Over-the-Shoulder Reviews work best when all entities are co-located.

Preliminary Design Submittal



TxDOT and PSQAM review the Preliminary Design Submittal concurrently and provide a consolidated set of review comments back to DB Contractor.

Final Design Submittal

Finalize applicable standards

Validate design concept constructability

Identify design and construction interfaces

Package should include/cover:

Certification by PSQCM, Design Manager, and PSQAM

Includes copies of TxDOT's approval of deviations and/or Design Exceptions

Includes design drawings, calculations, reports, Specifications, and General Notes



PSQAM reviews and certifies the Final Design Submittal first and then TxDOT. All PSQAF comments must be addressed before TxDOT receives the submittal for their review.

Released for Construction (RFC) Submittal



TxDOT and PSQAM review the RFC Submittal concurrently and provide a consolidated set of review comments back to DB Contractor.

Early Packages - Partial RFC Submittals



- Early submittal packages that are part of RFC packages that receive TxDOT written concurrence
- Follows RFC package submittal requirements
- Can be used for any project element
- Should be pre-identified and included in Design Submittal Packaging Plan and Project Schedule
- Requires special attention and production pre-planning

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DESIGNED	FED. RD. DIST. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
DRAWN	6	(SEE TITLE SHEET)	
CHECKED	STATE	DISTRICT	COUNTY
APPROVED	CONTROL	SECTION	JOB
			0508208

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APPROVED	CONTROL	SECTION	JOB
			0508208

ISSUE RECORD		
NO.	DESCRIPTION	DATE
A0	PRELIMINARY	12/09/2021
A	PRELIMINARY PART 2	03/14/2022
B	FINAL DESIGN - EARLY PACKAGE	06/03/2022
00	AFC - EARLY PACKAGE	07/15/2022
0C	FINAL DESIGN	09/09/2022
01	NDC-000 ■ - AFC FULL PACKAGE	12/05/2022

Required Certifications



	PSQCM	Design Manager	PSQAM
Preliminary Design Submittal	<input checked="" type="checkbox"/>		
Final Design Submittal	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
RFC Submittal	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Design Changes after RFC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Early Start of Construction (ESOC)

- ESOC packages are early work packages released by the DB Contractor for construction that do not receive TxDOT written concurrence.
 - Permanent Work in ESOC packages is later incorporated into RFC packages which then receive TxDOT concurrence.
- Can be either temporary or permanent work
- ESOC packages are not RFC submittals and are prepared at the DB Contractor's risk.

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TEMPORARY PAVEMENT MARKING ARROW/WORD "ONLY"

EARLY START OF CONSTRUCTION

By: **current Control**
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CONSTRUCTORS

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5/9/2022

STATE OF TEXAS
LICENSED PROFESSIONAL ENGINEER

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FILE NAME:	DESIGNED	FED. RD. DIST. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
CONTROL:	DRAWN	6	(SEE TITLE SHEET)	
DESIGN PACKAGE:	CHECKED	STATE	DISTRICT	COUNTY
SHEET:	APPROVED	TEXAS		
		CONTROL	SECTION	JOB
				SHEET NO. 02114008



Early Start of Construction (ESOC)

- The DB GC includes a list of elements eligible for inclusion in ESOC packages
- ESOC packages must be pre-identified and included in Design Submittal Packaging Plan and Project Schedule
- Preliminary and Final ESOC submittals are required
- DB Contractor and TxDOT agree on a process for addressing review comments
 - Comments relating to health and safety must be addressed prior to release of the package.

Early Start of Construction Requirements

The requirements below set forth the circumstances under which certain items, elements, or phases of the Work may be packaged by DB Contractor to initiate an Early Start of Construction prior to obtaining TxDOT's concurrence with respect to the RFC Submittal containing the item, element or phase.

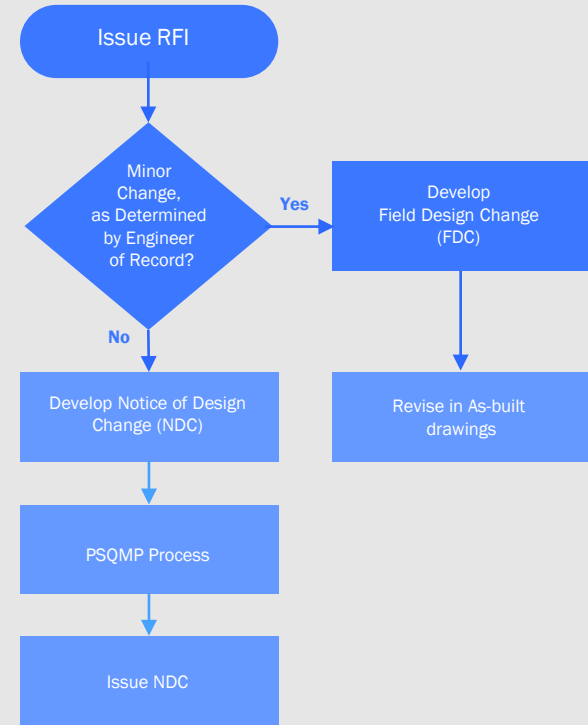
Only the following list of elements are eligible for inclusion in the list of ESOC packages, subject to TxDOT approval, in TxDOT's good faith discretion, prior to submittal of the Design Submittal Packaging Plan:

- [Rough Grading
- Prep ROW
- Drainage
- SW3P
- Utilities
- Demo/Removal Plans
- Temporary Pavement
- Temporary Drainage]



Design Changes during Construction

- Design changes after TxDOT concurrence of the RFC Submittal
- DB Contractor starts the process by sending an RFI to the Design Consultant's EOR
 - EOR evaluates the RFI and determines if the requested change is a Minor or a Major Change
 - Minor – Change need not initiate a design change or modified calculations – Make the change in As-Built Drawings, and then Record Drawings
 - Major – Design change requires redesign or modified calculations – EOR issues a Notice of Design Change (NDC)
- Design changes can be initiated by the DB Contractor and DB Contractor's Design Consultant by issuing a Notice of Design Change (NDC)



Notice of Design Change (NDC)



- If the EOR determines the requested change is a major change then the EOR issues a Notice of Design Change (NDC).

- **The purpose of an NDC is:**

- 1** Notify all parties of an intended/ upcoming design change
- 2** Identify the RFC sheets/documents that will be impacted by the design change
- 3** Make the construction team aware of the intended change

Design changes made under the NDC procedure go through the same design checks and quality procedures as the original design

Field Design Change (FDC)



- If the EOR determines the requested change is a minor change then the EOR transfers the change from the RFI to the as-built drawings.

- **Minor design changes are Field Design Changes (FDC) that:**

- 1** Do not need specialized expertise to make the change
- 2** Are not in nonconformance with the Project requirements
- 3** Do not materially affect design intent

The Design team maintains an FDC log of minor changes to verify completeness of the as-builts



4. Record Documents and Plans



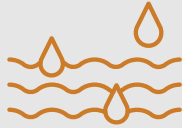
Record Documents and Plans

Record Plans include Record Drawings and supporting calculations and details

Calculations Supporting Examples:



Pavement design



Drainage calculations



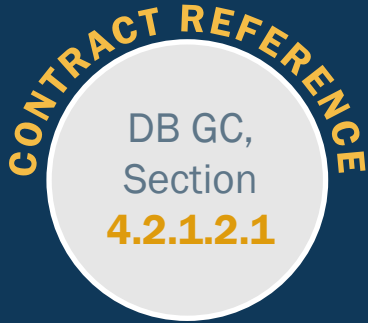
Bridge design calculations

- Reflect the actual condition of constructed work
- Include a complete 3-D design model of the final constructed Project
- Include reports documenting the location of the as-built alignments, profiles, structure locations, utilities, and survey control monuments

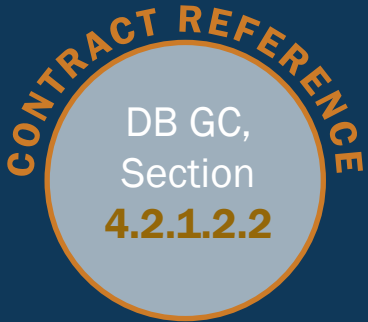


5. General Submittal Guidelines





- Metadata for the submittal contents are provided for each submittal with revisions or resubmittals clearly referenced





- Submittals include a cover/transmittal letter clearly detailing the content of the submittal
- Submittals are sequentially numbered with revisions or resubmittals clearly indicated



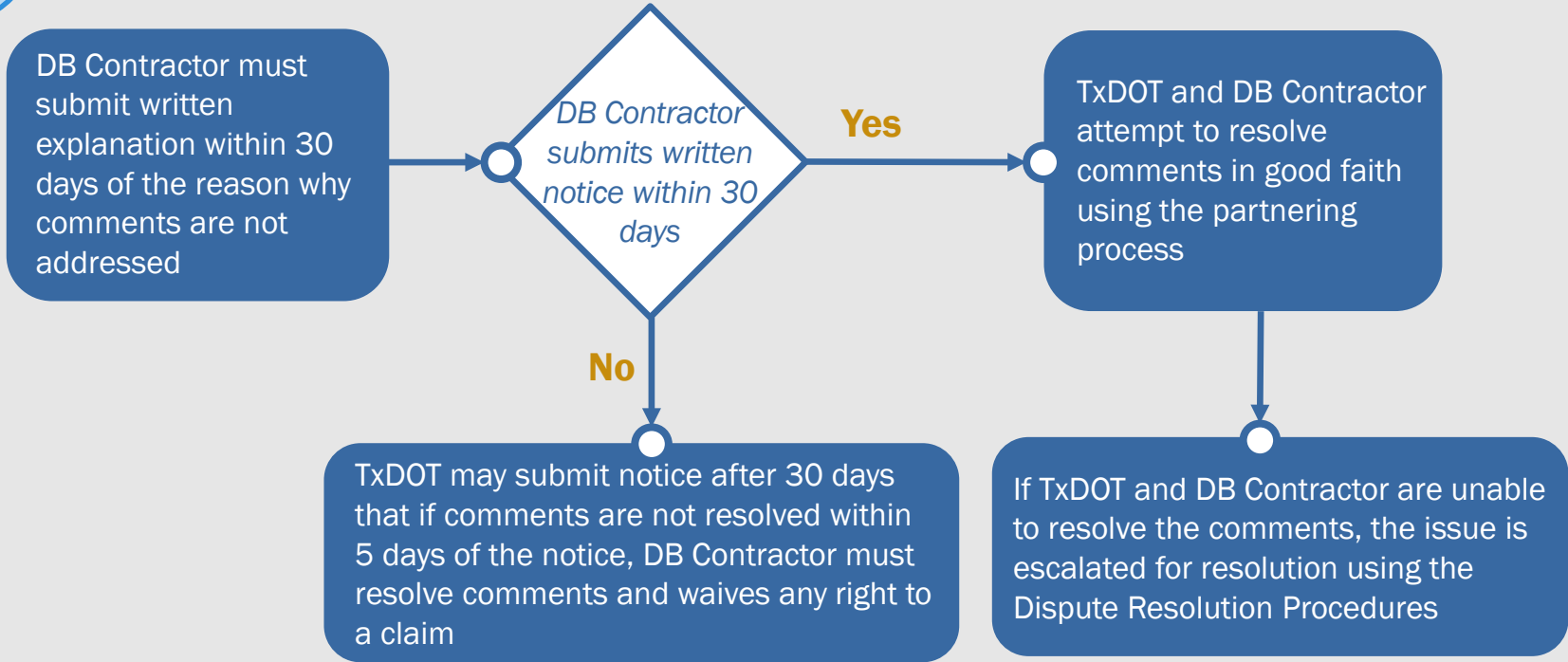
6. Resolution of Comments





- Review all comments received on submittals in a timely manner.
- Typical DB Contractor's responses to review comments are:
 - ✓ **Agree** – Need not be discussed in Comment Resolution Meeting (CRM)
 - ✗ **Disagree (or Rejected)** – Should be discussed in CRM
 -  **Need Further Clarification** – Should be discussed in CRM
 -  **Deferred (to next design submittal)** – Should be discussed in CRM
- Need to have resolution to the “Disagree” and “Need Further Clarification” responses in the CRM.

Resolution of Comments Flowchart





8. Take Aways







HELP #EndTheStreakTX

End the streak of daily deaths on Texas roadways.

TxDOT.gov (Keyword: #EndTheStreakTX)



#EndTheStreakTX Toolkit

