Design-Build Project

Design and Submittal Review Process

Alternative Delivery Program

Rev. 01
Release Date: 04/30/2024

Design and Submittal Review Process

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

Design and Submittal Review Process

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

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

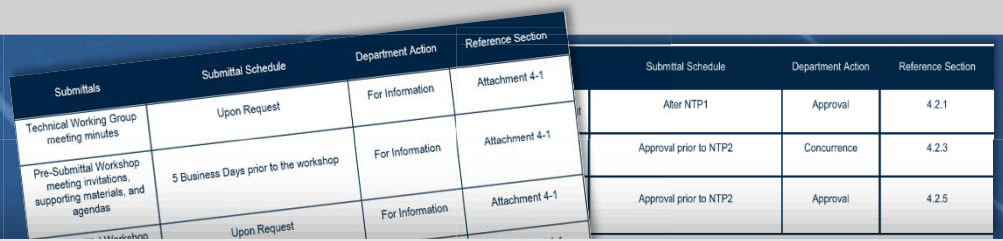
TxDOT Review – Must Knows

- **Types of Submittals**
- **Types and Duration of TxDOT Reviews**
- **Timing of Submittals –**
  Max number of concurrent submittals
- **Comments and Review Outcome**

Types of Submittals

CONTRACT REFERENCE

DB GC,
Table 4-2
Table 4-3



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,
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 f Construction
- 3rd Party Submittal Packages

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

General Reviews and Information Only

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

General Review

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

Information Only

- Quality records
- Information shared with public

Submittal Reviews - Approval

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

Submittal Reviews – Concurrence

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

CONTRACT REFERENCE
DB GC, **Section 1.2.2**

CONTRACT REFERENCE
DB Specs, **Section 21.2.1.1**

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

CONTRACT REFERENCE

DB GC, **Section 5.2**

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.

Timing of Submittals

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

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DB Contractor Responsibilities – Submittals

DB Contractor Submittals and TxDOT Actions

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

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

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Block Code	Limits of Workarea	Block No.	Description
000			General (Overall Project)
101	Work Area 1 From STA 500+47.5 to project End	Block 1.01	Mill&Overlay [500+91.32 - 560+43.83]
101A		Block 1.01	(ITS, OHS, Illum) WA#1 + ITS connections
101B		Block 1.01	MOT WA #1
102		Block 1.02	Main street 1
103		Block 1.03	Main street 2
104		Block 1.04	Main streets Retaining Walls
105		Block 1.05	Bridge 19
106		Block 1.06	Bridge 20
201A	Work Area 2 Project Start (STA 183+25) to STA 366+00	Block 2.01	[183+25 - 366+00] Roadway
201B		Block 2.01	[183+25 - 264+00] Grading
202A		Block 2.02	Area 1 Access [275+00 - 298+50] Roadway
202B		Block 2.02	[264+00- 366+00] Grading
203		Block 2.03	Bridges 1A & 1B
204		Block 2.04	Bridge 2
205		Block 2.05	Bridges 3 and 3A
206		Block 2.06	Bridge 4A & 4B
207		Block 2.07	Bridge 5
208		Block 2.08	Bridge 10A and 10B
209		Block 2.09	Bridge 6
210		Block 2.10	Bridge 7
211		Block 2.11	Bridge 8
212		Block 2.12	Bridge 9
213		Block 2.13	Bridge 11
214		Block 2.14	WB Main street 3
215		Block 2.15	EB Main street 3
216		Block 2.16	Main street 4
217		Block 2.17	Main street 5
218		Block 2.18	Main street 6
219		Block 2.19	Bridge 21 & 21A
220		Block 2.20	Bridge 22
221		Block 2.21	Culvert (bridge class) at CWW5
301	Work Area 3 STA 366+00 to STA 465+14.00	Block 3.1	[366+00 - 465+14.00) Roadway
302		Block 3.2	Bridge 12
303		Block 3.3	Bridge 17
303A		Block 3.3	Bridge 17 (A, B & C)
304		Block 3.4	Bridge 15
305		Block 3.5	Culvert (bridge class) at CWW3
306		Block 3.6	Bridge 13
307		Block 3.7	Bridge 14
308		Block 3.8	Bridge 16

Retaining Wall Group No. Code			
155	W102	267	W212
154		264	
120	W104	263	
121		263(2)	
122		270	
130	W105	268	
132		269	
134		296	W213
135	W106	297	
137		298	W214A
139		233	
275	W202	225	W214B
285		223(2)	
176	W203	206	
183		206(2)	
177		207	W216
178		217	
214	W204	219	
215		221	W220
216		209	
184	W205A	211	
186		208	W301A
185		354	
187		355	
188	W205B	326	W301B
223(1)		325	
204	W206	372	W301C
213		374	
205(1)		380	
205(2)		371	W301D
198		373	
202		377	
203		379	
222	W207	388	W303A
231		382	
227		384	
300(1)	W208A	390	
300(2)		387	W303B
309		460	W401A
310		461	
323		462	

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-02**

Design Submittals Preparation

- Packaging Workshop
- Packaging Plan
- Submittal Schedule

Design Phase Submittals

Preliminary Design Submittal

Final Design Submittal

Released for Construction

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.

Over-the-Shoulder Reviews

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.

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

Preliminary Design Submittal

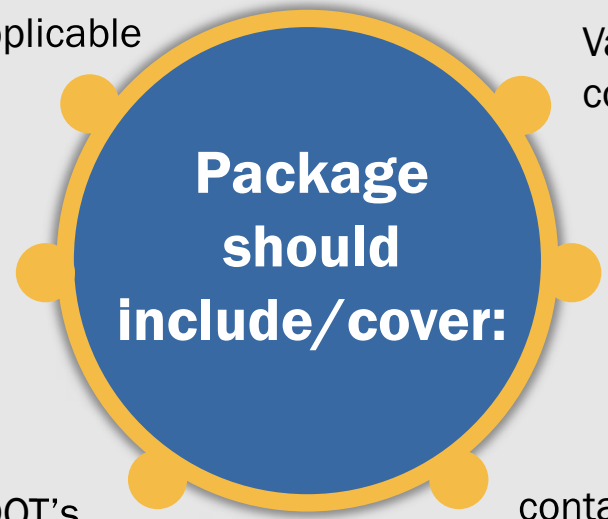
Package should include/cover:

- Identify applicable standards
- contains design drawings, Specifications, and reports
- Verify Project ROW requirements
- Validate design concept and constructability
- Substantiate design concepts
- Design Manager review and PSQCM certification
- Identify design and construction interfaces

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

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

Final Design Submittal



Finalize applicable standards

Validate design concept constructability

Identify design and construction interfaces

Certification by PSQCM, Design Manager, and PSQAM

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

contains 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.

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

Released for Construction (RFC) Submittal

Package should include/cover:

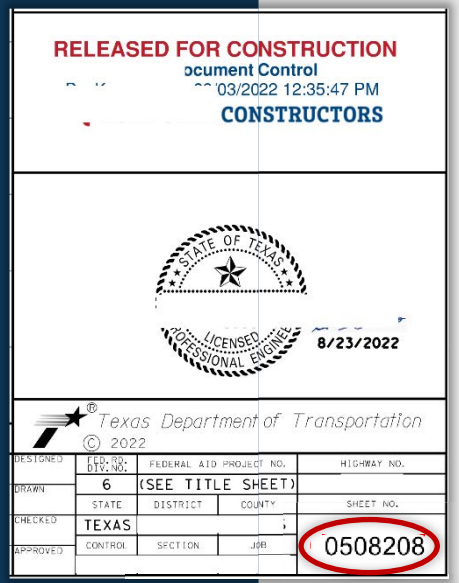
- Signed and sealed by Engineer of Record
- Resolves/addresses any previously deferred comments
- Ensures all contractual requirements are met
- Required for all construction work that will be permanently incorporated
- Detailed, complete, and constructible
- Addresses all Stakeholders comments

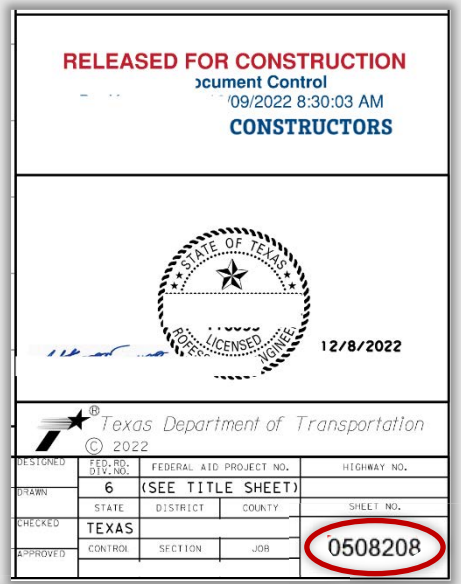
Addresses all Final Design Submittal review comments provided by TxDOT and PSQAM prior to submitting the RFC package

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





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

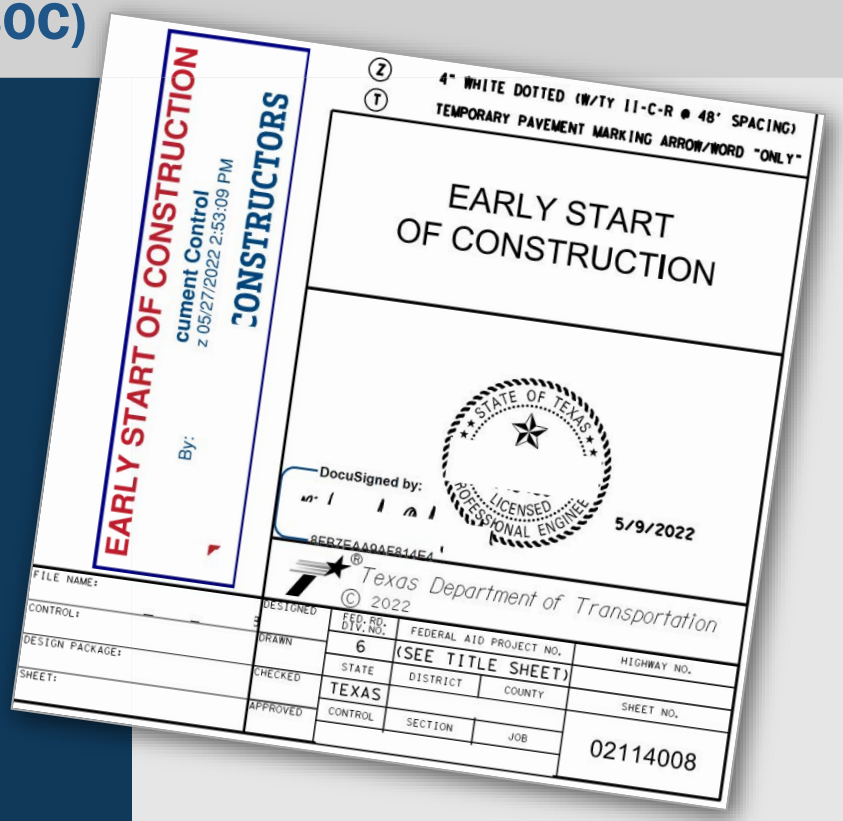
Required Certifications

	PSQCM	Design Manager	PSQAM
Preliminary Design Submittal	✓		
Final Design Submittal	✓	✓	✓
RFC Submittal	✓	✓	✓
Design Changes after RFC	✓	✓	✓

CONTRACT REFERENCE
DB GC, Attach 4-1, **QCP-11**

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.



CONTRACT REFERENCE
DB GC, Attach 4-1, QCP-11

Early Start of Construction (ESOC)

- The DB GC contains a list of elements eligible to be included 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.

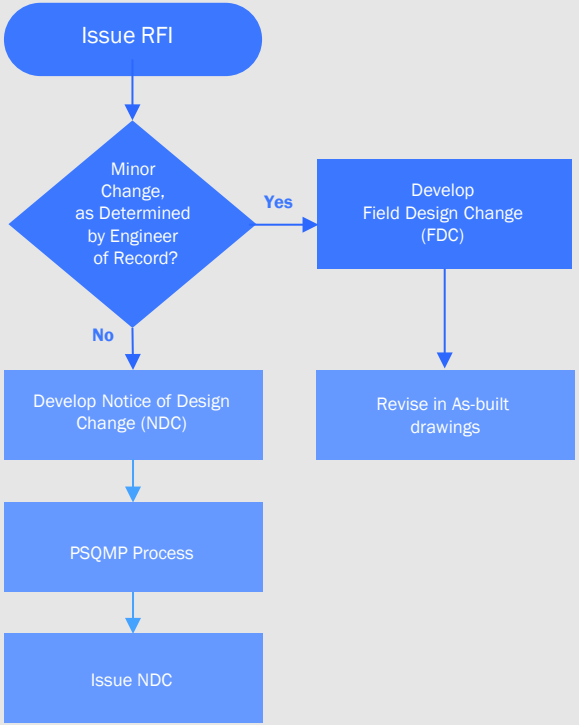
Only the following list of elements are eligible for inclusion in the list of ESOC packages, subject to TxDOT approval, in TxDOT's good faith discretion, prior to submittal of the Design Submittal Packaging Plan:

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

CONTRACT REFERENCE
DB GC, Attach 4-1, **QCP-10**

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)



CONTRACT REFERENCE
DB GC, Attach 4-1, **QCP-10**

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

CONTRACT REFERENCE
DB GC, Attach 4-1, **QCP-10**

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

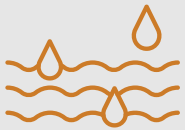
CONTRACT REFERENCE
DB GC, Attach 4-1, **QCP-13**

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

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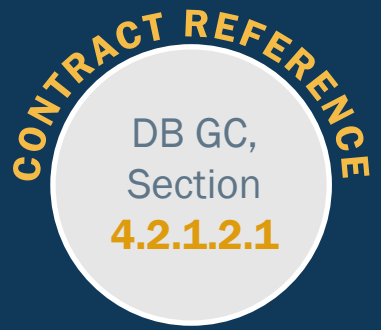
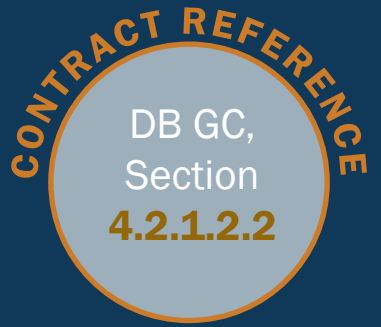
General Submittal Guidelines



- 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

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Resolution of Comments

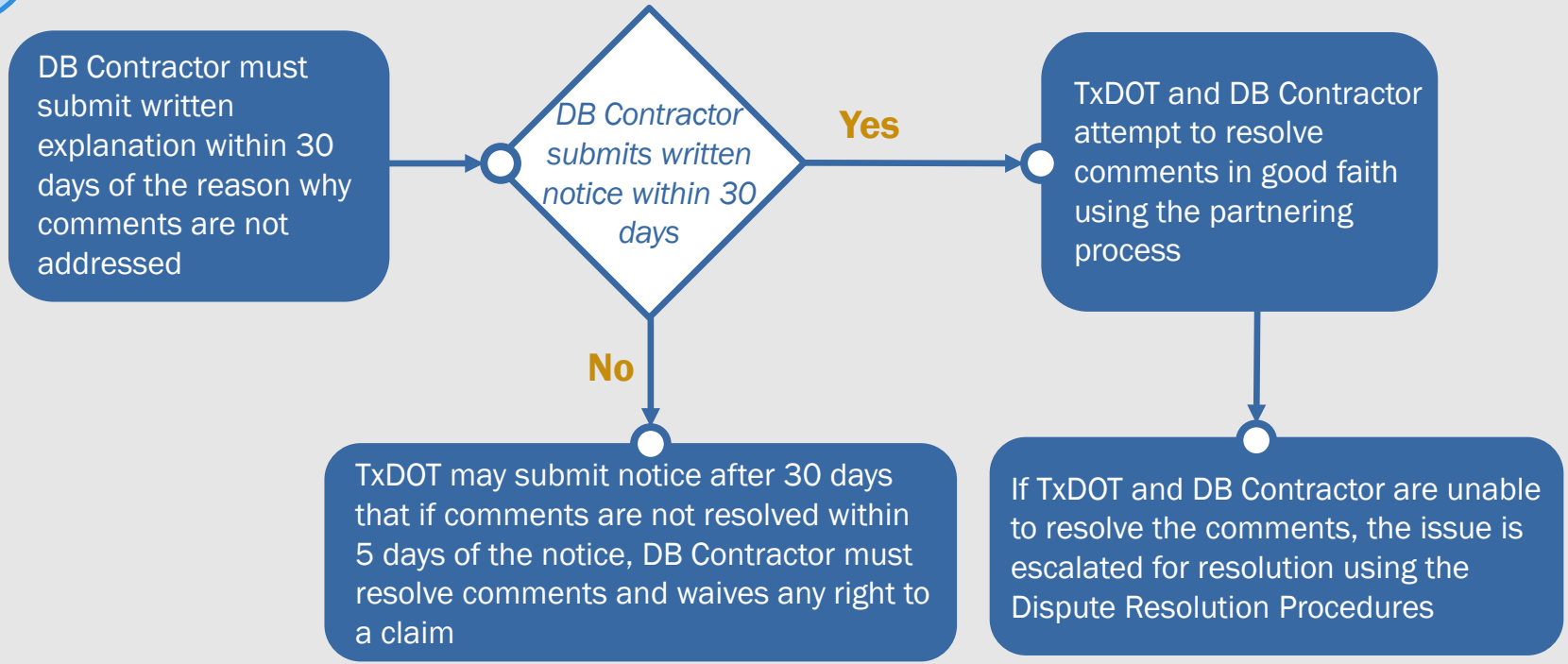
- Review all comments received on submittals in a timely manner.

- 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.

CONTRACT REFERENCE
DB GC, **Section 5.2.1.7**

Resolution of Comments Flowchart



8. Take Aways

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Key Take Aways

1. Design Submittal Packaging Plan and Submittal Schedule is a critical planning tool
2. Work must be complete with QC/QA documentation before submitting to TxDOT and the PSQAM
3. Must provide required certifications
4. Understand type of submittal and type of review required
5. Define when and if work is subject to payment
6. Take a “no surprises” approach to submittal timing
7. Over communicate design submittal schedule
8. Ask questions and discuss challenges early, especially with critical submittals such as the PMP, QMP, and baseline schedule updates
9. Use “over the shoulder” reviews leading up to submittal


HELP
#EndTheStreakTX
End the streak of daily deaths on Texas roadways.
TxDOT.gov (Keyword: #EndTheStreakTX)
#EndTheStreakTX Toolkit