



Shop Drawing Highlights



August 15, 2025

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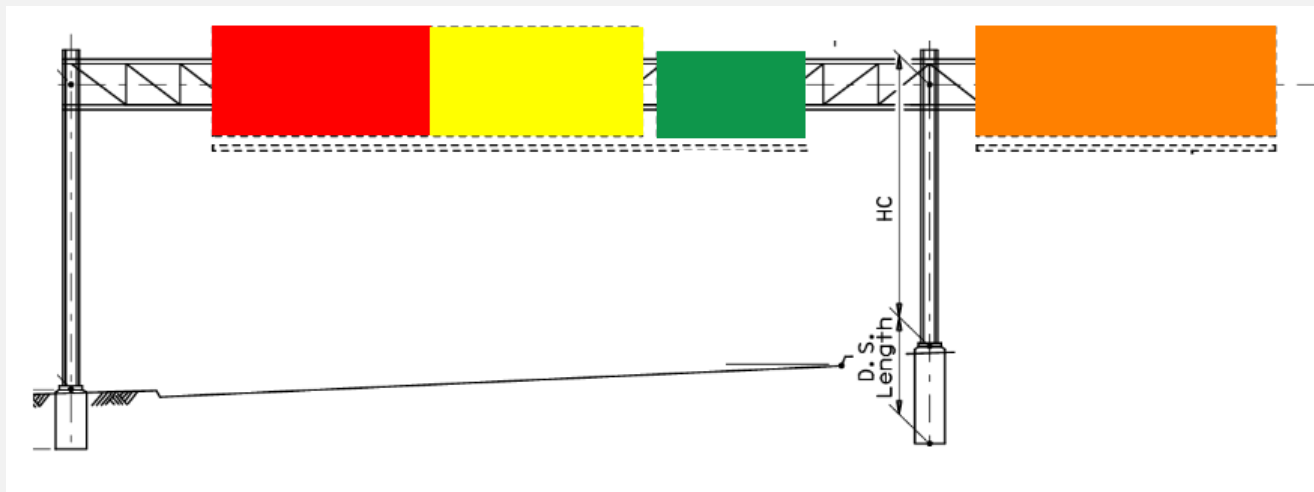
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Shop Plan Game!

Test: What color comes to mind when you think of Shop Drawings?

- A. Red
- B. Yellow
- C. Green
- D. Orange



Do I need a shop plan?

Where is the first place to look for information on what items on my project need shop drawings?

- A. Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges
- B. Highway Illumination Manual
- C. Guide to Electronic Shop Drawing Submittal
- D. Sign Guidelines and Applications Manual

Do I need a shop plan?

A. Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges

- 3.2. **Shop Drawings.** Electronically submit shop drawings for overhead sign supports in accordance with Item 441. Include details for anchor bolts, highway and dynamic message sign sizes and positions, walkways, and other required attachments on shop drawings.

Submit only one drawing for two or more supports of identical design and dimensions.

Guidance Documents

Future publications of the Guide to Electronic Shop Drawing Submittal will be called...

- A. Shop Drawing Submittal Manual
- B. How to Submit Shop Drawings
- C. Guide to Electronic Shop Drawing Submittals
- D. Guide to Shop Drawing Submittals

Guidance Documents

D. Guide to Shop Drawing Submittals

Who Should Review It First?

All of these people can approve a shop drawing submittal, but who should review it first if they're available?

- A. Area / District Office
- B. Bridge Division – Shop Plan Review Section
- C. Engineer of Record (EOR)
- D. Whoever can review it the fastest!

Who Should Review It First?

C. Engineer of Record (EOR)

Who Should Review It First?

- **Why this matters:**

Volume of shop drawing submittals that are being routed to the Bridge Division-Shop Plan Review are higher than ever—even when others are available.

- **The problem:**

This creates bottlenecks and delays, especially when the section receiving all submittals isn't the most technically suited to review them first.

- **The better approach:**

If multiple reviewers are available, prioritize the **Engineer of Record**. They have the technical expertise to catch issues early, which helps avoid rework and keeps the process moving.

- **Key takeaway:**

Use the full team. If meeting a deadline is important, consider routing submittals to other qualified reviewers instead of defaulting to one section.

Who is involved?

In addition to the Reviewer, all the following parties are involved with the shop plan review process EXCEPT:

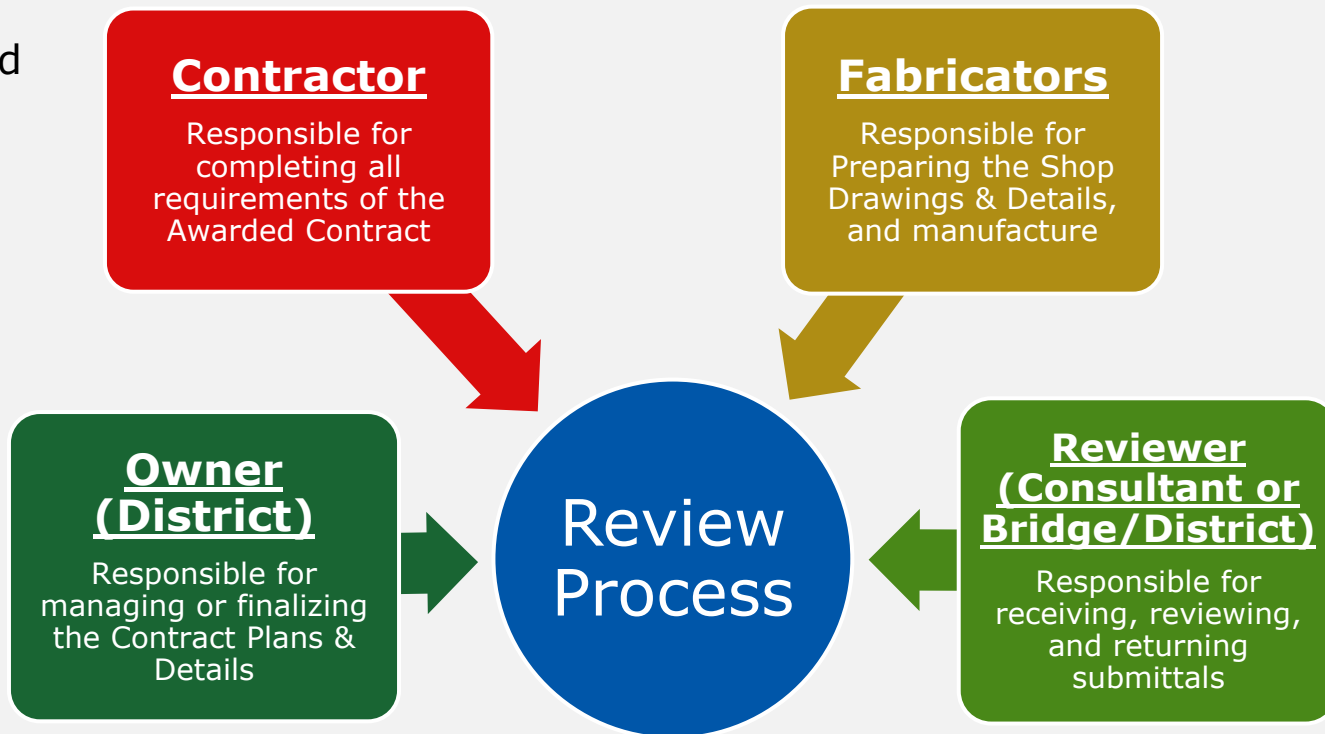
- A. Shop Plan Planner
- B. Contractor
- C. Owner
- D. Fabricator

Who is involved?

A. Shop Plan Planner

The Review Process

The parties involved
with the Review
Process:



Who Do I Send the Drawings To?

You're sending out drawings for review. How do you know who they should go to?

- A. Flip a coin and hope for the best
- B. Check the General Notes
- C. Ask Bridge Division
- D. Send it to whoever emailed you last

Who Do I Send the Drawings To?

B. Check the General Notes

Who Do I Send the Drawings To?

County: Harris
Highway: I-10

Sheet 398
Control: 0271-07-326

Schedule work so that the base placement operations follow the subgrade work as closely as practical to reduce the hazard to the traveling public and to prevent undue delay caused by wet weather.

This project requires extensive grading operations in an environmentally sensitive area.

If relocating mailboxes, place them with the post firmly in the ground at nearby locations. Upon completing the project, the Engineer will locate the final mailbox placement. Perform this work in accordance with the requirements of the Item, "Mailbox Assemblies," except for measurement and payment. This work is subsidiary to the various bid items.

If fences cross construction easements shown on the plans and work is required beyond the fences, remove and replace the fences as directed. This work and the materials are subsidiary to the various bid items.

When design details are not shown on the plans, provide signs and arrows conforming to the latest "Standard Highway Sign Designs for Texas" manual.

General: Utilities

Consider the locations of underground utilities depicted in the plans as approximate and employ responsible care to avoid damaging utility facilities. Depending upon scope and magnitude of planned construction activities, advanced field confirmation by the utility owner or operator may be prudent. Where possible, protect and preserve permanent signs, markers, and designations of underground facilities.

If the Contractor damages or causes damage (breaks, leaks, nicks, dents, gouges, etc.) to the utility, contact the utility facility owner or operator immediately.

Be aware that an operational Computerized Transportation Management System (CTMS) exists within the limits of this project and that the system must remain operational throughout construction. If the Contractor damages or causes damage to this system, repair such damage within 8 hours of occurrence at no cost to the Department. In the event of system damage, notify the Director of Traffic Management Systems at 713-881-3283 within one hour of occurrence. Failure of the Contractor to repair damage to the main fiber optic cable and CCTV cable trunk lines, which convey all corridor information to TransStar, will result in the Contractor being billed for the full cost of emergency repairs.

At least 72 hours before starting work, make arrangements for locating existing Department-owned above ground and underground fiber optic, communications, power, illumination, and traffic signal cabling and conduit. Do this by calling the Department's Houston District Traffic Signal Operations Office at 713-862-5662, or by e-mailing the Department's Houston District Traffic Signal Operations Office at: HDOT.HoustonRegion@tdot.org, to schedule marking of underground lines on the ground. Use caution if working in these areas to avoid damaging or interfering with existing facilities.

Notify the Engineer at least 48 hours before constructing junction boxes at storm drain and utility intersections.

General Notes

Sheet E

County: Harris
Highway: I-10

Sheet 398
Control: 0271-07-326



Install or remove poles and luminaires located near overhead or underground electrical lines using established industry and utility safety practices. Consult the appropriate utility company before beginning such work.

If overhead or underground power lines need to be de-energized, contact the electrical service provider to perform this work. Costs associated with de-energizing the power lines or other protective measures required are at no expense to the Department.

If working near power lines, comply with the appropriate sections of Texas State Law and Federal Regulations relating to the type of work involved.

Perform electrical work in conformance with the National Electrical Code (NEC) and Department's standard sheets.

Before beginning any underground work, notify the City of Houston's Chief Inspector, Public Works and Engineering, to establish the locations of any existing electrical systems for lighting facilities within the limits of this project.

Item 5: Control of Work

Before contract letting, cross-section data for this project will be available to the prospective bidders in PDF format on the Department's Houston District website located at:

<https://the.tdot.state.tx.us/pw/contract-info/Procurement%20Resources/Houston%20District/Construction%20Project/>

The cross-section data provided above is for non-construction purposes only and it is the responsibility of the prospective bidder to validate the data with the appropriate plans, specifications, and estimates for the projects.

Submit shop drawings electronically for the fabrication of items as documented in Table 2 below. Information and requirements for electronic submittals can be viewed in the

"Guide to Electronic Shop Drawing Submittal" which can be accessed through the following web link: https://ftp.tdot.gov/pub/tdot-info/library/pubs/bos/bosbridge/c_submitt_guide.pdf. References to 11 in. x 17 in. sheets in individual specifications for structural items imply electronic CAD sheets.

Table 2

Spec Item No.'s	Product	Submittal Required	Approval Required (Y/N)	Contractor Fabricator P.E. Seal Required	Reviewing Party	Shop or Working Drawing Note
F 08.18.2	Construction Used Analysis	Y	Y	Y	D	WD
400	Evaluation and Details for Structures (Superstructure)	Y	N	Y	D	WD
401	Temporary Erection, Shoring	Y	N	Y	D	WD
402	Temporary Erection	Y	N	Y	D	WD
423	Retaining Walls, Gates, and L	Y	Y	Y	D	SD
425	Optional Design Calculations (Drawings)	Y	Y	Y	D	SD
426	Final Shop Sheet Piling	Y	Y	N	D	SD

General Notes

Sheet F

The video shows where in the General Notes you can find who is responsible for what. However, if this information isn't provided in the plan set or is unclear, we recommend discussing it during pre-construction meetings.

Who Do I Send the Drawings To?

I have verified the need to send my drawings to Bridge Division for review. What is the email address?

- A. ShopPlans_BRG@txdot.gov
- B. BRG_Design@txdot.gov
- C. Courtney.Holle@txdot.gov
- D. BRG_ShopPlanReview@txdot.gov

Who Do I Send the Drawings To?

D. BRG_ShopPlanReview@txdot.gov

Double-Check: It's Not Just for Daily Life

True or False. There is a specific format for shop plan submittals emails

A. True

B. False

Double-Check: It's Not Just for Daily Life

A.True

Double-Check: It's Not Just for Daily Life

From: cguerrera@detb.net (A)

To: BRG_ShopPlanReview@ttdot.gov (C)

Subject: 1802-03-163 Nueces IV FabA.DetB 1 (D)

Letting Date: 3/2003
 County: Nueces
 CS#: 1802-03-163
 District: Corpus Christi
 Project: BR 2002(282)
 Structure Name(s): Copano Creek Bridge
 Road (Hwy): CR361
 Fabricator: Fabricator "A" (FabA)
 Fabricator Job No.: 2402-2
 Contractor: Contractor "C" (ConC)
 Detailing Entity: Detailer "B" (DetB)
 Detailer Job No.: 03-317
 Design Entity: BRG DIV
 Product(s): Type IV beams
 Sheet Listing: 1, 2, 22, 23-25, 26-27
 No. Sheets: 15
 No. "O.D.s": 2
 Change Order(s): None
 Submission Method: Email (E)

Attn: Jeffrey G. Gotham, P.E.
BrG_ShopPlanReview@ttdot.gov
 TxDOT Bridge Division Fabrication Branch
 200 E. Riverside Drive
 Austin, Texas 78704

Attached for your review is one set of shop drawings for the above mentioned project and product(s). These drawings are for your review and approval prior to fabrication of the items stated herein. Please return reviewed plan sets to:

"Primary Recipient"
 Detailing Ofc: Charles C. Guerrero (Det "B")
cguerrera@detb.net (F)

"Carbon Copy Recipients" ("CC")
 Fabricator: Howard Blakely, P.E. (Fab. "A")
hblakely@fab.com
 Contractor: John Smith, III (Con. "C")
jsmith@ttdot.gov
 District dedicated shop plan address: CRP_ShopPlanReview@ttdot.gov
 TxDOT Personnel (as directed by the District): Jane Jones, P.E.
jane.jones@ttdot.gov
 Tollroad Authority: H.R. Brewer (Hank Simon Tollroad)
hbrewer@HAT.com

Attachment: 0182-03-163 Nueces IV FabA.DetB 1.pdf (G)
 0182-03-163-001-2.pdf
 018203163_001-2 detb.rgs

(A) = Fabricator or Detailing office
 (B) = Required CC recipients; typically:
 - District dedicated shop plan address (cause for rejection if omitted)
 - TxDOT personnel as directed by the District
 - Contractor
 - Fabricator, if different from the Detailing office
 (C) = Reviewer
 (D) = Subject- adhere to required format
 (E) = Email body format (project and submittal specific info for database log)
 (F) = Identify all addressees
 (G) = Attachments- pdf name matches subject line format

Double-Check: It's Not Just for Daily Life

What information should you double check on your submittals?

- A. Project CSJ is correct
- B. Which recipients are cc'd
- C. Did I include attachments?
- D. Everything!

Double-Check: It's Not Just for Daily Life

D. Everything!

Double-Check: It's Not Just for Daily Life

- We double-check things all the time in our daily lives—because we know small mistakes can lead to big headaches. The same principle applies to submittals.
- Taking a moment to review your work before submitting or resubmitting helps catch avoidable errors, ensures requested changes are addressed—and nothing more—and keeps the process professional and efficient.



Process Order

What would the correct submittal order for an alternate COSS or OSB?

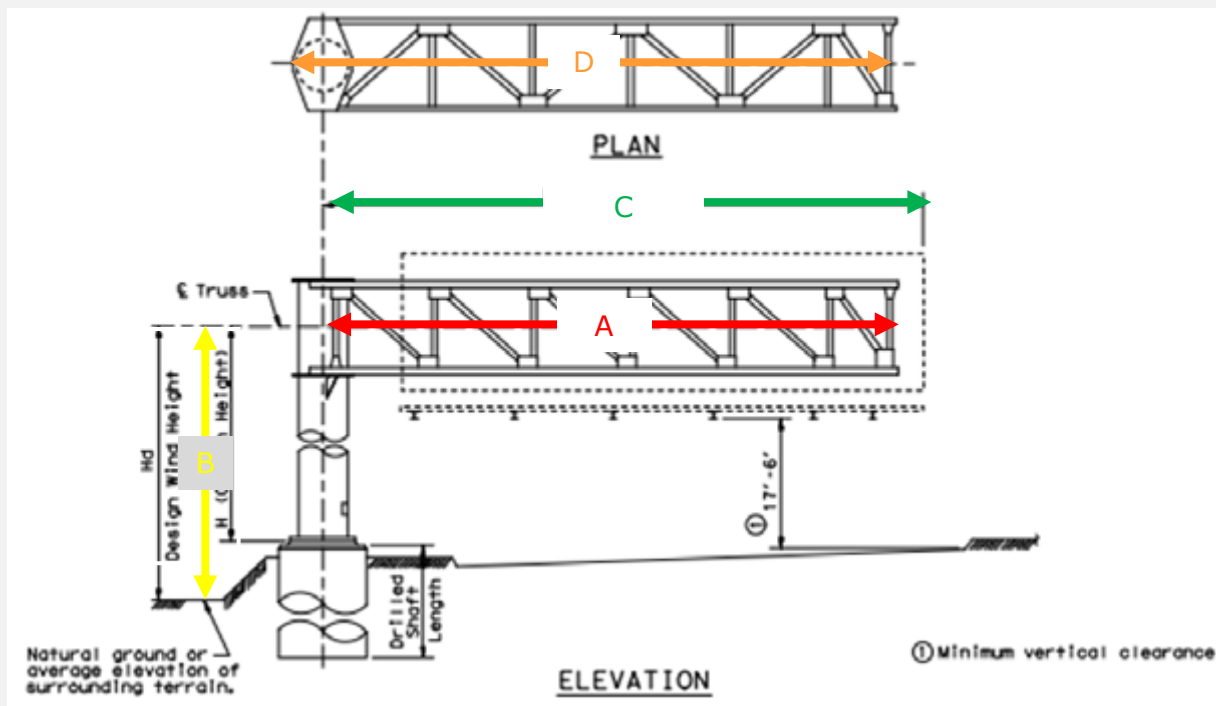
- A. Sign Bridge Submittal → Anchor Bolt Submittal → Alternate Design Calcs
- B. Alternate Design Calcs → Anchor Bolt Submittal → Sign Bridge Submittal
- C. No shop drawings required
- D. Submit alternate design calcs and all shop plans at the same time

Process Order

B. Alternate Design Calcs → Anchor Bolt
Submittal → Sign Bridge Submittal

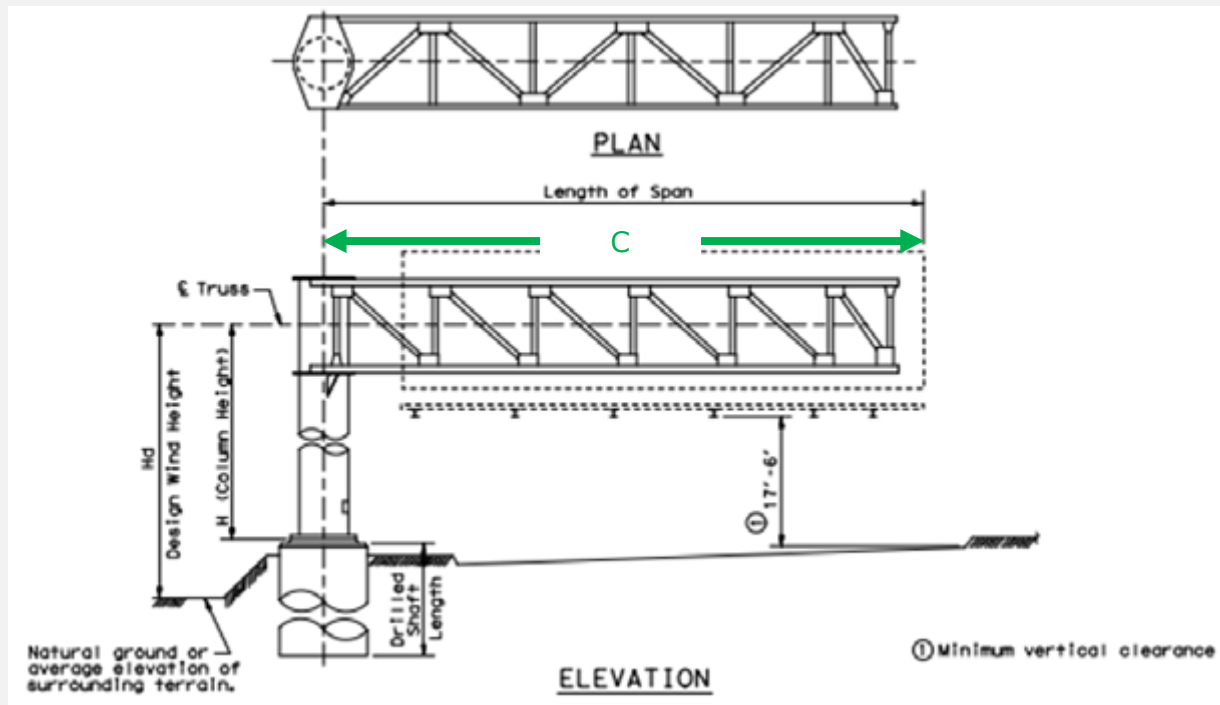
Span Length

What is the correct dimension for the span length?

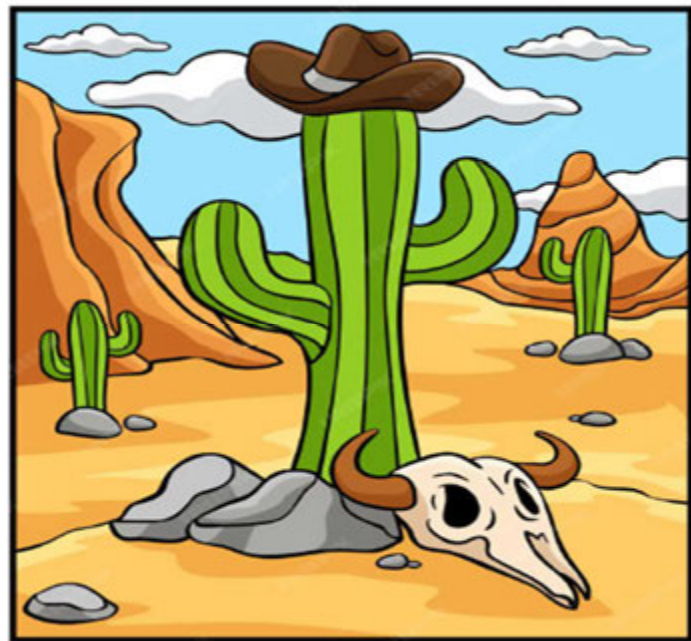
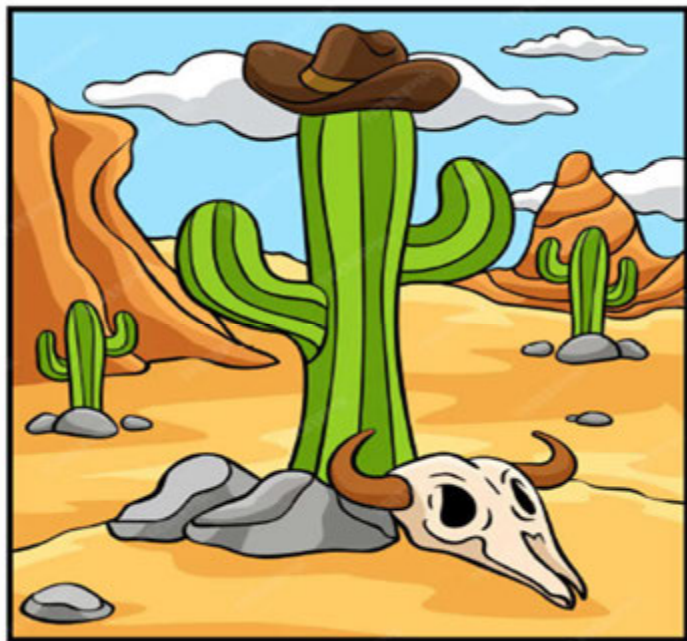


Span Length

- Length of Span is from the CENTERLINE of the column/tower to the OUTSIDE edge of the sign (which normally overhangs the truss), up to a maximum of 40 feet

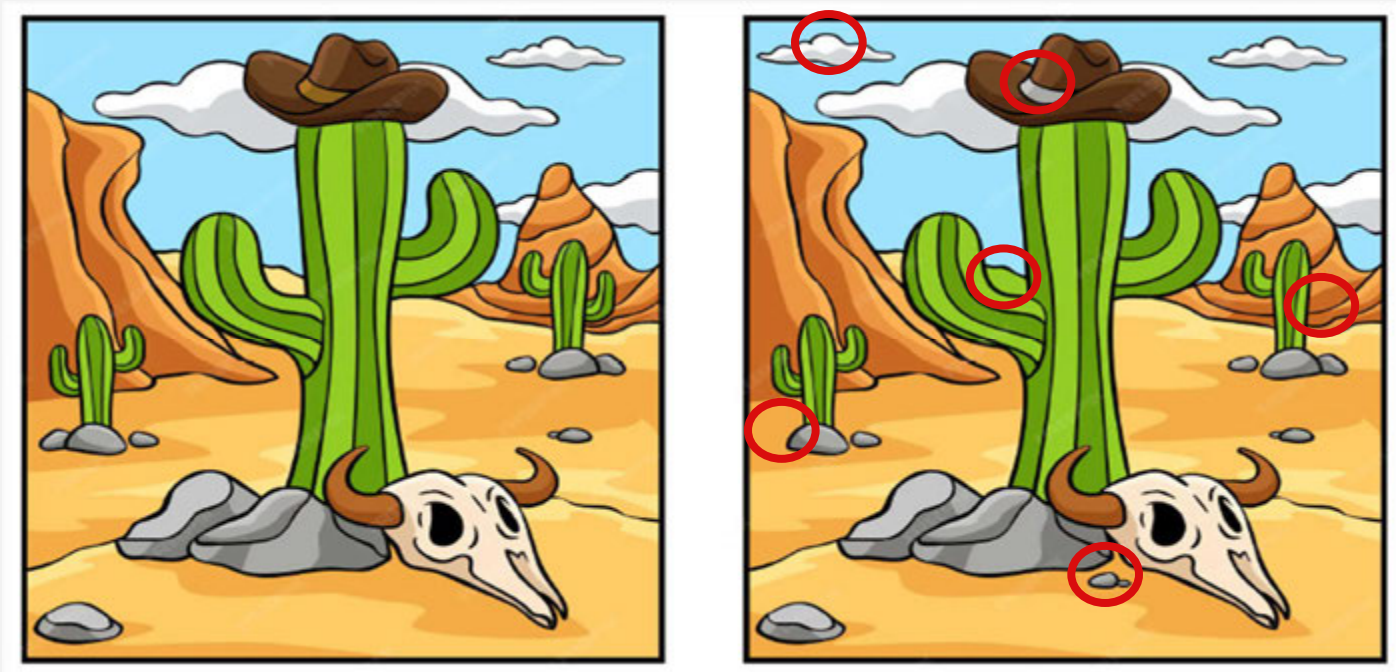


Small Deviations, Big Delays



How many differences can you spot? A.1 B.3 C.6 D.10

Small Deviations, Big Delays



C. 6

Small Deviations, Big Delays

Why It Matters:

Even minor deviations from standard requirements can be difficult to spot—especially when they’re buried in dense drawings or documents. These small changes can lead to significant delays if they go unnoticed during review.

The Challenge:

- With a high volume of jobs coming in, reviewers are often pressed for time.
- Unmarked or unclear deviations require extra effort to identify, verify, and address.
- This slows down the review process and increases the risk of errors slipping through.

Best Practice:

Always highlight deviations clearly—whether through notes, bubbles, or callouts.

This helps reviewers quickly focus on what’s changed and why, improving efficiency and reducing back-and-forth.

Proper Communication when the OWNER finds the error after letting

OWNER Finds Error After Letting

↳ Notifies CONTRACTOR

↳ Notifies FABRICATOR

↳ Provides Submittal and Fabrication Status to CONTRACTOR

Provides OWNER Construction
Status of NOT STARTED*

OWNER Prepares a Plan Revision

↳ Distributes to CONTRACTOR and REVIEWER

↳ Provides revision to FABRICATOR

↳ Updates shop drawings and submits to REVIEWER

REVIEWER completes review

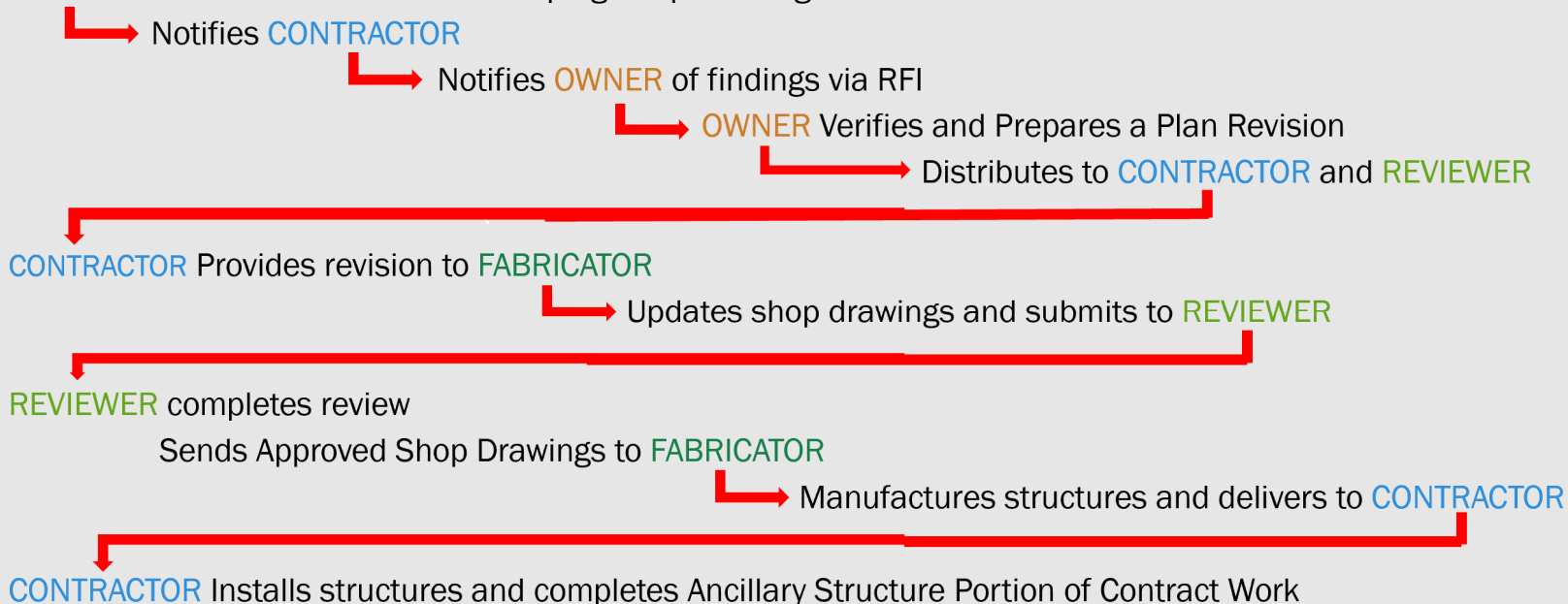
↳ Sends Approved Shop Drawings to FABRICATOR

↳ Manufactures structures and delivers to CONTRACTOR

CONTRACTOR Installs structures and completes Ancillary Structure Portion of Contract Work

Proper Communication when the FABRICATOR* finds the error after letting

FABRICATOR* Finds Error while developing Shop Drawings



*Communication is similar if CONTRACTOR finds error/discrepancy

Proper Communication when the REVIEWER finds the error after letting

FABRICATOR Completes Shop Drawings

→ Sends to REVIEWER

→ Finds error in Contract Plans during review

REVIEWER Notifies OWNER and FABRICATOR

→ Verifies and Prepares a Plan Revision

OWNER Distributes to CONTRACTOR and REVIEWER

REVIEWER Provides either redlines and stamps either Approved as Noted or Return for Correction*

→ Returns shop drawings to FABRICATOR

→ Manufactures structures* and delivers to CONTRACTOR

CONTRACTOR Installs structures and completes Ancillary Structure Portion of Contract Work

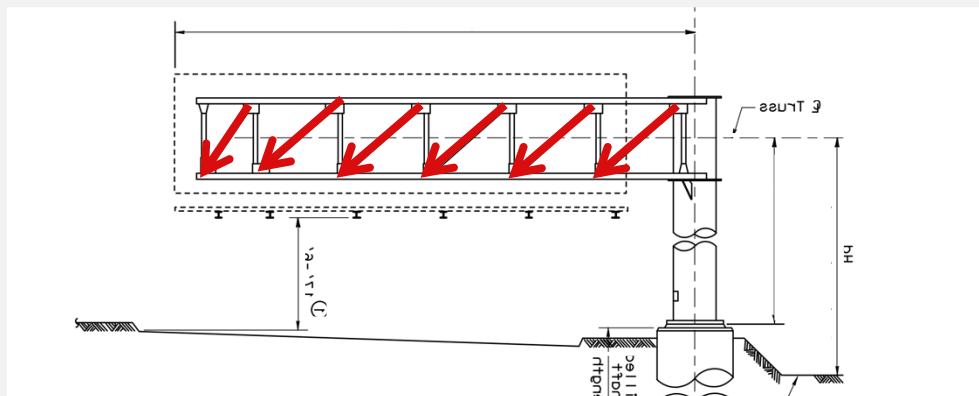
*If Returned for Correction, FABRICATOR will submit new drawings to REVIEWER for final approval before fabrication

Can You Spot the Mistake?



This object was built after submittals were reviewed and approved. Can you spot what went wrong?

Can You Spot the Mistake?



Sometimes, errors still make it through—even after reviews. In this case, the truss assembly was installed incorrectly. The dead load diagonal should run from the column **down and away** to properly transfer load. Installed the other way, it doesn't carry any load at all.

Be careful. Be informed. Knowledge is power.

Even small details can have big consequences. That's why understanding the "why" behind what we review is just as important as the review itself.


Sugar or Salt? Labeling Still Matters



Ever sat at a diner and grabbed one of those identical shakers—only to find out the hard way it was salt, not sugar?



Sugar or Salt? Labeling Still Matters

 Texas Department of Transportation					
FEDERAL ROAD DIVISION NUMBER	STATE	FEDERAL PROJECT NUMBER			SHEET NUMBER
6	TX	F 2024(436)			1
STATE DISTRICT NUMBER	COUNTY	CONTROL NUMBER	SECTION NUMBER	JOB NUMBER	HIGHWAY NUMBER
YKM	WHARTON	0089	07	154. ETC	US 59

Even in today's digital world, a small label on **EVERY** sheet helps us avoid confusion and keeps everything in its proper place.

*It's the difference between **sweet** success and a **salty** mistake!*

PLAN:
Dallas Cowboys
to win it all in
2026!

REJECTED

Thank you
TASIG