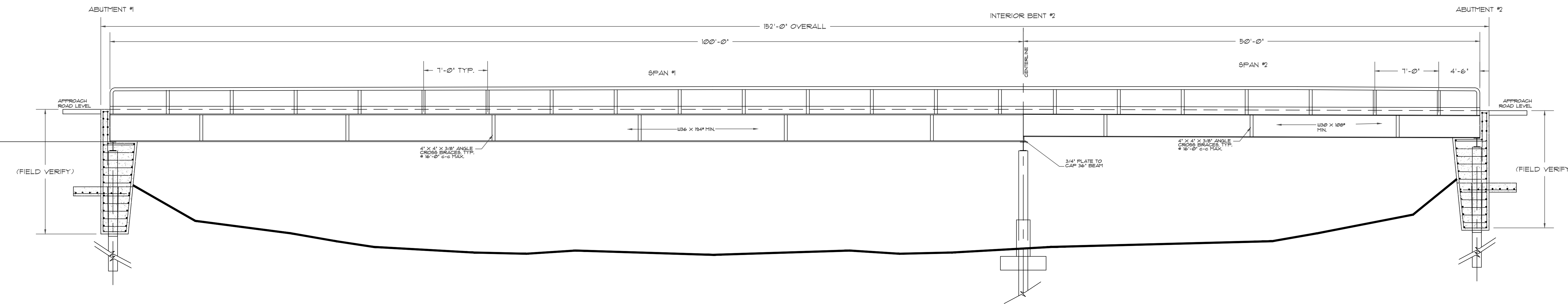
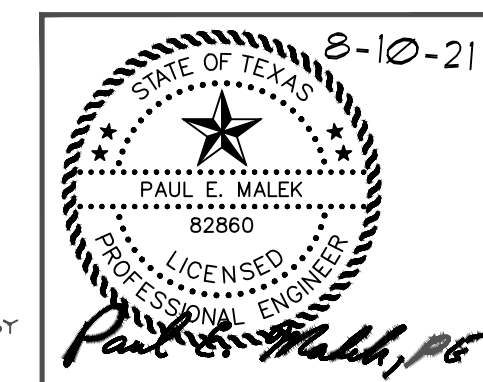


**A** BRIDGE FRAME PLAN  
 S1 SCALE: 3/16"=1'-0"



**B** BRIDGE FRAME SECTION  
 S1 SCALE: 3/16"=1'-0"



BRIDGE ON SEALY/KULOW ROAD  
 at SAN BERNARD RIVER  
 COLORADO COUNTY, PCT. 3  
 COMMISSIONER, KEITH NEUENDORFF  
 AUSTIN COUNTY, PCT. 3  
 COMMISSIONER, LEROY CERNY  
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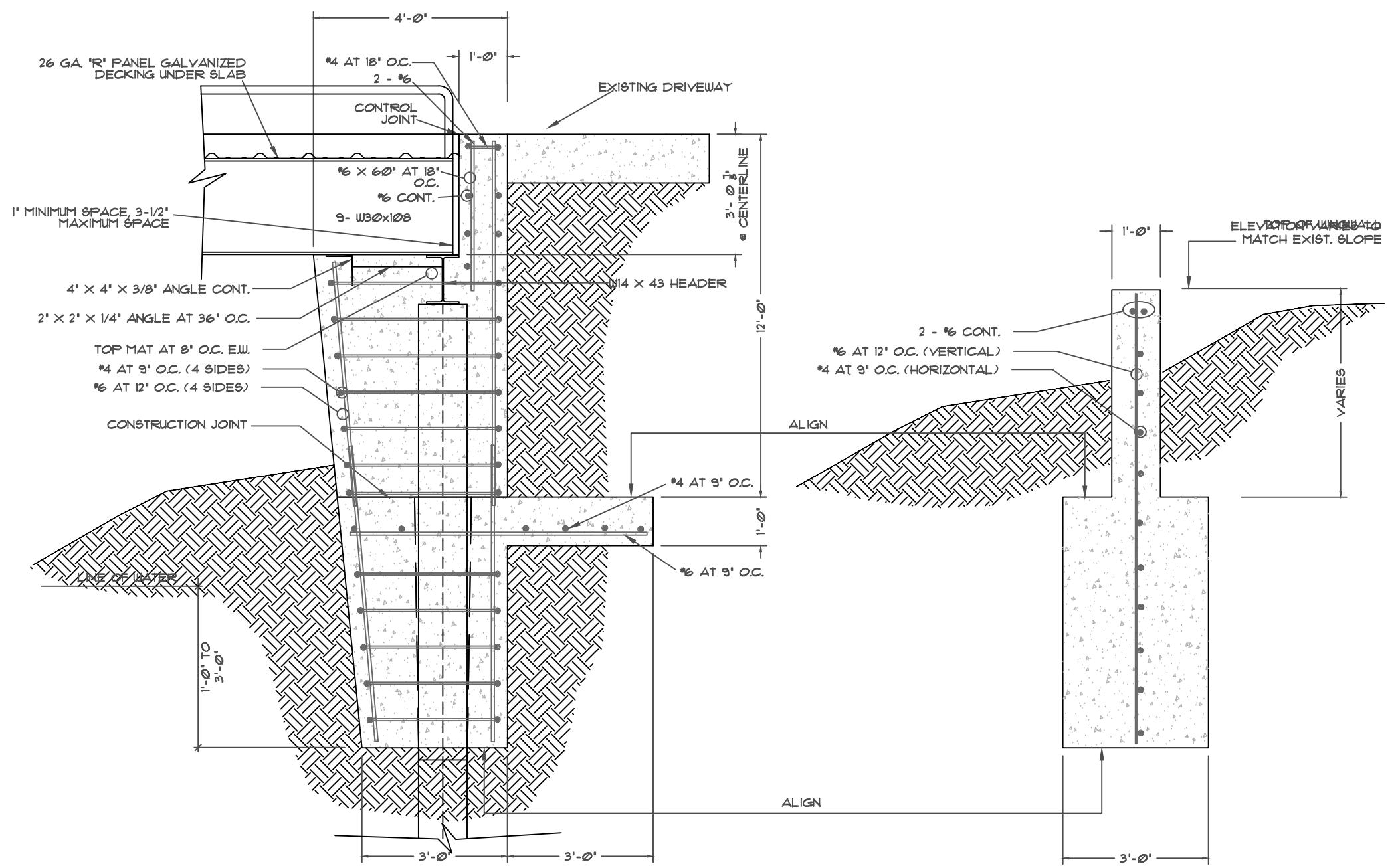
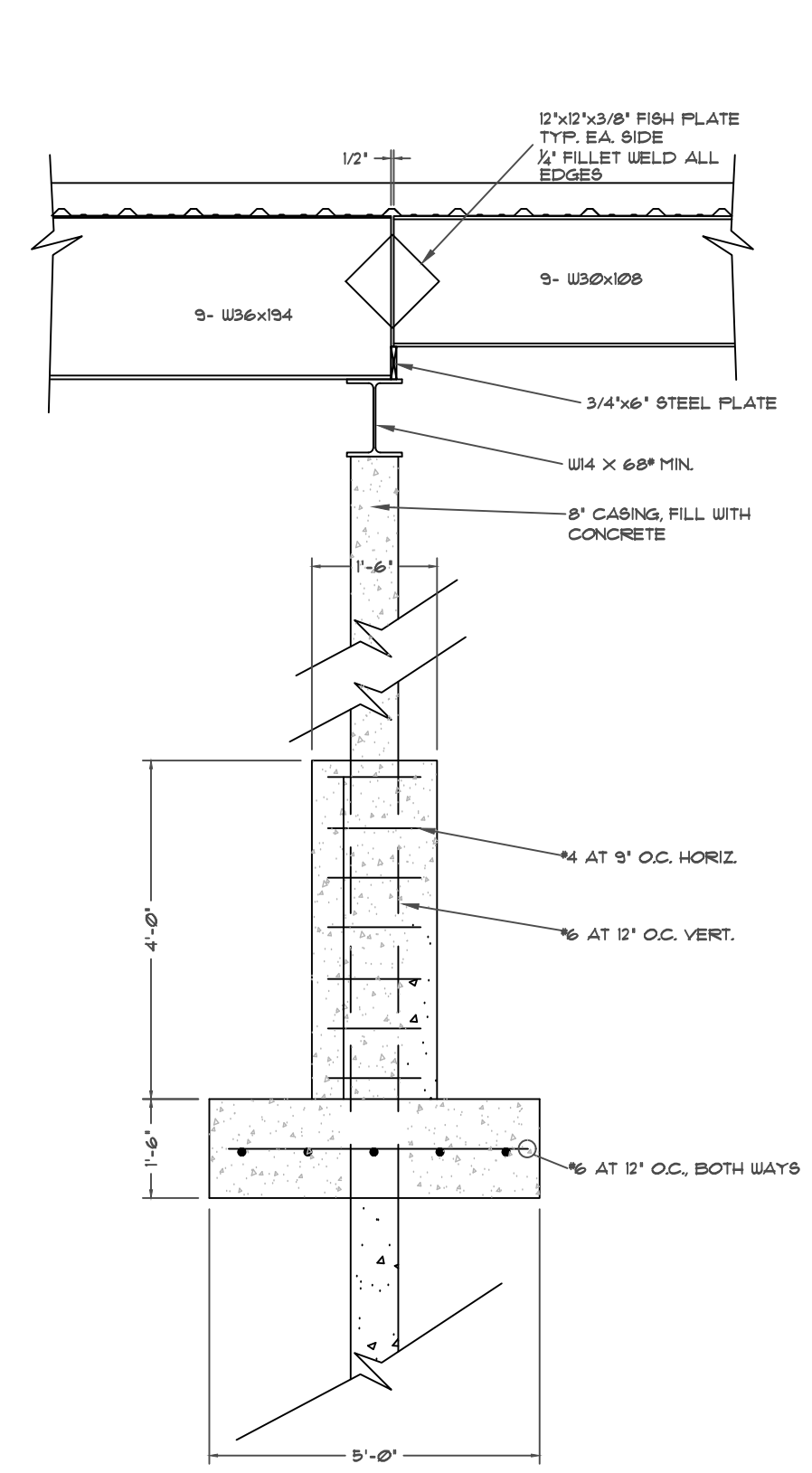
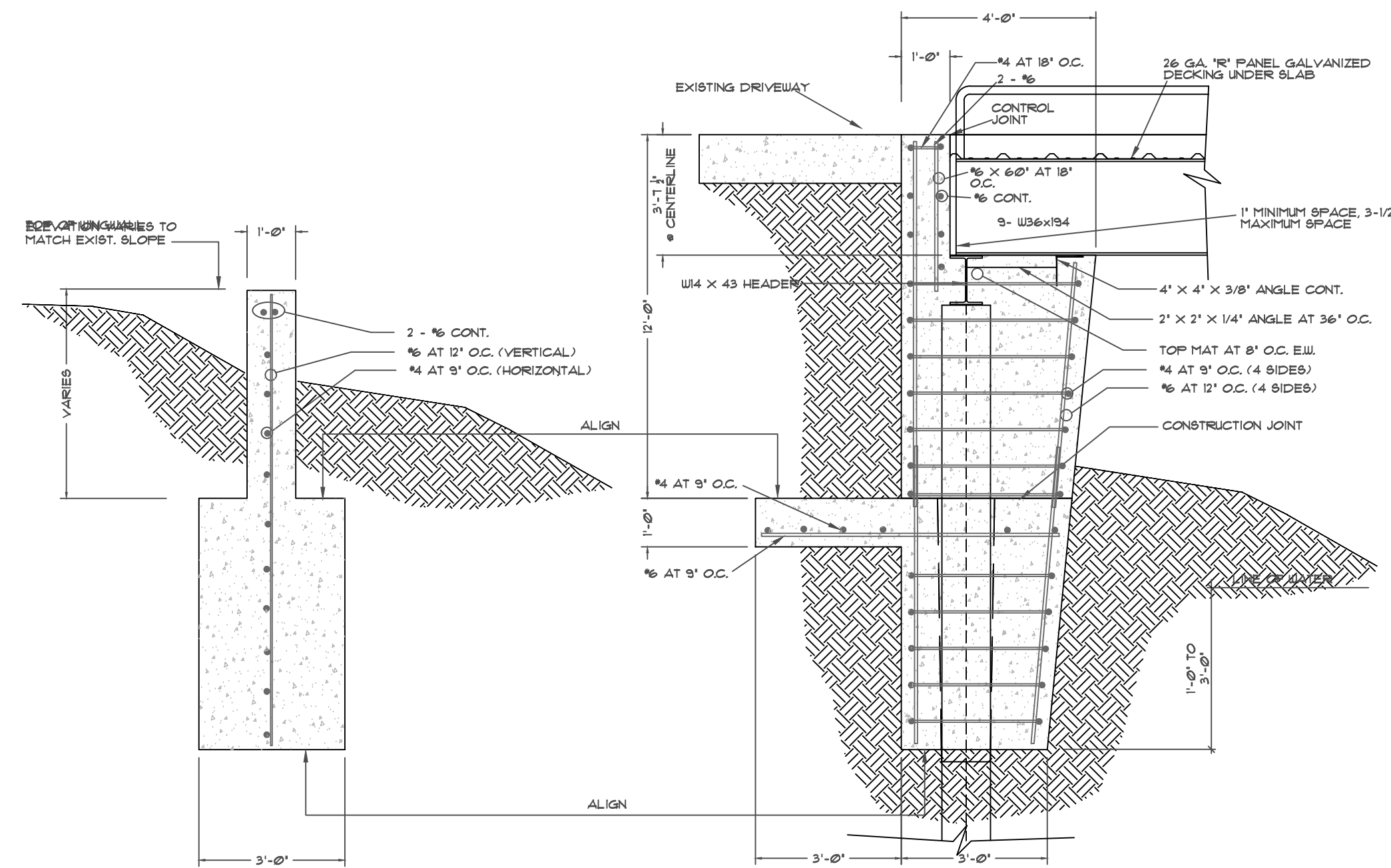
CONCRETE DECK  
 BRIDGE FRAME  
 PLAN/SECTION

APPROVED:  
 DRAWING NO.  
 S1

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY PAUL E. MALEK, P.E. 82860 ON AUGUST 10, 2021.

NO.	REVISIONS	DATE	BY	DRAWN BY:
				PEM
				DATE
				AUG. 10, 2021
				SCALE
				AS SHOWN

THESE PLANS WERE PREPARED UNDER THE SUPERVISION OF  
 I.M.B.C. MANAGEMENT  
 FIRM NO. P-789  
 7984 HWY 6 NAVASOTA, TX 77868  
 CONSULTING ENGINEER PAUL MALEK, P.E.  
 P.E. LICENSE # 82860



**A SUPPORT REINFORCEMENT DETAILS**  
SCALE: NONE

**1. GENERAL**

A. ALL PLAN DIMENSIONS ARE INTERPRETED FROM AND SHALL BE VERIFIED WITH THE STRUCTURAL DRAWINGS AND THE ENGINEER NOTIFIED IF DISCREPANCIES EXIST.

B. ALL ITEMS OF WORK SHALL BE PERFORMED FOR A LUMP SUM PRICE. UNIT QUANTITY PRICE SHALL NOT BE USED.

C. ANY UNUSUAL CONDITIONS ENCOUNTERED SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO CONCRETE PLACEMENT.

D. LOCATIONS OF CONCRETE CONSTRUCTION JOINTS NOT SHOWN SHALL BE APPROVED BY THE ENGINEER PRIOR TO CONCRETE PLACEMENT.

E. UNLESS OTHERWISE NOTED ALL ITEMS SHALL CONFORM TO THE TEXAS DEPARTMENT OF TRANSPORTATION'S (TxDOT) 'STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MAINTENANCE OF HIGHWAYS, STREETS, AND BRIDGES' ADOPTED JUNE 1, 2004.

**2. CONCRETE**

A. ALL CONCRETE EXCEPT THE DECK CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS IN ACCORDANCE WITH ASTM C-39. THE DECK CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3600 PSI AT 28 DAYS IN ACCORDANCE WITH ASTM C-39 AND SHALL HAVE A MINIMUM MODULUS OF RUPTURE OF 450 PSI AT 28 DAYS IN ACCORDANCE WITH ASTM C-10. AN AIR ENTRAINMENT AGENT SHALL BE USED. FLY ASH SHALL NOT BE USED.

B. WHERE CONCRETE IS PLACED AGAINST FORMS REINFORCING BARS SHALL HAVE A MINIMUM OF 2 INCHES CLEAR COVER UNLESS SHOWN OTHERWISE. WHERE CONCRETE IS PLACED AGAINST EARTH, REINFORCING BARS SHALL HAVE A MINIMUM OF 3 INCHES CLEAR COVER.

C. APPLY FLOAT FINISH TO SLAB SURFACES TO RECEIVE A TROWEL FINISH.

D. APPLY A HEAVY BROOM FINISH TO DECK SURFACES IN ACCORDANCE WITH ACI 302.

E. DEPRESSIONS BETWEEN HIGH SPOTS SHALL NOT BE GREATER THAN 1/8 IN. BELOW A 10 FT. LONG STRAIGHTEDGE IN ACCORDANCE WITH ACI 302.

F. CONCRETE FACES SHALL NOT DEVIATE MORE THAN 3/16" FROM THE PLAN DIMENSIONS.

**3. PILING**

A. ALL PILING SHALL BE AS SHOWN ON THE PLANS AND AS SPECIFIED BY TxDOT ITEM 401 - STEEL PIPING.

B. THE PILING SHALL BE DRIVEN AS SPECIFIED BY TxDOT ITEM 404 - PILE DRIVING. THE MINIMUM LENGTH SHALL BE AS SHOWN ON PLANS. THE PILES SHALL BE DRIVEN TO A GREATER DEPTH IF REQUIRED TO OBTAIN THE REQUIRED BEARING CAPACITY. THE MINIMUM BEARING CAPACITY OF THE PILES SHALL BE AS FOLLOW:

ABUTMENTS #1 & #2	- 35 TONS EACH
INTERIOR BENT #2	- 55 TONS EACH

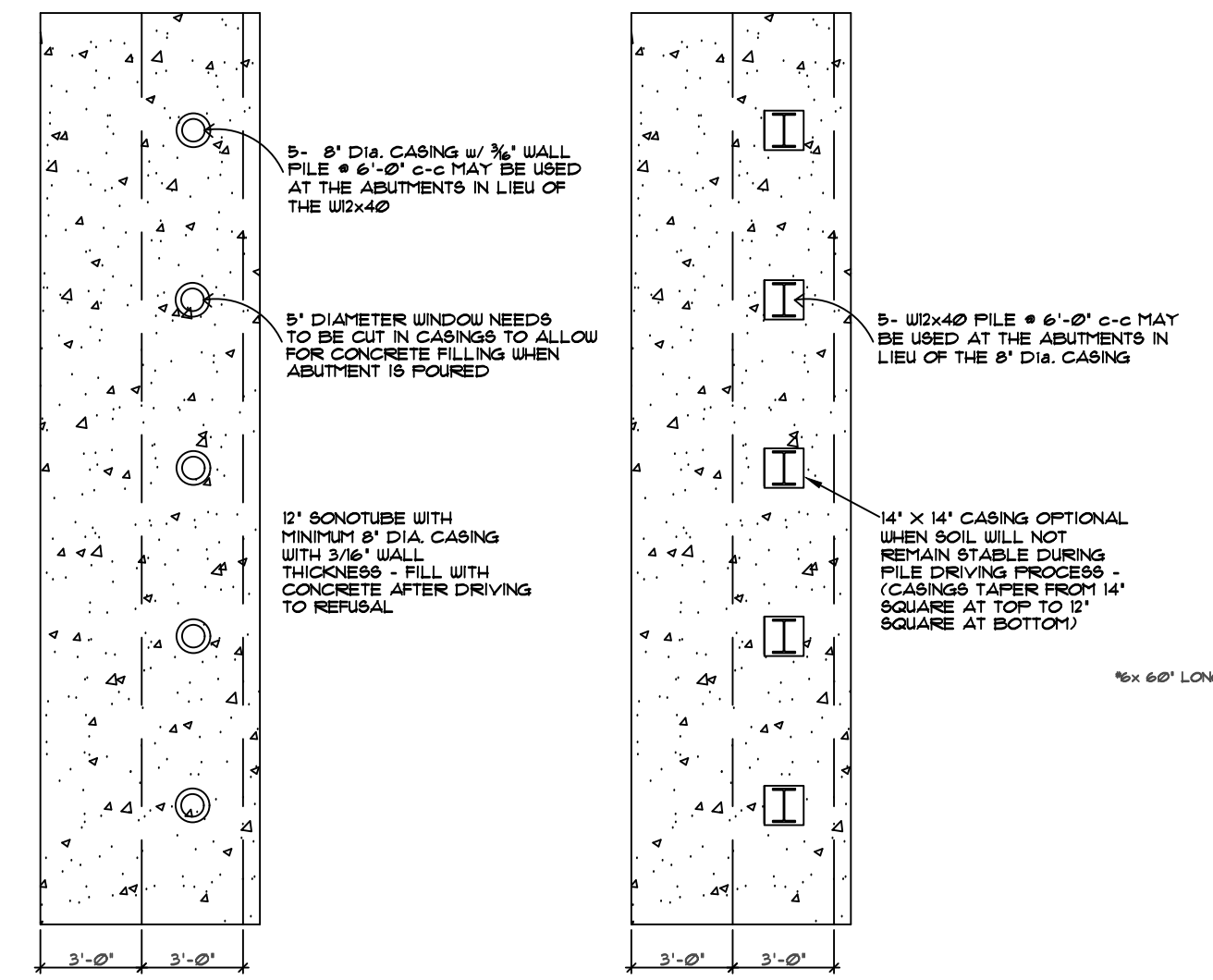
**4. STEEL STRUCTURES**

A. ALL STRUCTURAL SECTIONS SHALL BE ASTM A36, SUBJECT TO INSPECTION AND APPROVAL OF THE COUNTY. STRUCTURAL PIPE SHALL HAVE A MINIMUM YIELD STRENGTH OF 35,000 psi. ALL STRUCTURAL STEEL CONNECTIONS SHALL FULL WELDED JOINTS. WELDING SHALL BE IN ACCORDANCE WITH THE AMERICAN WELDING SOCIETY. REINFORCING STEEL SHALL CONFORM WITH ASTM A615.

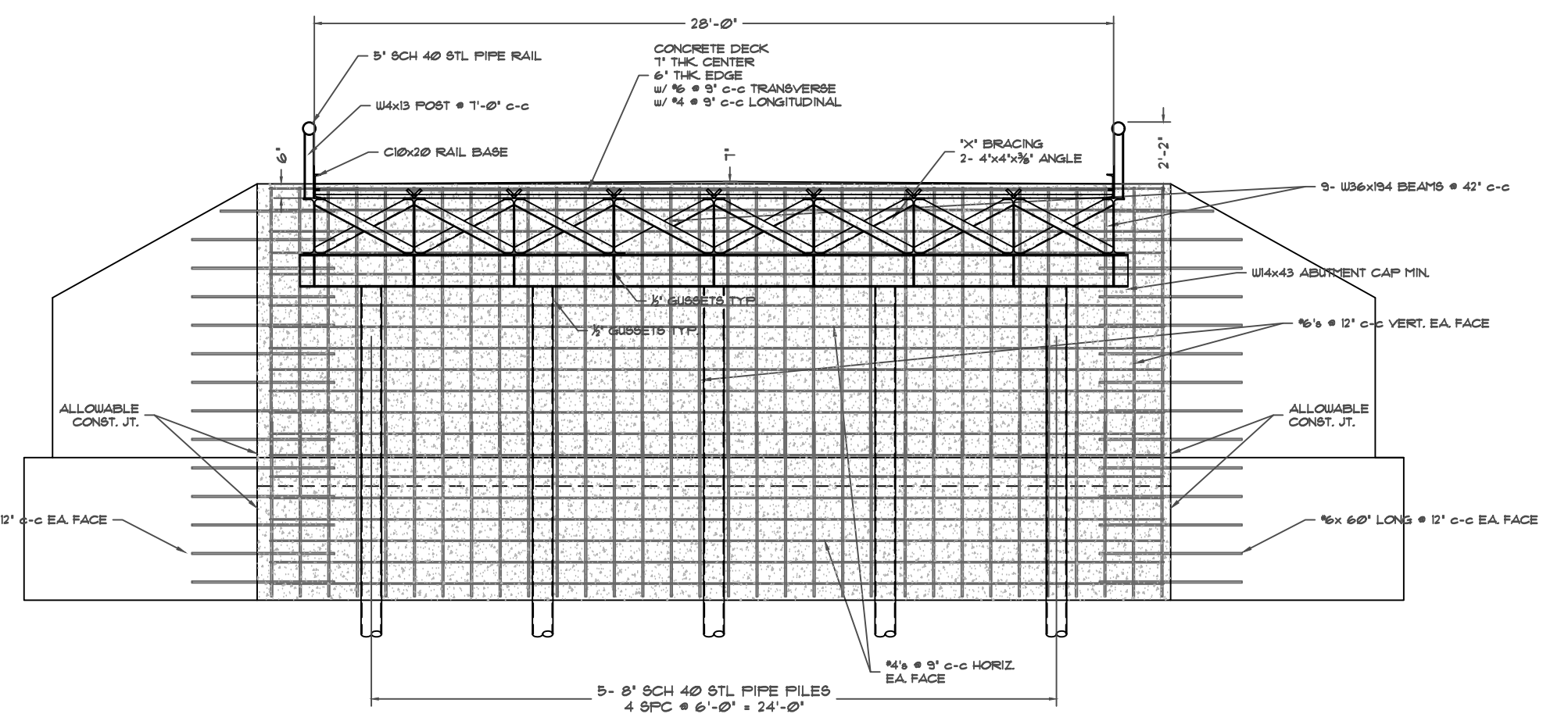
B. EXPOSED STRUCTURAL METAL SURFACES SHALL BE PAINTED WITH INORGANIC ZINC COATING.

C. USED STEEL IS ACCEPTABLE WITH LESS THAN 5% CROSS SECTION CORROSION LOSS.

D. CAMBER BEAMS  
100 FT SPAN - 3 1/8 INCHES.  
50 FT SPAN - 1/2 INCHES.



**B ABUTMENT PLAN OPTIONS**  
SCALE: NONE



**C ABUTMENT PROFILE**  
SCALE: NONE

**STRUCTURAL FILL**

A. ALL FILL ( IF REQUIRED ) SHALL HAVE A MAXIMUM PLASTICITY INDEX (PI) OF 20 OR LESS. THE MINIMUM PLASTICITY INDEX (PI) SHALL BE 5 OR GREATER. ALL FILL SHALL BE PLACED IN A MAXIMUM LIFT THICKNESS OF SIX INCHES. EACH LIFT SHALL BE COMPACTED TO 95% OF STANDARD PROCTOR DENSITY (ASTM D-698) AT A MOISTURE CONTENT OF -1% TO +3% AND SHALL BE FIELD TESTED IN ACCORDANCE WITH ASTM D-2922.

**BUILDING CODE:**

- THE INTERNATIONAL BUILDING CODE, 2012 EDITION.
- AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 2010 EDITION.
- ASCE-7, MINIMUM DESIGN LOADS FOR BUILDINGS & OTHER STRUCTURES.

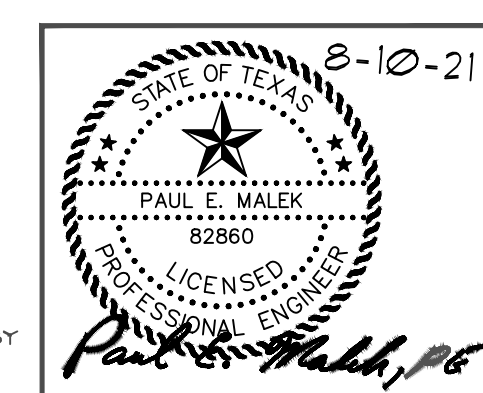
**LOADS:**

- DEAD LOAD = 87 PSF.
- DECK LIVE LOAD = 125 PSF.
- VEHICLE LOAD:  
H-20 TRUCK
- WIND LOAD:  
BASIC WIND SPEED  
V-UTL = 137 MPH,  
V-ASD = 109 MPH.  
WIND IMPORTANCE FACTOR = 1.0  
WIND EXPOSURE 'C'  
HORIZONTAL LOAD = -22.38 PSF
- SEISMIC LOAD:  
SEISMIC USE GROUP: I  
SITE CLASS: D  
SPECTRAL RESPONSE COEFFICIENTS  
SDS = 0.066  
SD1 = 0.054
- SUPPORT REACTIONS  
LOAD PER FILE / PIER (6" PILE EACH ABUTMENT AND BENT)

	ABUTMENTS #1	BENTS #2	ABUTMENT #3
DEAD	32.99 Kips	46.78 Kips	13.20 Kips
DEAD+LIVE	61.86 Kips	90.24 Kips	20.38 Kips
DEAD+VEHICLE	66.13 Kips	100.0 Kips	41.81 Kips

**NOTES:**

- STRUCTURAL STEEL SHALL MEET THE LATEST AASHTO (AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS) SPECIFICATIONS FOR MATERIALS.
- ALL STRUCTURAL STEEL TO MEET ASTM A 36 - fy = 36 KSI. ALL TUBING TO MEET ASTM A 500, GRADE B - fy = 46 KSI. ALL PIPES TO MEET ASTM A-53, GRADE B - fy = 35 KSI.
- ALL BOLTS A 325 HIGH STRENGTH WITH WASHERS AS REQUIRED.
- WELDING SHALL CONFORM TO THE STANDARDS SET FORTH IN AISC PUBLICATION, 'WELDING IN BUILDING CONSTRUCTION'.
- ALL FIELD AND SHOP CONNECTIONS TO HAVE 3/16" FILLET WELDS MINIMUM UNLESS NOTED.
- ALL FIELD WELDS TO BE WITH E70XX ELECTRODES.
- NO OPENINGS TO BE PLACED IN BEAM WEBS OR FLANGES WITHOUT ENGINEER'S APPROVAL.



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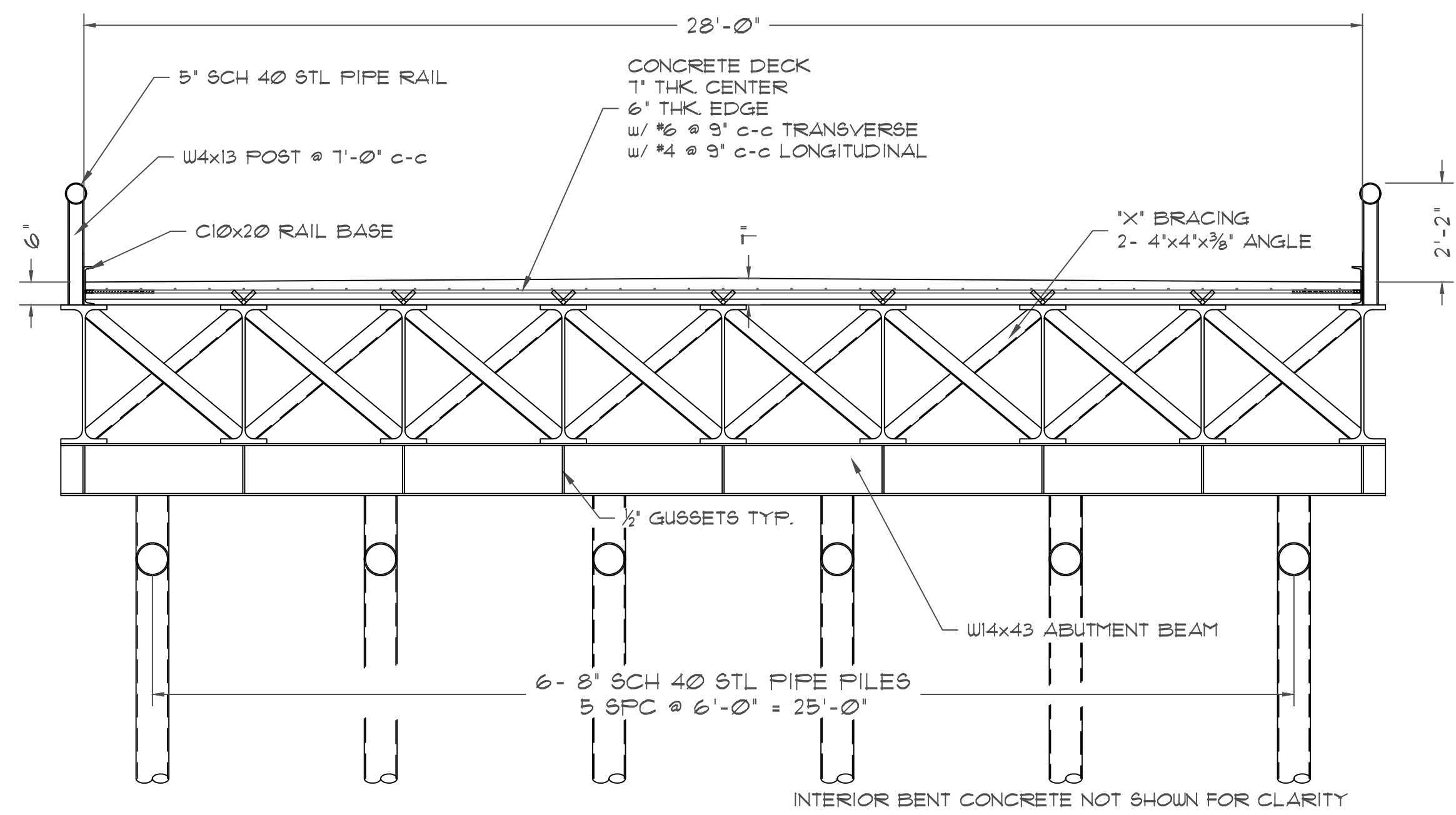
BRIDGE SUPPORT DETAILS

APPROVED: \_\_\_\_\_  
DRAWING NO. S2

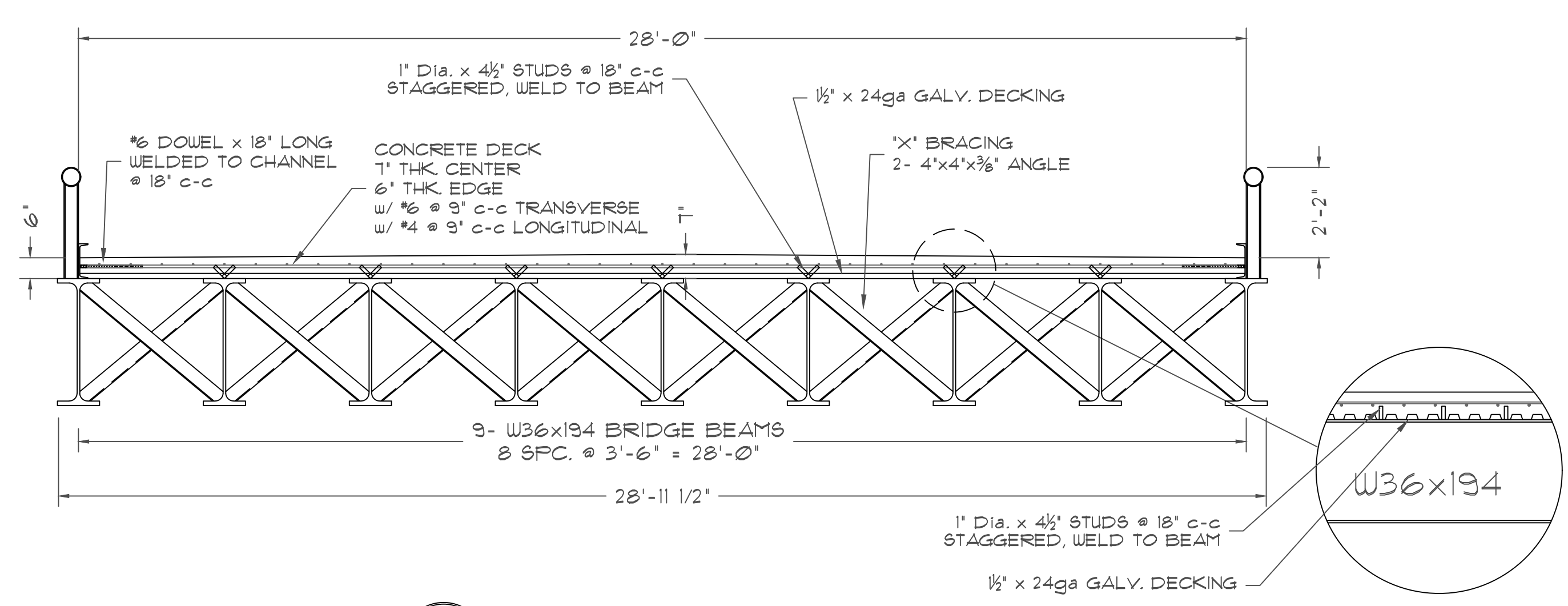
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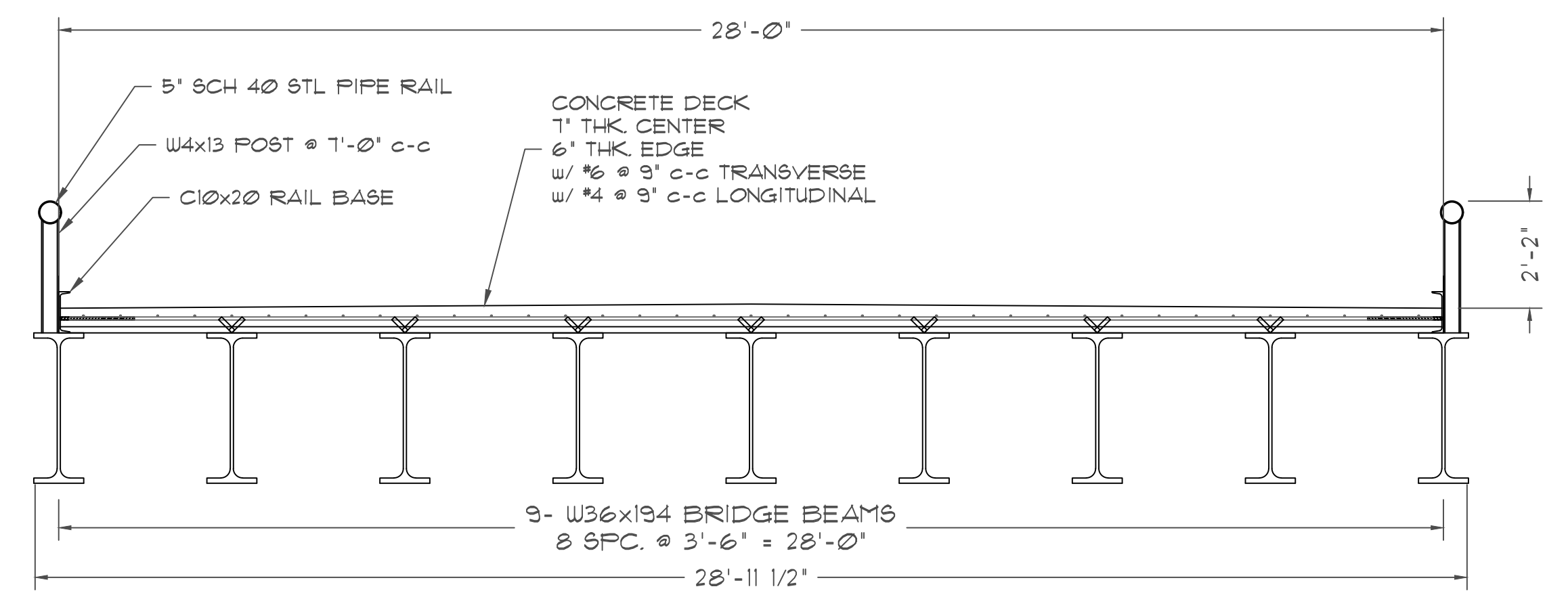
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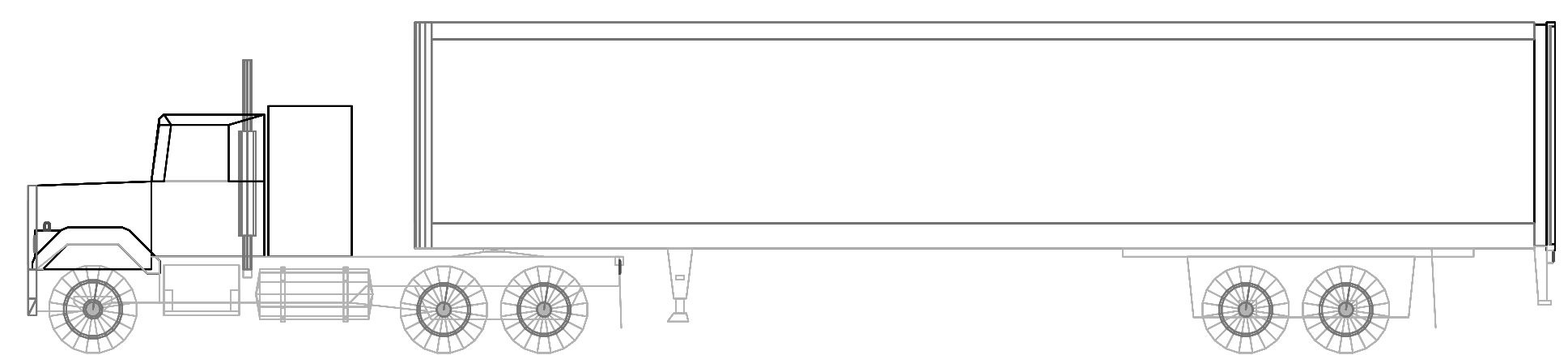
**A** BRIDGE FRAME SECTION  
S3 SCALE: 3/16"=1'-0"



**B** BRIDGE FRAME SECTION  
S3 SCALE: 3/16"=1'-0"



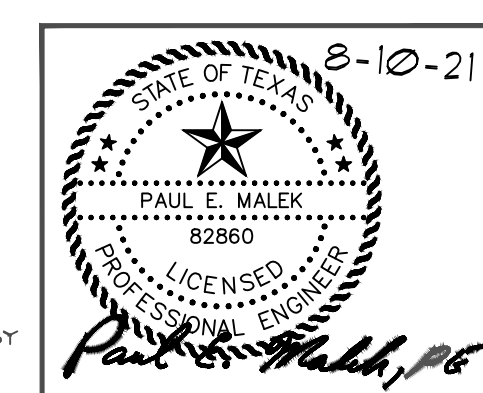
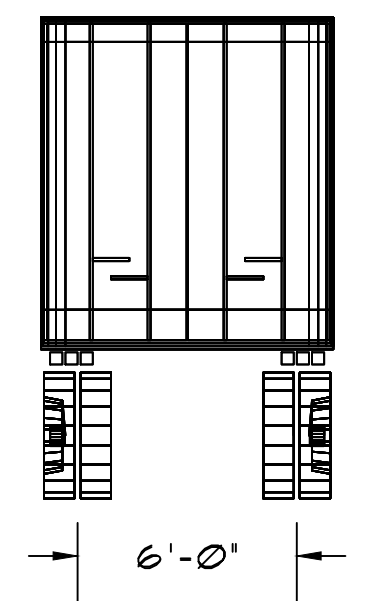
**C** BRIDGE FRAME SECTION  
S3 SCALE: 3/16"=1'-0"



TRUCK RATING	FRONT AXLE	REAR TANDEM	REAR TANDEM	TOTAL TRUCK & TRAILER WEIGHT
tons	kips	kips	kips	lb
H-20	8.0	25.00	25.00	108,000

I CERTIFY THAT THE BRIDGE BUILT TO PLANS AND NOTES WILL SUPPORT THE HS-20 LOADS AS SHOWN IN THE CHART ABOVE. THE HS-20 LOAD RATING IS AN INVENTORY RATING PER AASHTO SPEC.

*Paul E. Malek, P.E.*



BRIDGE ON SEALY/KULOW ROAD at SAN BERNARD RIVER COLORADO COUNTY, PCT. 3 COMMISSIONER, KEITH NEUENDORFF AUSTIN COUNTY, PCT. 3 COMMISSIONER, LEROY CERNY CONSTRUCTION MANAGEMENT AND DESIGN SERVICES

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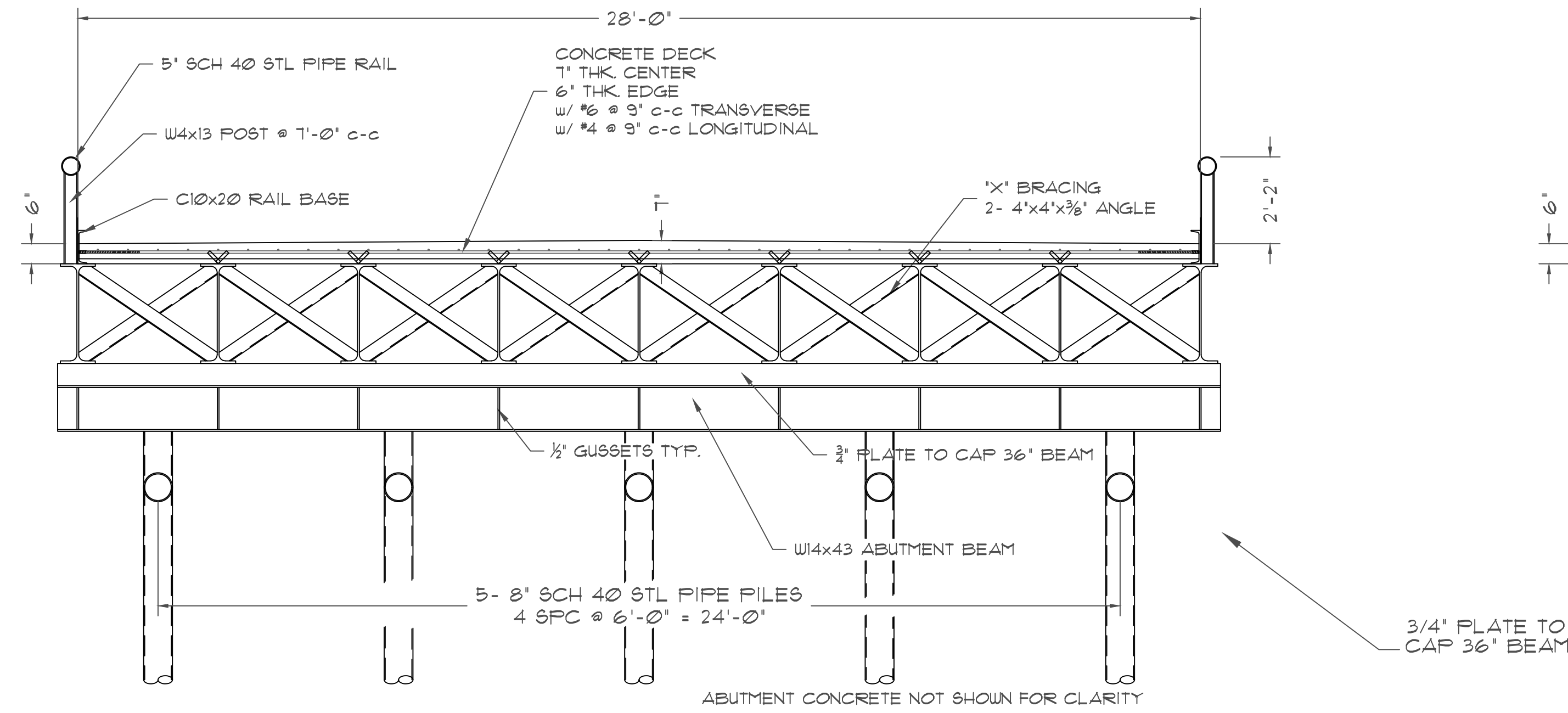
SPAN- 1 SECTIONS

APPROVED: DRIVING NO. S3

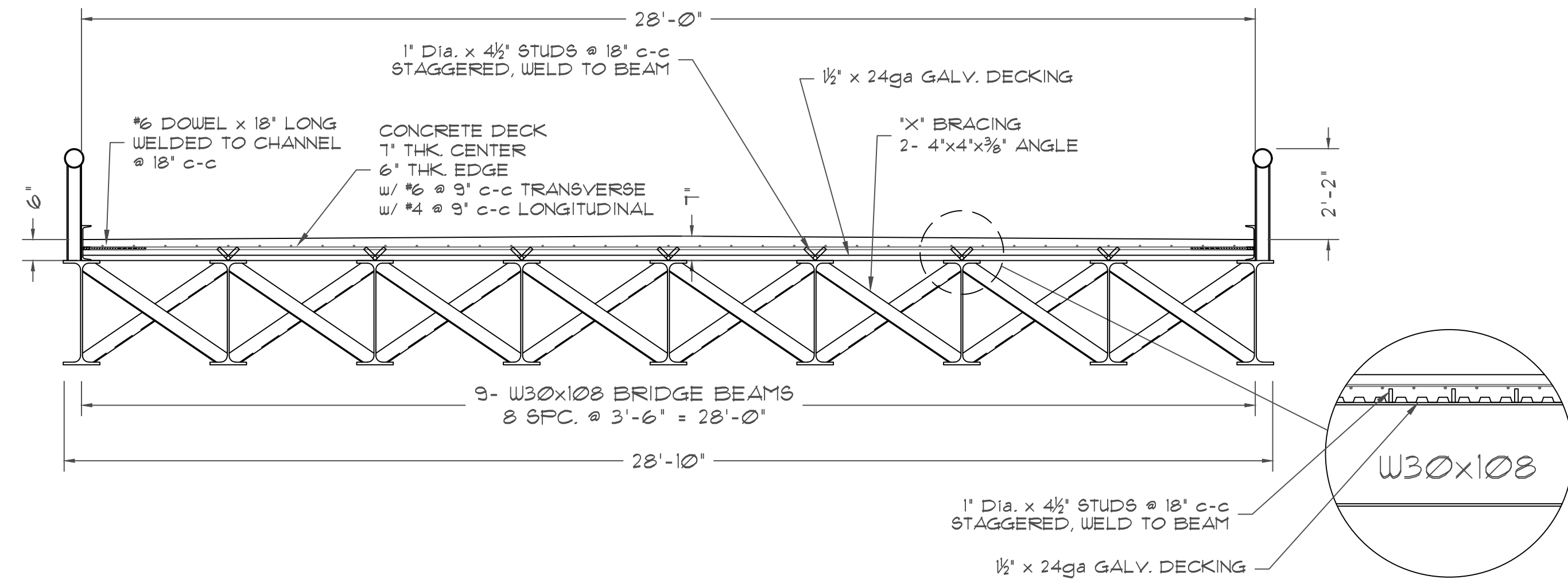
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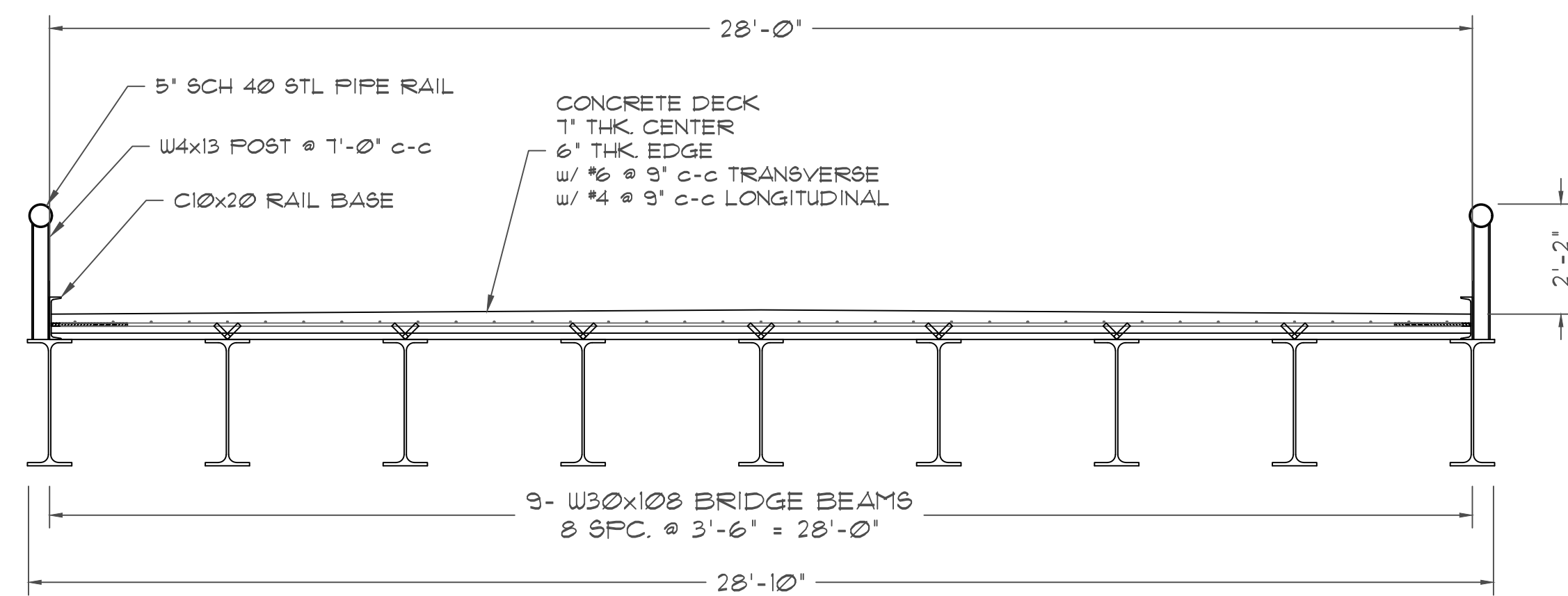
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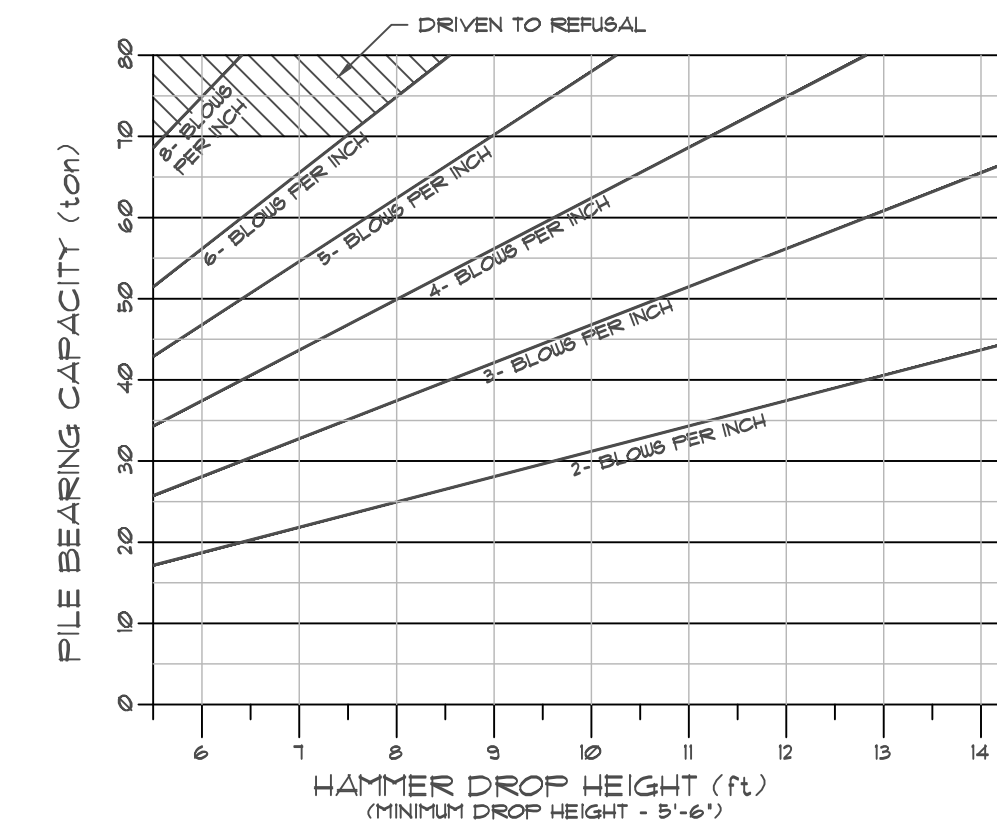
**A** BRIDGE FRAME SECTION  
S4 SCALE: 3/16"=1'-0"



**B** BRIDGE FRAME SECTION  
S4 SCALE: 3/16"=1'-0"

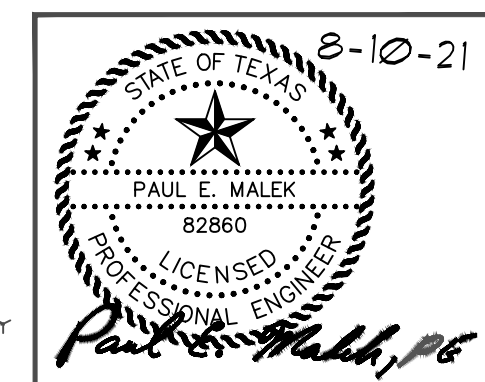


**C** BRIDGE FRAME SECTION  
S4 SCALE: 3/16"=1'-0"



PILE BEARING CHART -  
TxDOT ITEM- 404 (DRIVING PILING)  
DROP HAMMER WEIGHT- 4600 lbs  
MINIMUM DROP HEIGHT- 5'-6"  
MAXIMUM DROP HEIGHT- 14'-6"  
THE PENETRATION SHALL NOT EXCEED 1/2" PER BLOW FOR THE LAST 40 BLOWS (WITHOUT INCREASING).  
DRIVEN TO REFUSAL WOULD BE MORE THAN 6- BLOWS PER NCH @ 15' DROP.

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SPANS- 2 SECTIONS

APPROVED:  
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S4

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