

I. 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-78. 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 407 - STEEL PILING.
- 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 - 41 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 1 INCH.

BUILDING CODE:

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

LOADS:

- 1. DEAD LOAD = 110 PSF.
- 2. DECK LIVE LOAD = 125 PSF.
- 3. VEHICLE LOAD:
 HL-93 LOADING PER AASHTO = 25,000 lbs MAX. AXLE PLUS 640 lbs PER LANE

4. WIND LOAD:

- BASIC WIND SPEED
 V-UTL = 122 MPH.
 V-ASD = 99 MPH.
- WIND IMPORTANCE FACTOR = 1.0
- WIND EXPOSURE "C"
- HORIZONTAL LOAD = -23.11 PSF

5. SEISMIC LOAD:

- SEISMIC USE GROUP: I
- SITE CLASS: D
- SPECTRAL RESPONSE COEFFICIENTS
 SDS = 0.065
 SD1 = 0.055

6. SUPPORT REACTIONS

LOAD PER PILE / PIER (5- PILE / PIER EACH END):

HORIZONTAL = 0.63 Kips

VERTICAL:

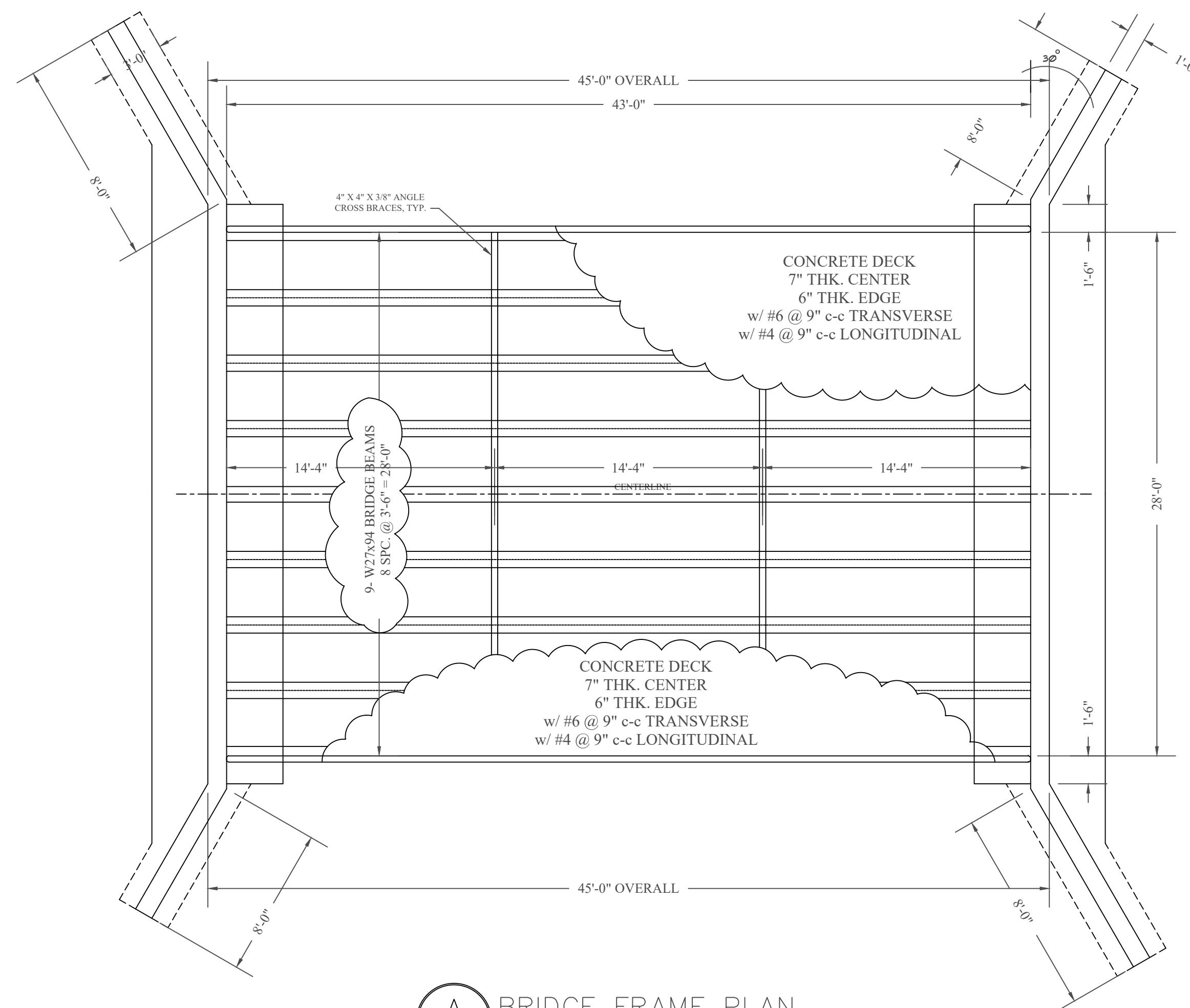
	RIGHT & LEFT
DEAD-	15.74 Kips
DEAD+LIVE	33.46 Kips
DEAD+VEHICLE	58.59 Kips

NOTES:

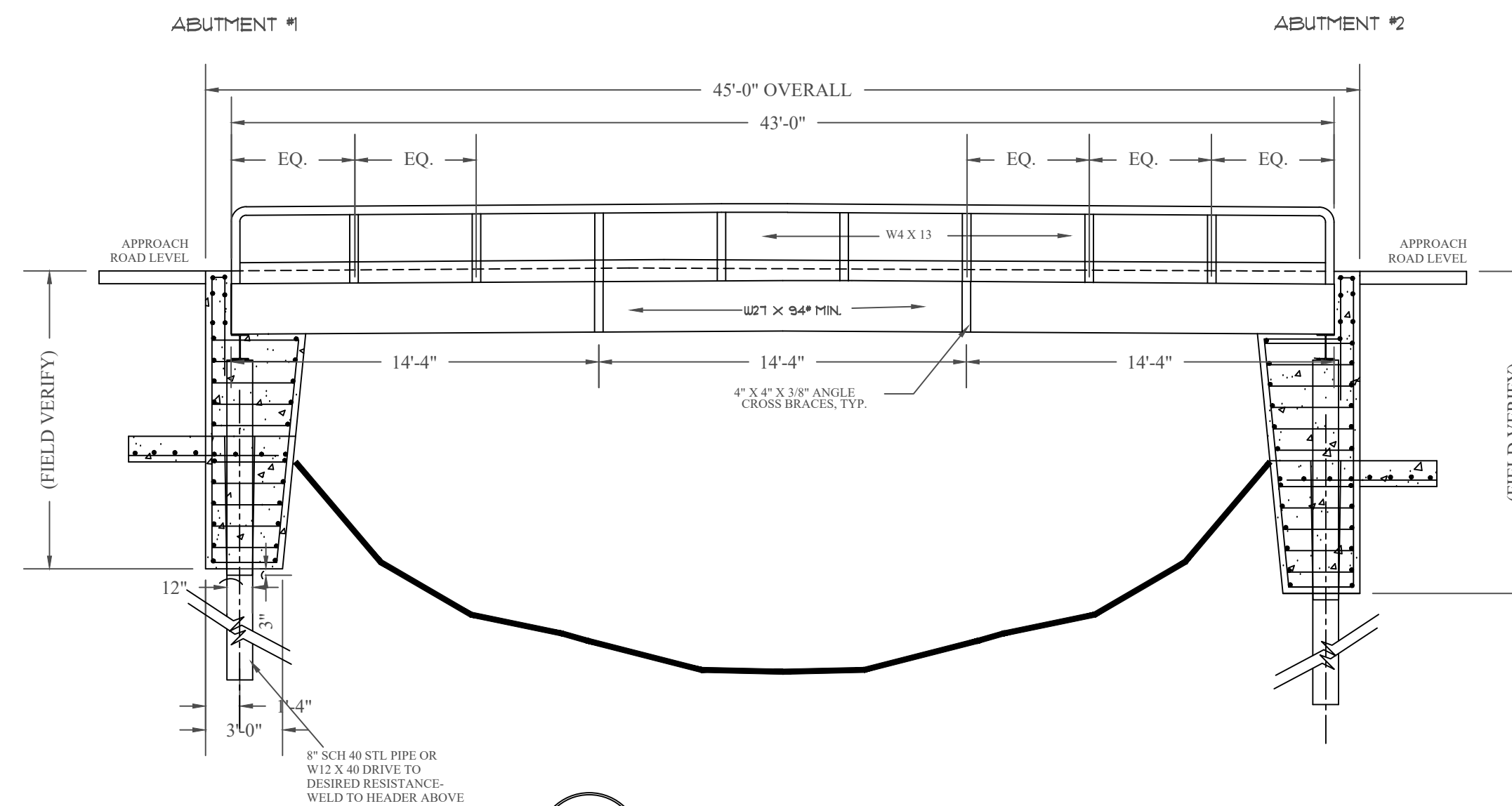
- 1. STRUCTURAL STEEL SHALL MEET THE LATEST AASHTO (AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS) SPECIFICATIONS FOR MATERIALS.
- 2. ALL STRUCTURAL STEEL TO MEET ASTM A 36 - Fy = 36 KSI.
 ALL TUBING TO MEET ASTM A 500, GRADE B - Fy = 46 KSI.
 ALL PIPES TO MEET ASTM A-53, GRADE B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

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.

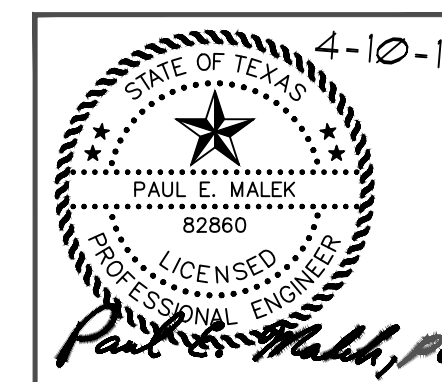


A BRIDGE FRAME PLAN
 S1 SCALE: 3/16"=1'-0"



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

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY PAUL E. MALEK, P.E. 82860 ON APRIL 10, 2019.



PROPOSED 45ft BRIDGE
 COUNTY ROAD No. 205 @ DRAW
 COLORADO COUNTY
 COMMISSIONER, DARRELL KUBESCH

CONSTRUCTION MANAGEMENT AND DESIGN SERVICES

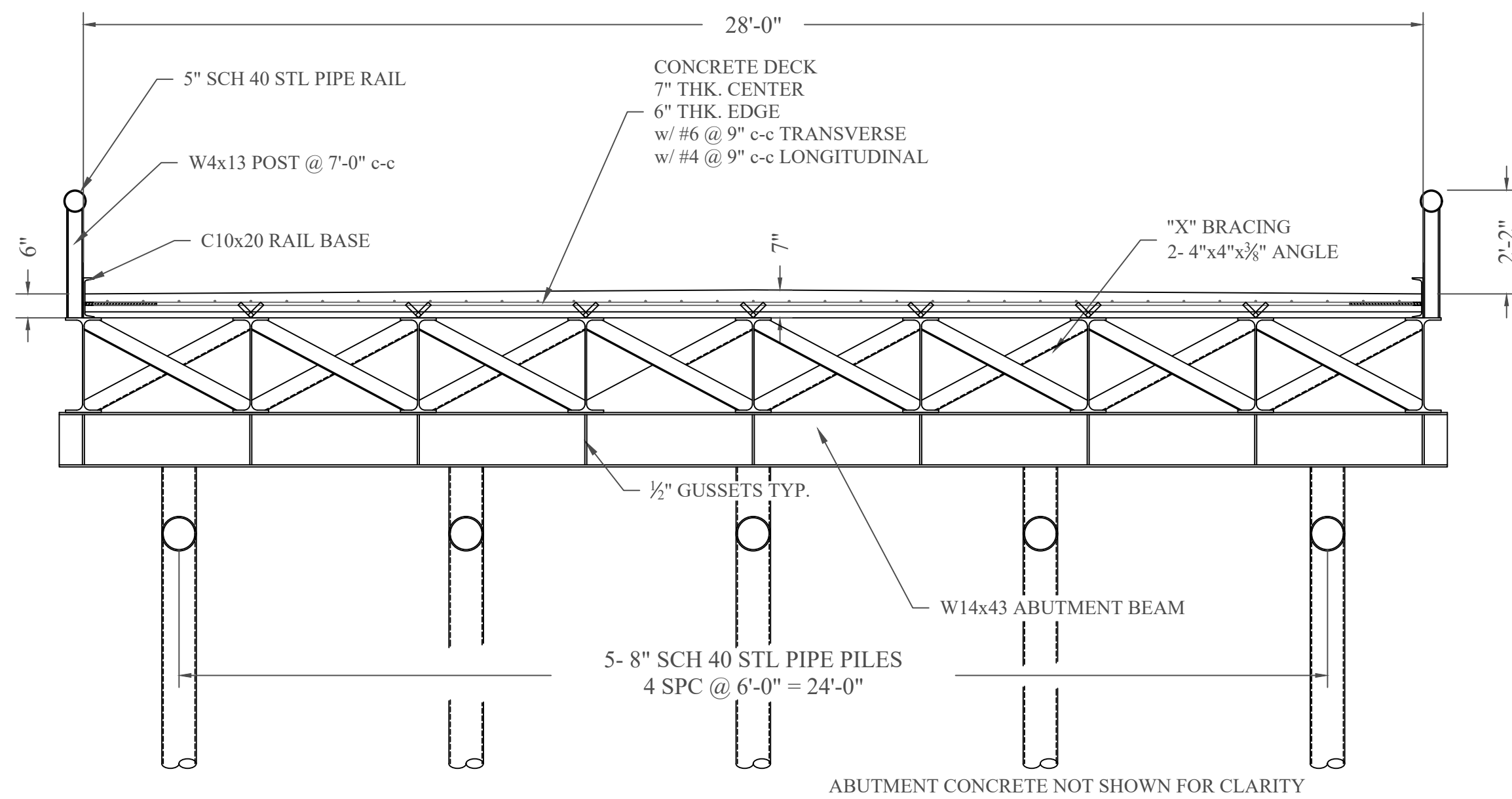
M.B.C. Management
 7984 HWY. 6
 NAVASOTA, TX 77868
 Ph. (936) 825-1603
 Fax (936) 825-1624

BRIDGE PLAN
 AND BRIDGE PROFILE
 w/ CONCRETE DECK

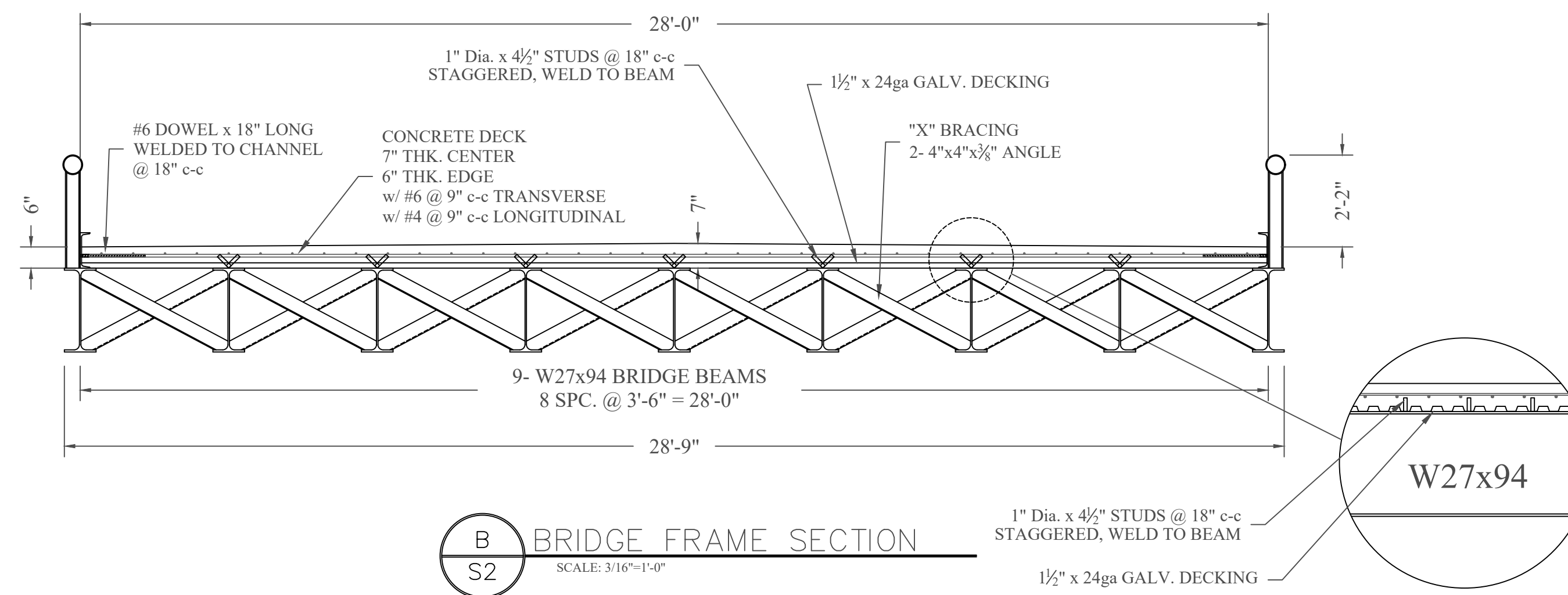
APPROVED:
 DRAWING NO.
 S1

NO.	REVISIONS	DATE	BY	DRAWN BY:
				PEM
				DATE
		APR. 10, 2019		SCALE
				AS SHOWN

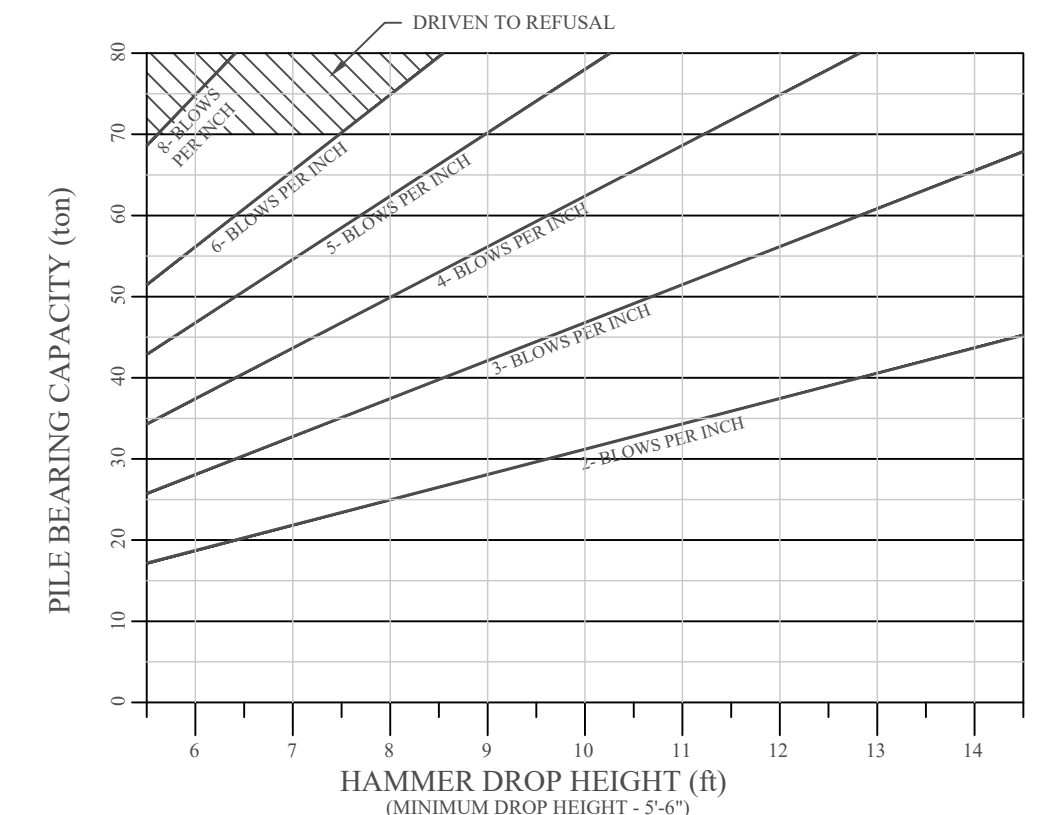
THESE PLANS WERE PREPARED UNDER THE SUPERVISION OF M.B.C. MANAGEMENT FIRM NO. P-789 7984 HWY 6, NAVASOTA, TX 77868 CONSULTING ENGINEER PAUL MALEK, P.E. P.E. LICENSE # 82860



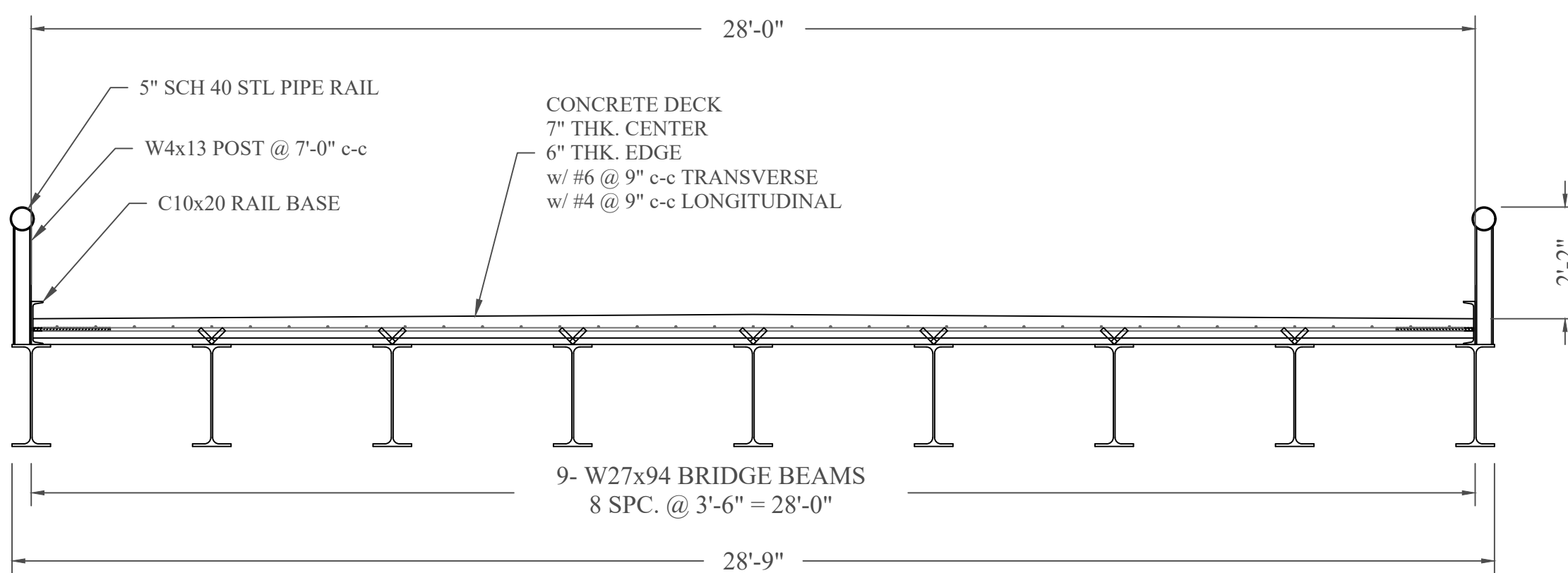
A BRIDGE FRAME SECTION
S2 SCALE: 3/16"=1'-0"



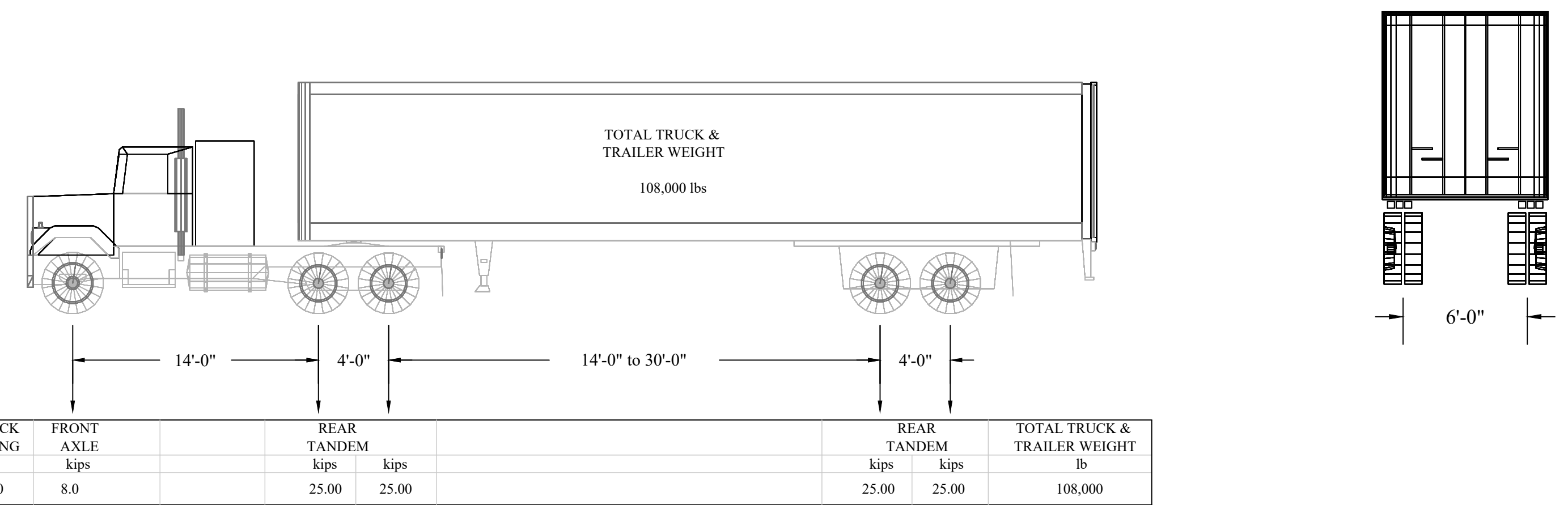
B BRIDGE FRAME SECTION
S2 SCALE: 3/16"=1'-0"



PILE BEARING CHART -
TXDOT ITEM-404 (DRIVING PILING)
DROP HAMMER WEIGHT- 4680 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 INCH w/ 7.5' DROP.



C BRIDGE FRAME SECTION
S2 SCALE: 3/16"=1'-0"



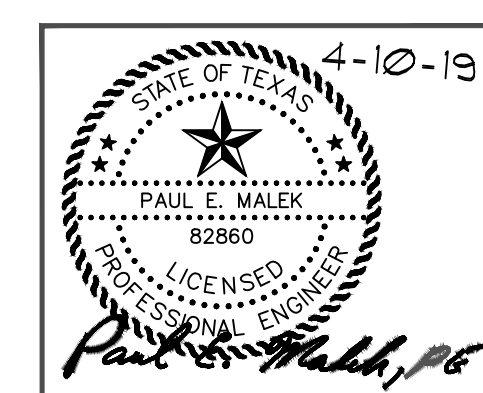
TRUCK RATING	FRONT AXLE	REAR TANDEM		REAR TANDEM		TOTAL TRUCK & TRAILER WEIGHT
tons	kips	kips	kips	kips	kips	lb
H-20	8.0	25.00	25.00	25.00	25.00	108,000

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.

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MBC MANAGEMENT
FIRM NO. P-789
7984 HWY 6, NAVASOTA, TX 77868
CONSULTING ENGINEER PAUL MALEK, P.E.
P.E. LICENSE # 82860

PROPOSED 45ft BRIDGE
COUNTY ROAD No. 205 @ DRAW
COLORADO COUNTY
COMMISSIONER, DARRELL KUBESCH

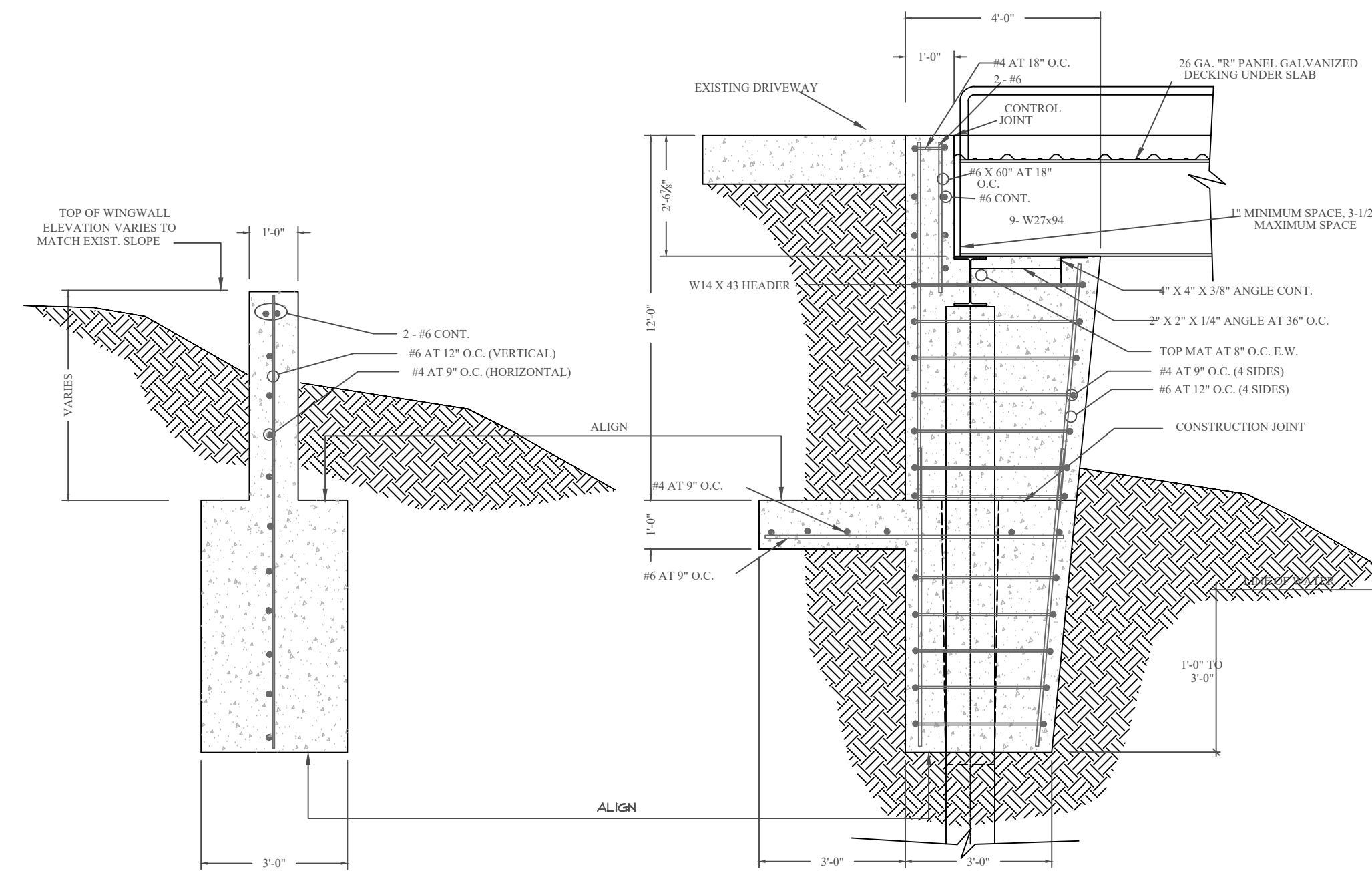
CONSTRUCTION MANAGEMENT AND DESIGN SERVICES

M.B.C. Management
design
design-build
general contracting

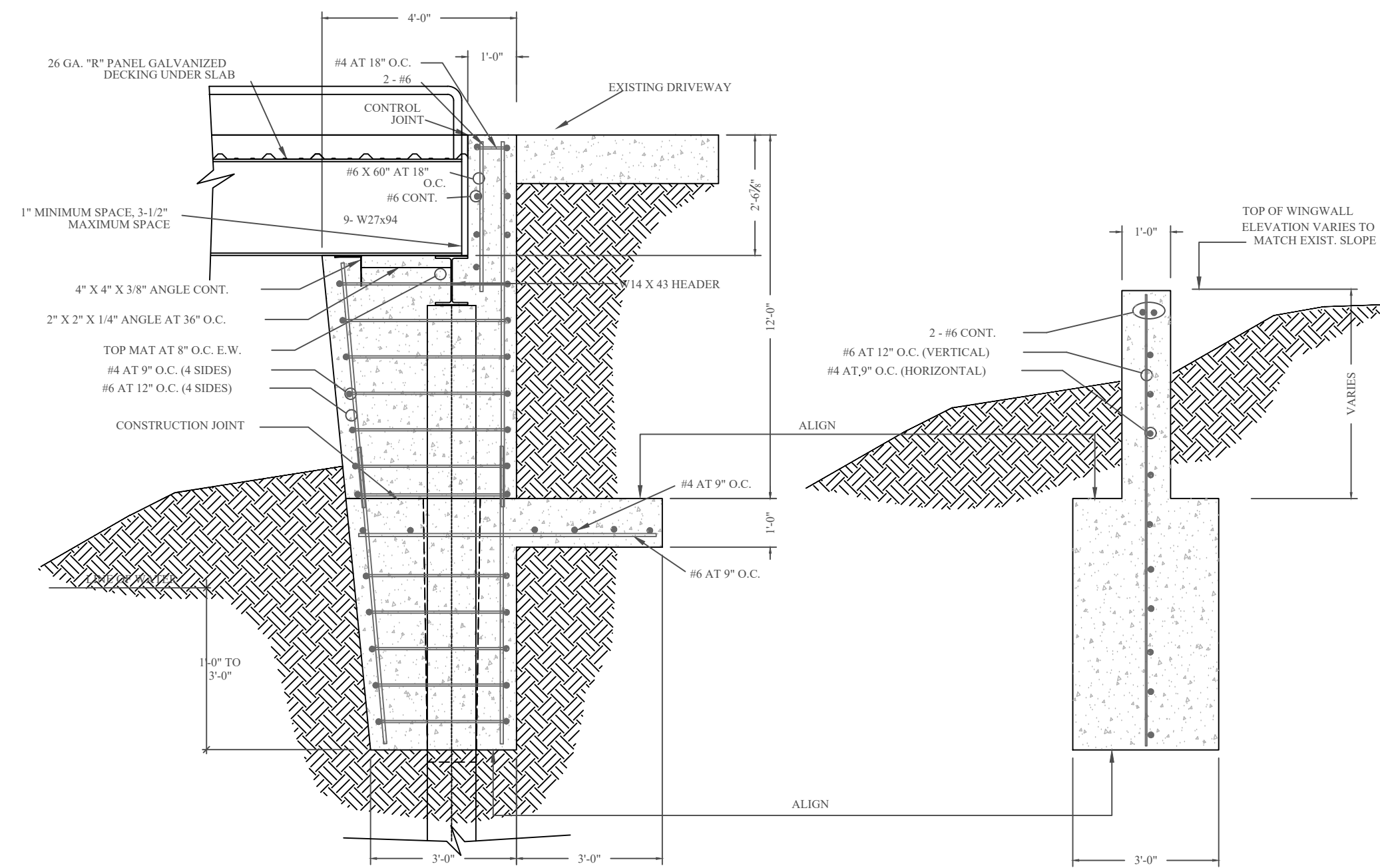
7984 HWY. 6
NAVASOTA, TX 77868
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BRIDGE SECTIONS AND DETAILS

APPROVED:
DRAWING NO. S2

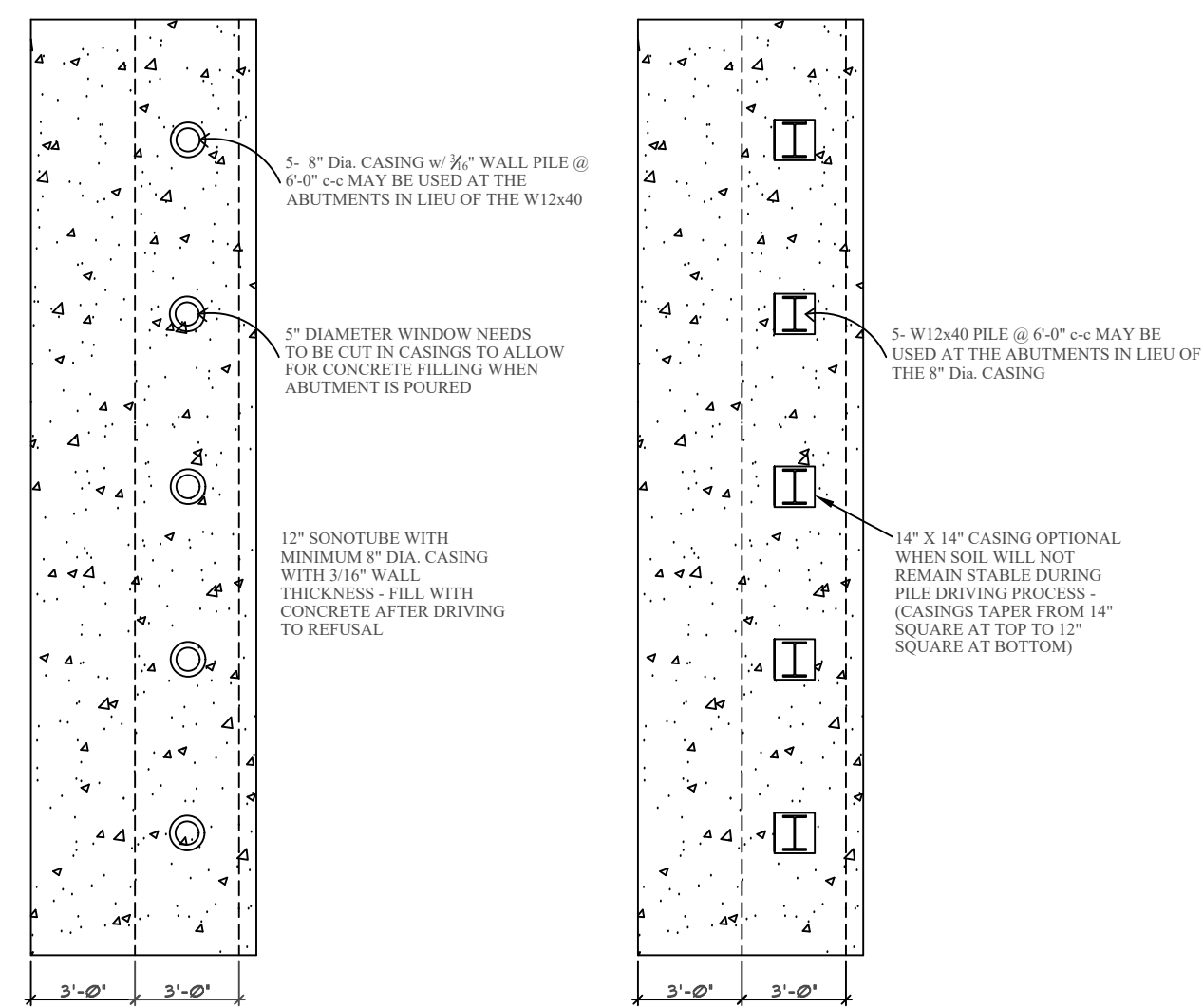


ABUTMENT #1

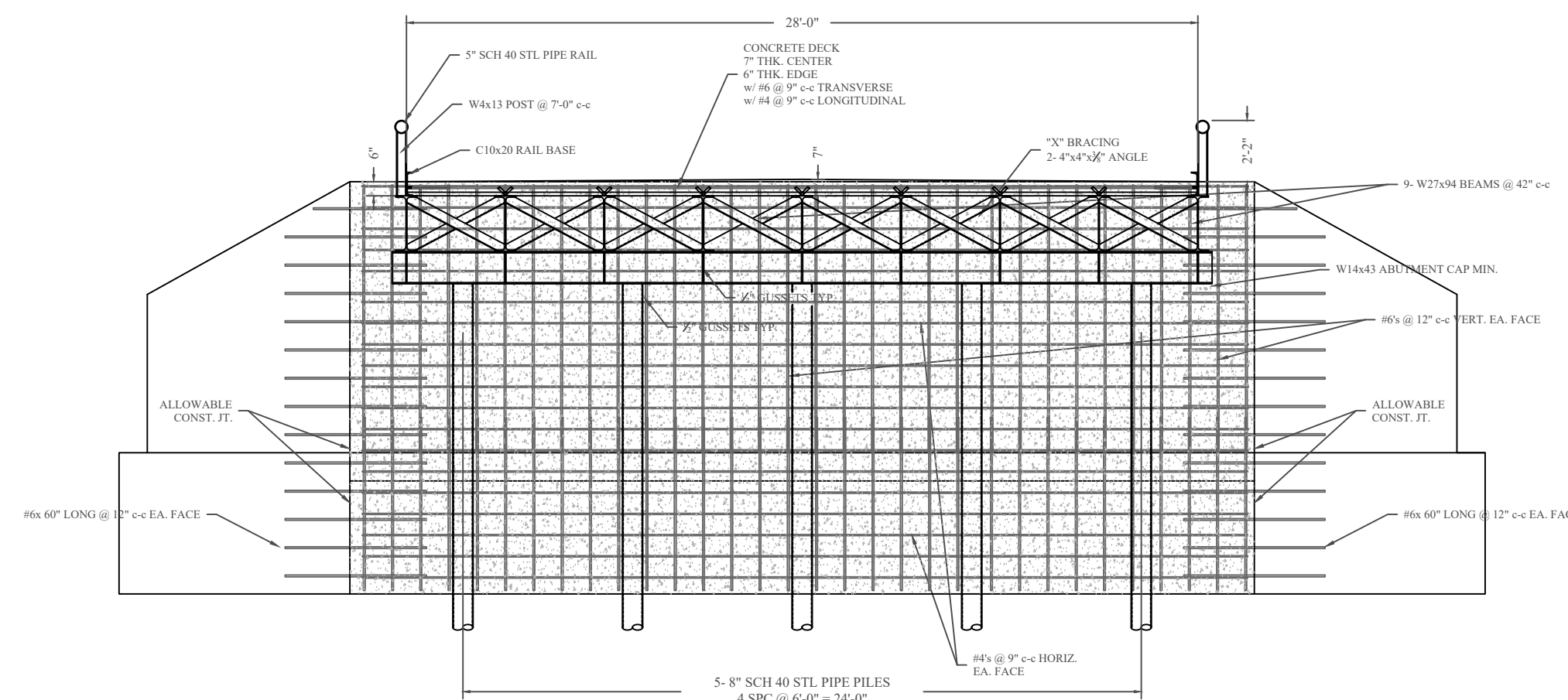


ABUTMENT #2

A SUPPORT REINFORCEMENT DETAILS
S3 SCALE: NONE



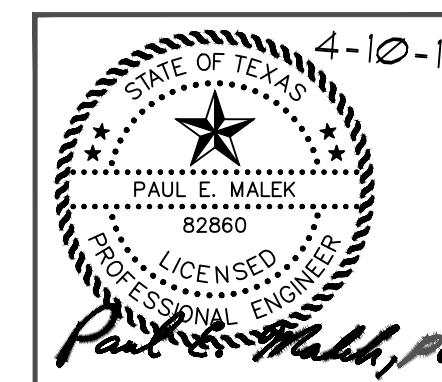
B ABUTMENT PLAN OPTIONS
S3 SCALE: NONE



C ABUTMENT PROFILE
S3 SCALE: NONE

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BRIDGE SUPPORT DETAILS
ABUTMENTS #1 & #2

APPROVED:
DRAWING NO.
S3

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