STANDARD SPECIFICATIONS:

ALL REFERENCES MADE TO THE STANDARD SPECIFICATIONS CONTAINED IN THESE STANDARD DRAWINGS SHALL BE EQUIVALENT TO MAKING REFERENCE TO THE "OKLAHOMA DEPARTMENT OF TRANSPORTATION (ODOT) 2009 STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION", APPROVED BY THE U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION ON JANUARY 4, 2010.

DISCLAIMER AND APPLICATION OF THESE STANDARD DRAWINGS:

EACH INDIVIDUAL DESIGN, DETAIL, NOTE, TABLE OR PART OF INFORMATION CONTAINED IN THESE STANDARD DRAWINGS IS ONLY APPLICABLE TO A BRIDGE CONSTRUCTED IN STRICT CONFORMANCE TO ALL RELEVANT DESIGNS, DETAILS, NOTES, TABLES AND INFORMATION CONTAINED IN THE COMPLETE SET OF THESE STANDARD DRAWINGS AND THE ODOT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION UNLESS SPECIFICALLY NOTED OTHERWISE IN THESE STANDARD DRAWINGS. SELECTING DESIGNS, DETAILS, NOTES, TABLES AND INFORMATION FROM THESE STANDARD DRAWINGS FOR USE IN DESIGNING, DETAILING, CONSTRUCTING, FABRICATING OR ERECTING OF BRIDGES THAT DO NOT CONFORM FULLY TO THESE STANDARD DRAWINGS IS STRICTLY PROHIBITED. USE OF THESE STANDARD DRAWINGS SHALL BE AT THE DIRECTION AND SUPERVISION OF A "DESIGN ENGINEER". THE DESIGN ENGINEER SHALL BE A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF OKLAHOMA. WHEN EMPLOYING ANY PART OF THESE STANDARD DRAWINGS, THE DESIGN ENGINEER SHALL BE RESPONSIBLE FOR ENSURING THESE STANDARD DRAWINGS ARE USED IN A PROPER MANNER AND APPLIED ONLY TO BRIDGES HAVING PROPERTIES THAT CONFORM TO THE SCOPE OF THESE STANDARD DRAWINGS.

SCOPE OF THESE STANDARD DRAWINGS:

SINGLE-SPAN BRIDGES ALONG A TANGENT ALIGNMENT UTILIZING EXISTING CROSSTOWN STEEL BEAMS ON CONVENTIONAL 7' OR 10' DEEP SEAT ABUTMENTS MAY BE CONSTRUCTED IN STRICT CONFORMANCE WITH THESE STANDARD DRAWINGS AND THE 2009 ODOT STANDARD SPECIFICATIONS. THE 7' DEEP SEAT ABUTMENTS ARE ONLY DESIGNED FOR NON-SKEWED (0° SKEW) BRIDGES. THE 10' DEEP SEAT ABUTMENTS MAY BE USED FOR NON-SKEWED (0° SKEW) BRIDGES, OR BRIDGES WITH 30° SKEW LEFT-FORWARD OR RIGHT-FORWARD. THESE STANDARD DRAWINGS ONLY APPLY TO SINGLE-SPAN BRIDGES WITH 26' CLEAR ROADWAY, AN 8" THICK REINFORCED CONCRETE DECK SLAB WITH 2% CROWN AT CENTERLINE OF BRIDGE, AND TR-3 CONCRETE TRAFFIC RAILS AS DETAILED IN THESE STANDARD DRAWINGS. DESIGNS FOR FOUR DIFFERENT SIZES OF CROSSTOWN STEEL BEAMS HAVE BEEN INCLUDED IN THESE STANDARD DRAWINGS: W33X130, W33X141, W36X135 AND W36X150 STEEL BEAMS. THE DESIGNS IN THESE STANDARD DRAWINGS UTILIZE A SIX BEAM SUPERSTRUCTURE WITH A UNIFORM AND EQUAL SPACING OF 6'-9½" BETWEEN BEAMS. SIX SPAN LENGTHS ARE INCLUDED IN THESE STANDARD DRAWINGS FOR EACH OF THE BEAM SIZES: 40' SPAN, 45' SPAN, 50' SPAN, 55' SPAN, 60' SPAN AND 65' SPAN (EXCEPT THAT THE W33X130 BEAM SHALL NOT BE USED FOR THE 65' SPAN).

PROFILE GRADE LINE:

THESE STANDARD DRAWINGS APPLY TO BRIDGES HAVING A PROFILE GRADE LINE WITH A 0.0% (LEVEL) LONGITUDINAL SLOPE ALONG THE FULL BRIDGE LENGTH AND WING LENGTHS.

BEVELED ANCHOR PLATES:

ALL BEARINGS SHOWN IN THESE STANDARDS WERE DESIGNED TO ALLOW UP TO A 1.0% ANGLE BETWEEN THE UNDERSIDE ON THE BEAM AND A HORIZONTAL WITHOUT REQUIRING BEVELED ANCHOR PLATES. WHEN THE ANGLE BETWEEN THE UNDERSIDE OF THE BEAM AND A HORIZONTAL EXCEEDS 1.0%, BEVELED ANCHOR PLATES SHALL BE REQUIRED. FOR ADDITIONAL INFORMATION, SEE THE BEARING STANDARD.

ABUTMENT PILING:

ALL ABUTMENT PILING SHOWN IN THESE STANDARD DRAWINGS SHALL EXTEND BELOW THE FLOW LINE OF THE BRIDGE CHANNEL, HAVE A LENGTH OF NO LESS THAN 15'-0", AND BE DRIVEN TO A REQUIRED ULTIMATE PILE CAPACITY EQUAL TO THE MAXIMUM FACTORED PILE LOADS SHOWN ON THE ABUTMENT STANDARD DRAWINGS. THE DESIGN ENGINEER SHALL CLEARLY SPECIFY SEPARATELY IN THE COUNTY BRIDGE PLANS THE FOLLOWING:

1) THE REQUIRED ULTIMATE PILE CAPACITY IN KIPS FOR EACH PILE (EQUAL TO THE MAXIMUM FACTORED PILE LOAD GIVEN IN THESE STANDARD DRAWINGS).
2) THE ODOT MODIFIED GATES EQUATION.
3) THE STATEMENTS "PILE CAPACITY SHALL BE VERIFIED USING THE ODOT MODIFIED GATES EQUATION" AND "ALL PILING SHALL BE DRIVEN THROUGH COMPACTED FILL TO POINT BEARING ON SOLID FOUNDATION MATERIAL".

SUBSTRUCTURE EXCAVATION, BACKFILL AND PIPE UNDERDRAIN:

ODOT COUNTY BRIDGE STANDARD CB26..32-C-SKO-ABUT-MISC SHOULD BE USED AS A GUIDE FOR SUBSTRUCTURE EXCAVATION, GRANULAR BACKFILL PLACEMENT, AND PIPE UNDERDRAIN ASSEMBLY PLACEMENT. GRANULAR BACKFILL SHALL BE USED TO FILL DIRECTLY BEHIND THE ABUTMENT SEAT. THE 6" PERFORATED PIPE UNDERDRAIN SHALL BE PLACED AT THE BOTTOM OF THE CURTAIN WALL ALONG THE BACK OF THE ABUTMENT WITH COARSE AND FINE COVER MATERIAL AS SHOWN IN SECTION E-E OF THE ODOT COUNTY BRIDGE STANDARD. THE 6" NON-PERFORATED PIPE UNDERDRAIN SHALL BE TRENCHED UNDER THE WING AS SHOWN IN SECTION F-F OF THE ODOT COUNTY BRIDGE STANDARD AND CONTINUE TO DAYLIGHT.

FINAL SITE GRADING:

THESE STANDARDS HAVE BEEN DEVELOPED WITH THE FOLLOWING ASSUMPTIONS FOR FINAL SITE GRADING FOR ANY BRIDGE TO BE BUILT IN ACCORDANCE WITH THESE STANDARD DRAWINGS:

TRANSVERSE ROADWAY SLOPE: ROADWAY HAS A 2% CROWN BEGINNING AT THE CENTERLINE OF ROADWAY AND ENDING 16' TO EACH SIDE OF THE CENTERLINE, AT WHICH POINT A 2(H):1(V) SLOPE BEHIND THE GUARDRAIL BEGINS AND CONTINUES AT LEAST TO THE FURTHEST POINT ON THE WINGS.

BRIDGE HEADER SLOPE: THE BRIDGE HEADER SLOPE IS 2(H):1(V) THAT BEGINS 6" ABOVE THE BOTTOM OF THE FRONT FACE OF THE ABUTMENT SEAT AND CONTINUES AT LEAST TO THE FURTHEST POINT ON THE WINGS.

ADDITIONAL SHEETS REQUIRED IN THE BRIDGE PLANS:

BRIDGE PLAN SHEETS REQUIRED IN ADDITION TO THESE STANDARD DRAWINGS MAY INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:

- TITLE SHEET
- BRIDGE GENERAL NOTES AND SUMMARY OF BRIDGE QUANTITIES
- GENERAL PLAN AND ELEVATION
- SUBSTRUCTURE STAKING DIAGRAM
- FOUNDATION REPORT AND BORING LOGS
- RIPRAP OR SLOPEWALL DETAILS

OTHER STANDARD DRAWINGS REQUIRED IN ADDITION TO THE COUNTY BRIDGE STANDARD DRAWINGS MAY INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:

ODOT "STATE" BRIDGE STANDARD DRAWINGS:
- TR3-2
- HP1-2

ODOT ROADWAY STANDARD DRAWINGS:
- PUD-3
- GRH1-1
- GRH2-1
- GET-3

DESIGN DATA:

CLASS AA CONCRETE	f'c = 4 KSI
CLASS A CONCRETE	f'c = 3 KSI
REINFORCING STEEL, AASHTO M 31 (GRADE 60)	fy = 60 KSI
EXISTING STRUCTURAL STEEL, GRADE 36	fy = 36 KSI
(1) NEW STRUCTURAL STEEL, AASHTO M 270 (GRADE 36 MIN.)	fy = 36 KSI MIN.

LOADING:
HL-93
20 PSF FUTURE WEARING SURFACE
5 PSF STAY-IN-PLACE FORMS

DESIGN:
AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 6TH EDITION
ANSI/AASHTO/AWS D1.5 BRIDGE WELDING CODE

LFD OPERATING RATING:
SEE "DETAILS OF BEAMS (40', 45' AND 50' SPANS)" STANDARD OR "DETAILS OF BEAMS (55', 60' AND 65' SPANS)" STANDARD FOR APPLICABLE LFD OPERATING RATINGS.

(1) UNLESS NOTED OTHERWISE IN THESE STANDARD DRAWINGS.

LICENSED PROFESSIONAL ENGINEER
MICHAEL B. SIMMONS
24576
OKLAHOMA
11/30/2015

DESIGN	MBS	7/15
DETAIL	SLP	7/15
CHECK	MBS	7/15

GUY ENGINEERING SERVICES, INC.

CED1 & CED8 STANDARDS

NOTES AND DESIGN INFORMATION

STANDARDS FOR SINGLE SPAN BRIDGES WITH CROSSTOWN STEEL BEAMS, 7' OR 10' DEEP SEAT CONVENTIONAL ABUTMENTS, 26' CLEAR ROADWAY

2009 SPECIFICATIONS | CTSBSTD-DESIGN-7FT..10FT-SKO..30 | R0

QUANTITIES – 7' DEEP SEAT ABUTMENT ① (0° SKEW)
(ONE ABUTMENT SHOWN)

ITEM	UNIT	TOTAL
SUBSTRUCTURE EXCAVATION COMMON	C.Y.	146.00
GRANULAR BACKFILL	C.Y.	74.00
CLASS A CONCRETE	C.Y.	72.70
② REINFORCING STEEL	LB.	10,050.00
PILES, FURNISHED (HP 10X42)	L.F.	–
PILES, FURNISHED (HP 12X53)	L.F.	–
PILES, DRIVEN (HP 10X42)	L.F.	–
PILES, DRIVEN (HP 12X53)	L.F.	–
6" PERFORATED PIPE UNDERDRAIN ROUND	L.F.	26.00
6" NON–PERF. PIPE UNDERDRAIN RND.	L.F.	–

① INCLUDES BOTH WINGS.

② QUANTITY INCLUDES THREE P3 BARS IN PEDESTALS THAT ARE ONLY REQUIRED WHEN USING W33X130 OR W33X141 BEAMS. SUBTRACT 30 POUNDS WHEN USING W36X135 OR W36X150 BEAMS.

QUANTITIES – 10' DEEP SEAT ABUTMENT ③ (0° SKEW)
(ONE ABUTMENT SHOWN)

ITEM	UNIT	TOTAL
SUBSTRUCTURE EXCAVATION COMMON	C.Y.	147.00
GRANULAR BACKFILL	C.Y.	164.00
CLASS A CONCRETE	C.Y.	96.90
④ REINFORCING STEEL	LB.	9,880.00
PILES, FURNISHED (HP 10X42)	L.F.	–
PILES, FURNISHED (HP 12X53)	L.F.	–
PILES, DRIVEN (HP 10X42)	L.F.	–
PILES, DRIVEN (HP 12X53)	L.F.	–
6" PERFORATED PIPE UNDERDRAIN ROUND	L.F.	37.00
6" NON–PERF. PIPE UNDERDRAIN RND.	L.F.	–

③ INCLUDES BOTH WINGS.

④ QUANTITY INCLUDES THREE P3 BARS IN PEDESTALS THAT ARE ONLY REQUIRED WHEN USING W33X130 OR W33X141 BEAMS. SUBTRACT 30 POUNDS WHEN USING W36X135 OR W36X150 BEAMS.

QUANTITIES – 10' DEEP SEAT ABUTMENT ⑤ (30° SKEW)
(ONE ABUTMENT SHOWN)

ITEM	UNIT	TOTAL
SUBSTRUCTURE EXCAVATION COMMON	C.Y.	168.00
GRANULAR BACKFILL	C.Y.	184.00
CLASS A CONCRETE	C.Y.	109.80
⑥ REINFORCING STEEL	LB.	12,830.00
PILES, FURNISHED (HP 10X42)	L.F.	–
PILES, FURNISHED (HP 12X53)	L.F.	–
PILES, DRIVEN (HP 10X42)	L.F.	–
PILES, DRIVEN (HP 12X53)	L.F.	–
6" PERFORATED PIPE UNDERDRAIN ROUND	L.F.	41.00
6" NON–PERF. PIPE UNDERDRAIN RND.	L.F.	–

⑤ INCLUDES BOTH WINGS (ONE LONG WING AND ONE SHORT WING).

⑥ QUANTITY INCLUDES THREE P3 BARS IN PEDESTALS THAT ARE ONLY REQUIRED WHEN USING W33X130 OR W33X141 BEAMS. SUBTRACT 30 POUNDS WHEN USING W36X135 OR W36X150 BEAMS.

SUMMARY OF SUPERSTRUCTURE QUANTITIES (0° SKEW)

SPAN	SAW–CUT GROOVING	CONCRETE RAIL (TR3)	STRUCTURAL STEEL ⑦	WEATHERING STEEL FIXED BEARING ASSEMBLY ⑧	WEATHERING STEEL EXPANSION BEARING ASSEMBLY ⑧	CLASS AA CONCRETE	REINFORCING STEEL ⑨
40'	124.80	86.40	4,710.00	5.00	5.00	32.70	8,570.00
45'	139.20	96.40	4,710.00	5.00	5.00	36.30	9,410.00
50'	153.60	106.40	4,710.00	5.00	5.00	40.00	10,420.00
55'	168.10	116.40	6,010.00	5.00	5.00	43.70	11,260.00
60'	182.50	126.40	6,010.00	5.00	5.00	47.50	12,430.00
65'	197.00	136.40	6,010.00	5.00	5.00	51.30	13,260.00

⑦ QUANTITIES SHOWN INCLUDE THE WEIGHT OF BEARING STIFFENERS, INTERMEDIATE STIFFENERS, END DIAPHRAGMS WITH GUSSET PLATES, INTERMEDIATE DIAPHRAGMS, BOLTS, NUTS AND TWO STEEL ANGLE BUMPERS (ONE AT EACH END OF THE DECK SLAB). QUANTITIES SHOWN DO NOT INCLUDE THE WEIGHT OF THE CROSSTOWN BEAMS OR ANY ADDITIONAL SHEAR CONNECTORS NEEDED TO MEET THE REQUIREMENTS OF THESE STANDARDS. COST OF ADDITIONAL SHEAR CONNECTORS NECESSARY TO MEET THE REQUIREMENTS OF THESE STANDARDS SHALL NOT BE MEASURED FOR PAYMENT AND SHALL BE INCLUDED IN OTHER ITEMS OF WORK. FOR EACH STEEL ANGLE BUMPER OMITTED FROM THE ENDS OF THE DECK SLAB, DEDUCT 110 POUNDS FROM THE QUANTITIES SHOWN.

⑧ PROVIDE AND INSTALL FIXED OR EXPANSION BEARING ASSEMBLIES OF THE SIZE, SHAPE AND LOCATION AS DETAILED IN THESE STANDARDS. THE ESTIMATED QUANTITY OF STRUCTURAL STEEL IN EACH FIXED OR EXPANSION BEARING ASSEMBLY IS 120 POUNDS. ALL COST OF PROVIDING AND INSTALLING THE FIXED OR EXPANSION BEARING ASSEMBLIES INCLUDING THE COST OF STEEL REINFORCED ELASTOMERIC BEARING PADS, ANCHOR PLATES, ANCHOR BOLTS, NUTS, WASHERS, MATERIAL, LABOR, EQUIPMENT AND INCIDENTALS SHALL BE INCLUDED IN THE UNIT PRICE BID PER EACH OF "WEATHERING STEEL FIXED BEARING ASSEMBLY" OR "WEATHERING STEEL EXPANSION BEARING ASSEMBLY".

⑨ QUANTITIES SHOWN INCLUDE PROVISION FOR LAP SPLICES REQUIRED IN THE LONGITUDINAL DECK REINFORCING STEEL AS FOLLOWS:
40' THRU 55' SPANS – NO LAP SPLICES
60' AND 65' SPANS – 1 LAP SPLICE

SUMMARY OF SUPERSTRUCTURE QUANTITIES (30° SKEW)

SPAN	SAW–CUT GROOVING	CONCRETE RAIL (TR3)	STRUCTURAL STEEL ⑩	WEATHERING STEEL FIXED BEARING ASSEMBLY ⑪	WEATHERING STEEL EXPANSION BEARING ASSEMBLY ⑪	CLASS AA CONCRETE	REINFORCING STEEL ⑫
40'	130.70	90.50	5,550.00	5.00	5.00	34.80	9,150.00
45'	145.10	100.50	5,550.00	5.00	5.00	38.40	10,170.00
50'	159.60	110.50	5,550.00	5.00	5.00	42.10	11,000.00
55'	174.00	120.50	6,850.00	5.00	5.00	45.80	12,020.00
60'	188.50	130.50	6,850.00	5.00	5.00	49.60	13,010.00
65'	202.90	140.50	6,850.00	5.00	5.00	53.40	14,020.00

⑩ QUANTITIES SHOWN INCLUDE THE WEIGHT OF BEARING STIFFENERS; INTERMEDIATE STIFFENERS, END DIAPHRAGMS WITH BENT PLATES, INTERMEDIATE DIAPHRAGMS, BOLTS, NUTS AND TWO STEEL ANGLE BUMPERS (ONE AT EACH END OF THE DECK SLAB). QUANTITIES SHOWN DO NOT INCLUDE THE WEIGHT OF THE CROSSTOWN BEAMS OR ANY ADDITIONAL SHEAR CONNECTORS NEEDED TO MEET THE REQUIREMENTS OF THESE STANDARDS. COST OF ADDITIONAL SHEAR CONNECTORS NECESSARY TO MEET THE REQUIREMENTS OF THESE STANDARDS SHALL NOT BE MEASURED FOR PAYMENT AND SHALL BE INCLUDED IN OTHER ITEMS OF WORK. FOR EACH STEEL ANGLE BUMPER OMITTED FROM THE ENDS OF THE DECK SLAB, DEDUCT 130 POUNDS FROM THE QUANTITIES SHOWN.

⑪ PROVIDE AND INSTALL FIXED OR EXPANSION BEARING ASSEMBLIES OF THE SIZE, SHAPE AND LOCATION AS DETAILED IN THESE STANDARDS. THE ESTIMATED QUANTITY OF STRUCTURAL STEEL IN EACH FIXED OR EXPANSION BEARING ASSEMBLY IS 120 POUNDS. ALL COST OF PROVIDING AND INSTALLING THE FIXED OR EXPANSION BEARING ASSEMBLIES INCLUDING THE COST OF STEEL REINFORCED ELASTOMERIC BEARING PADS, ANCHOR PLATES, ANCHOR BOLTS, NUTS, WASHERS, MATERIAL, LABOR, EQUIPMENT AND INCIDENTALS SHALL BE INCLUDED IN THE UNIT PRICE BID PER EACH OF "WEATHERING STEEL FIXED BEARING ASSEMBLY" OR "WEATHERING STEEL EXPANSION BEARING ASSEMBLY".

⑫ QUANTITIES SHOWN INCLUDE PROVISION FOR LAP SPLICES REQUIRED IN THE LONGITUDINAL DECK REINFORCING STEEL AS FOLLOWS:
40' THRU 55' SPANS – NO LAP SPLICES
60' AND 65' SPANS – 1 LAP SPLICE

11/30/2015

DESIGN	MBS	7/15
DETAIL	SLP	7/15
CHECK	MBS	7/15

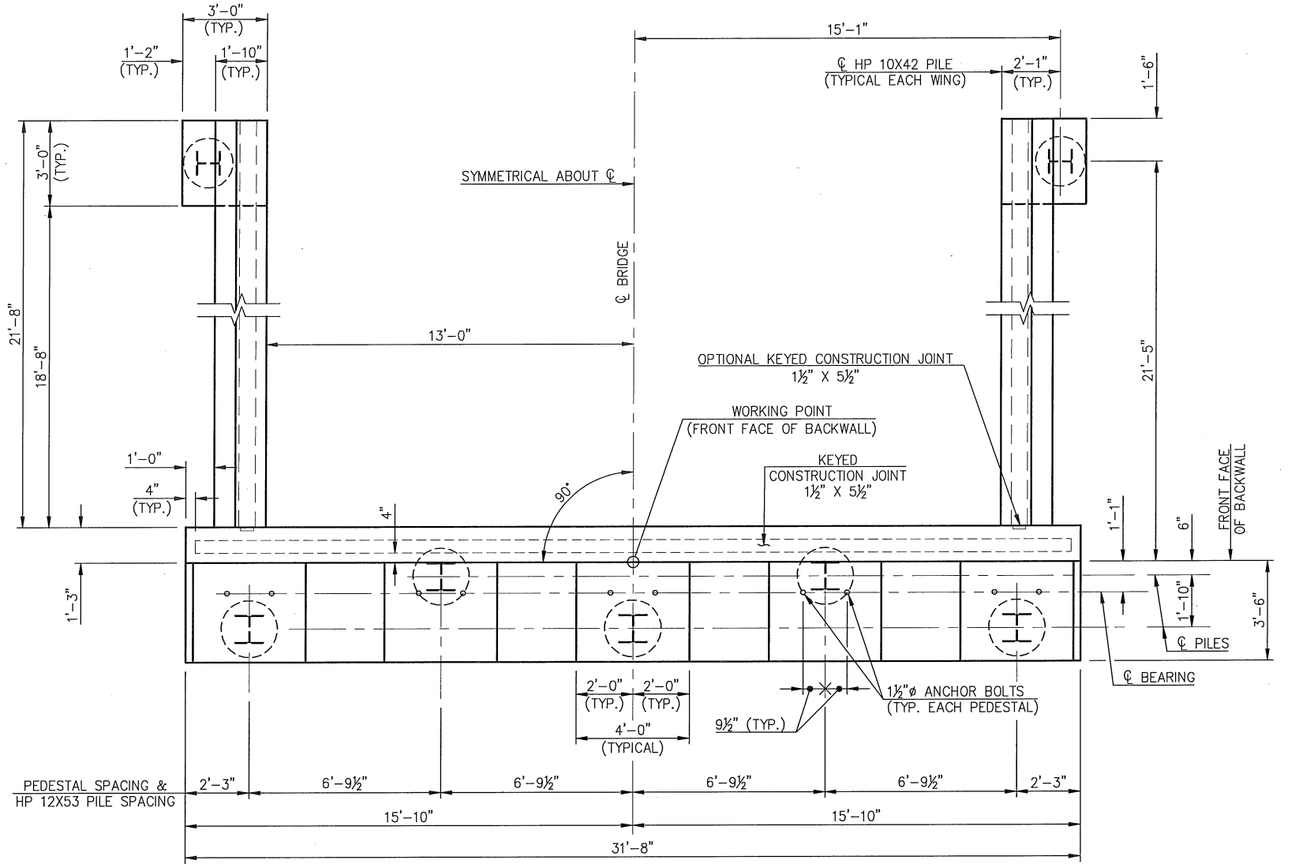
GUY ENGINEERING SERVICES, INC.

CED1 & CED8 STANDARDS

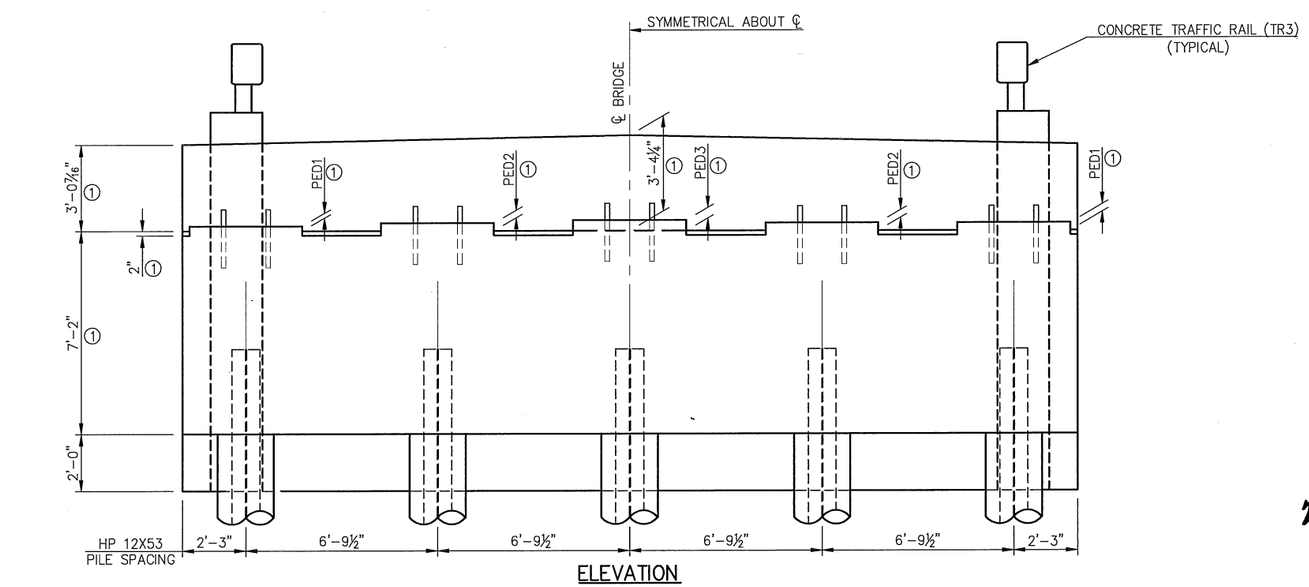
SUMMARY OF BRIDGE QUANTITIES

STANDARDS FOR SINGLE SPAN BRIDGES WITH CROSSTOWN STEEL BEAMS, 7' OR 10' DEEP SEAT CONVENTIONAL ABUTMENTS, 26' CLEAR ROADWAY

2009 SPECIFICATIONS | CTSBSTD–QUANT–7FT..10FT–SK0..30 | R0



PLAN

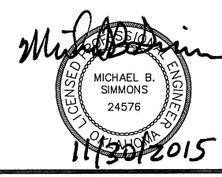


ELEVATION

① DIMENSIONS ARE FROM TOP OF BRIDGE SEAT AT FRONT FACE OF BACKWALL.

PILE SCHEDULE	
SPAN	MAXIMUM FACTORED PILE LOAD
40'	68.4 TON
45'	71.2 TON
50'	73.9 TON
55'	76.5 TON
60'	79.0 TON
65'	81.5 TON

PEDESTAL HEIGHT SCHEDULE			
BEAM SIZE	PED1	PED2	PED3
W33 X 130	4¾"	6⅜"	8"
W33 X 141	4⅝"	6¼"	7⅞"
W36 X 135	2⅜"	4"	5⅝"
W36 X 150	2"	3⅝"	5¼"



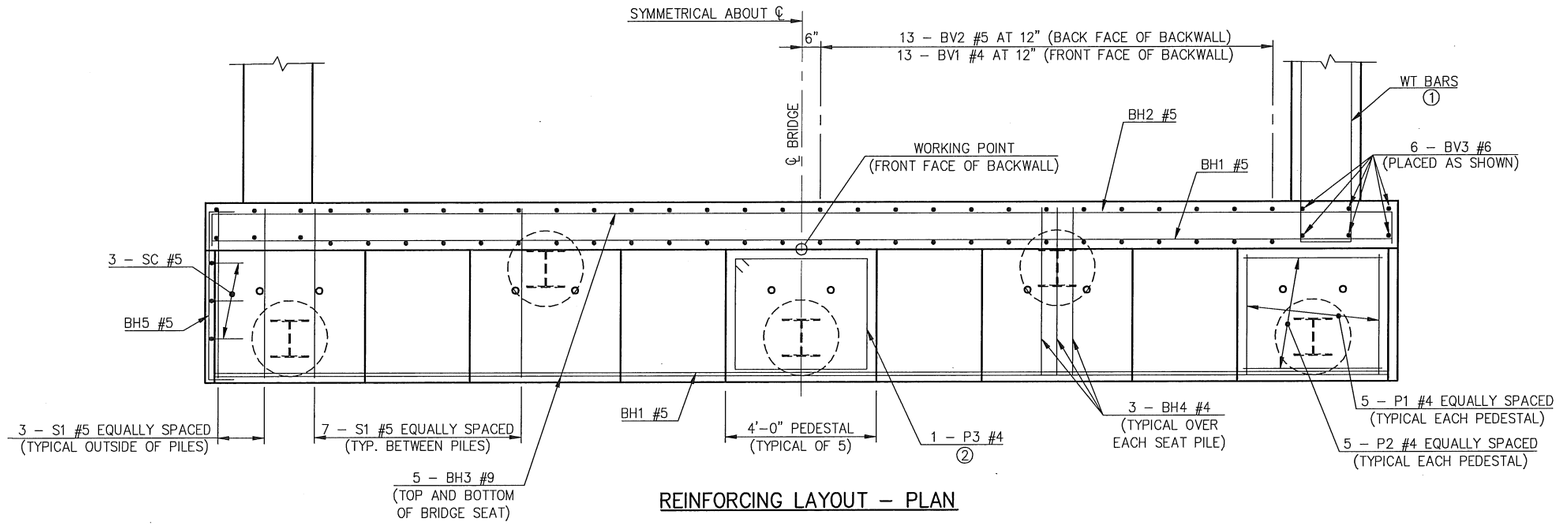
DESIGN	MBS	11/15
DETAIL	JDD	11/15
CHECK	MBS	11/15
GUY ENGINEERING SERVICES, INC.		

CED1 & CED8 STANDARDS

DETAILS OF 7' DEEP SEAT ABUTMENT (0° SKEW) (SHEET NO. 1 OF 3)

STANDARDS FOR SINGLE SPAN BRIDGES WITH CROSSTOWN STEEL BEAMS, 7' OR 10' DEEP SEAT CONVENTIONAL ABUTMENTS, 26' CLEAR ROADWAY

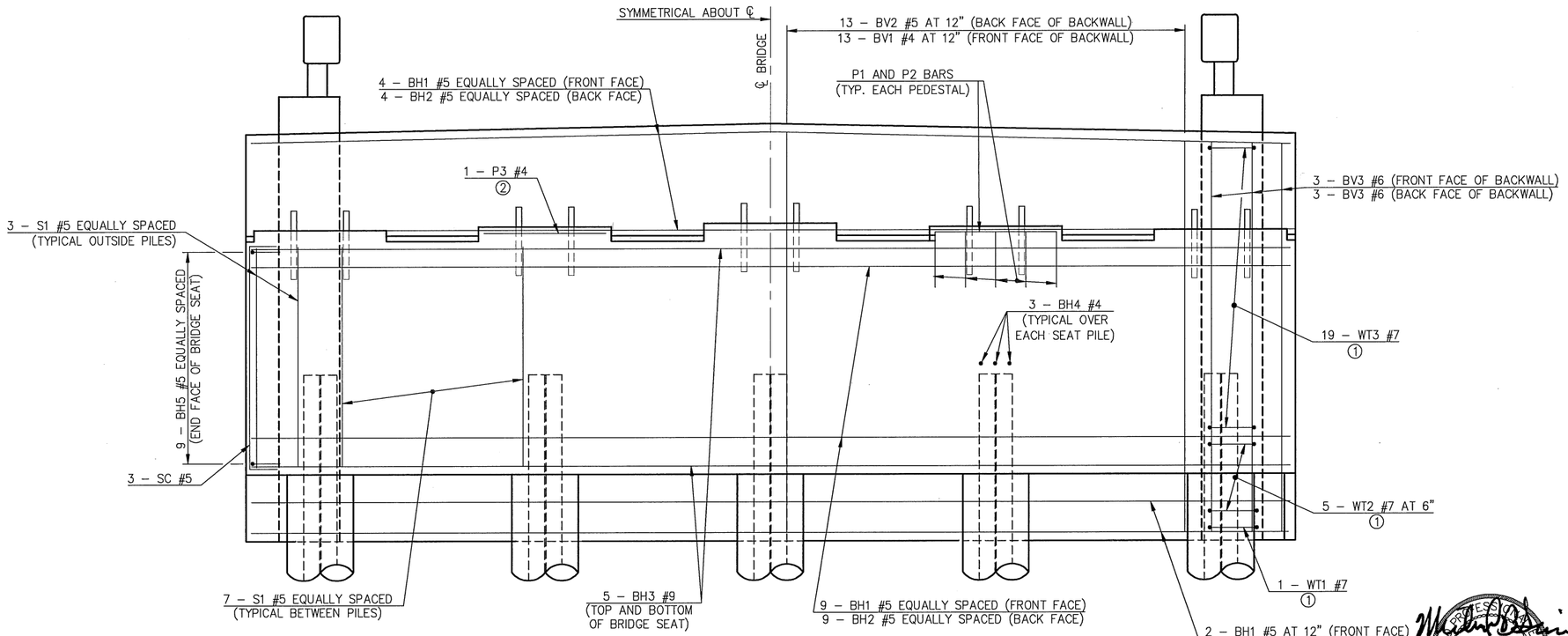
2009 SPECIFICATIONS | CTSBSTD-ABUT-7FT-SK0-1 | R0



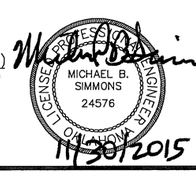
REINFORCING LAYOUT – PLAN

① ALL WT WING REINFORCING STEEL TIED TO THE ABUTMENT BRIDGE SEAT, BACKWALL AND CURTAIN WALL REINFORCING STEEL MUST BE IN PLACE PRIOR TO POURING ABUTMENT CONCRETE. FOR ADDITIONAL INFORMATION, SEE STANDARD CTSBSTD–WING–7FT–SKO.

② INCLUDE ONE P3 #4 BAR IN EACH OF THE THREE INTERIOR PEDESTALS ONLY WHEN USING W33X130 AND W33X141 BEAMS. P3 #4 BARS SHALL BE PLACED HORIZONTALLY AT THE MID–HEIGHT OF THE PEDESTAL WHERE REQUIRED.



REINFORCING LAYOUT – ELEVATION



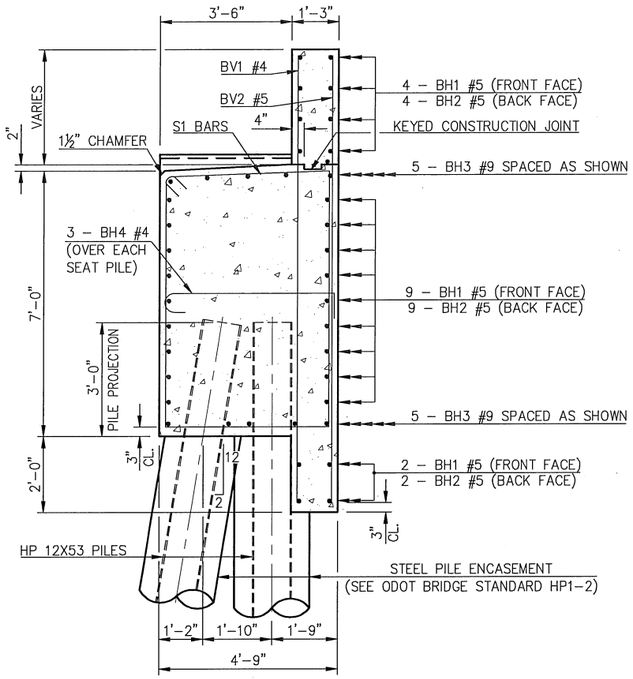
DESIGN	MBS	11/15
DETAIL	JDD	11/15
CHECK	MBS	11/15
GUY ENGINEERING SERVICES, INC.		

CED1 & CED8 STANDARDS

DETAILS OF 7' DEEP SEAT ABUTMENT (0° SKEW) (SHEET NO. 2 OF 3)

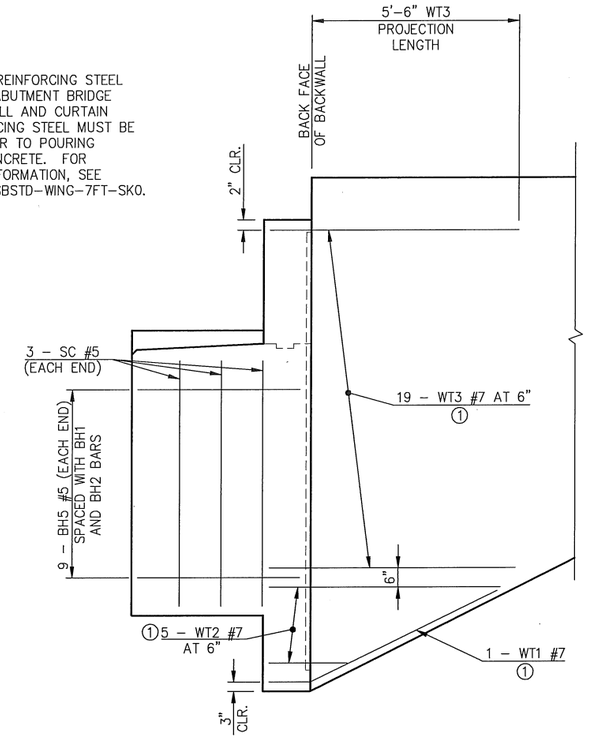
STANDARDS FOR SINGLE SPAN BRIDGES WITH CROSSTOWN STEEL BEAMS, 7' OR 10' DEEP SEAT CONVENTIONAL ABUTMENTS, 26' CLEAR ROADWAY

2009 SPECIFICATIONS | CTSBSTD–ABUT–7FT–SKO–2 | RO



TYPICAL SECTION THRU ABUTMENT

① ALL WT WING REINFORCING STEEL TIED TO THE ABUTMENT BRIDGE SEAT, BACKWALL AND CURTAIN WALL REINFORCING STEEL MUST BE IN PLACE PRIOR TO POURING ABUTMENT CONCRETE. FOR ADDITIONAL INFORMATION, SEE STANDARD CTSBSTD–WING–7FT–SKO.



TYPICAL END VIEW REINFORCING LAYOUT

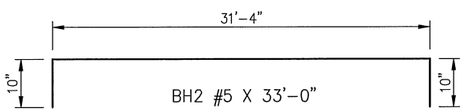
(ONLY WT WING BARS AND END REINFORCING FOR THE BRIDGE SEAT ARE SHOWN FOR CLARITY)

ABUTMENT BAR LIST ④ (ONE ABUTMENT SHOWN)					
MARK	SIZE	NO.	FORM	LENGTH	LENGTH VARIATION
BH1	#5	15	STR.	31'–4"	
BH2	#5	15	BNT.	33'–0"	
BH3	#9	10	STR.	31'–4"	
BH4	#4	15	BNT.	5'–7"	
BH5	#5	18	BNT.	6'–1"	
② BV1	#4	26	STR.	11'–11½"AVG.	11'–10" TO 12'–1"
② BV2	#5	26	STR.	11'–11½"AVG.	11'–10" TO 12'–1"
BV3	#6	12	STR.	11'–9"	
P1	#4	25	BNT.	6'–10"	
P2	#4	25	BNT.	7'–4"	
③ P3	#4	3	BNT.	14'–5"	
SC	#5	6	BNT.	8'–4"	
S1	#5	34	BNT.	23'–1"	
WT1	#7	2	BNT.	14'–8"	
WT2	#7	10	BNT.	9'–6" AVG.	5'–6" TO 13'–6"
WT3	#7	38	BNT.	14'–8"	

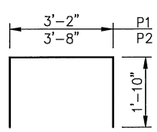
② NUMBER INCLUDES TWO SETS OF 13 BARS.

③ REQUIRED ONLY WHEN USING W33X130 OR W33X141 BEAMS.

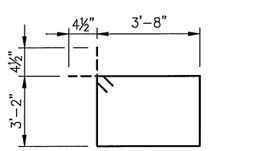
④ EXCLUDES WINGS.



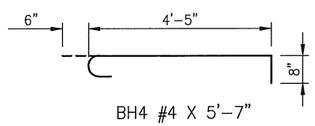
BH2 #5 X 33'–0"



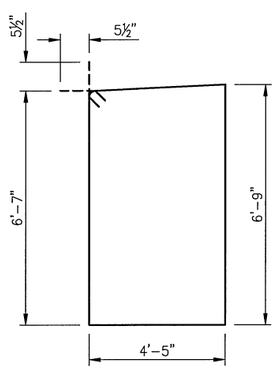
P1 #4 X 6'–10"
P2 #4 X 7'–4"



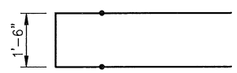
P3 #4 X 14'–5" ③



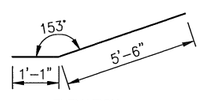
BH4 #4 X 5'–7"



S1 #5 X 23'–1"

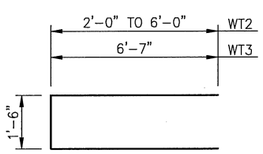


PLAN

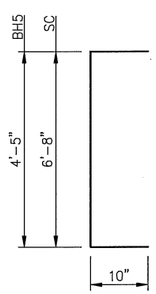


ELEVATION

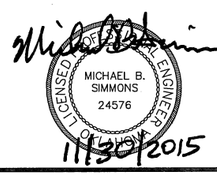
WT1 #7 X 14'–8"



WT2 #7 X 9'–6" AVG.
WT3 #7 X 14'–8"



BH5 #5 X 6'–1"
SC #5 X 8'–4"



DESIGN	MBS	11/15
DETAIL	JDD	11/15
CHECK	MBS	11/15
GUY ENGINEERING SERVICES, INC.		

CED1 & CED8 STANDARDS

DETAILS OF 7' DEEP SEAT ABUTMENT (0° SKEW) (SHEET NO. 3 OF 3)

STANDARDS FOR SINGLE SPAN BRIDGES WITH CROSSTOWN STEEL BEAMS, 7' OR 10' DEEP SEAT CONVENTIONAL ABUTMENTS, 26' CLEAR ROADWAY

2009 SPECIFICATIONS | CTSBSTD–ABUT–7FT–SKO–3 | R0

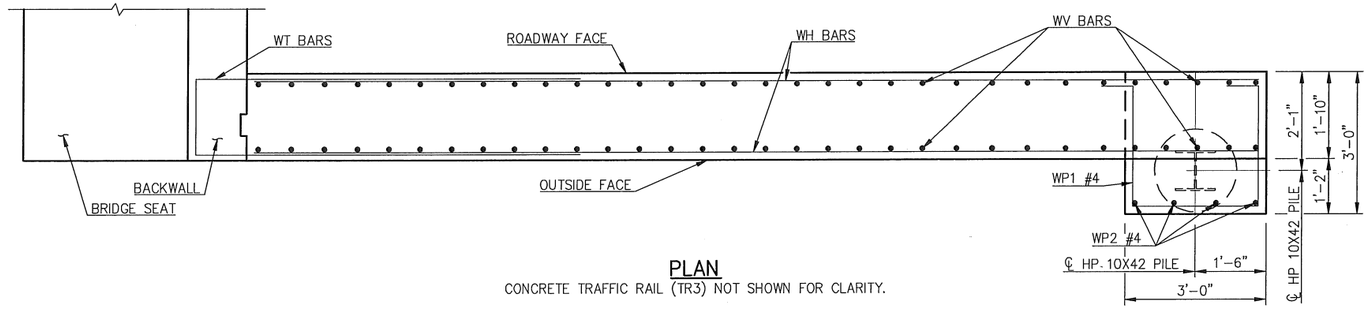
Monday, November 30, 2015 7:30:49 AM
V:\15–963N Deep Seat Abutments & SS Standards\STRUCTURAL\DWG\CED1–STD–7FT ABUTMENT.dwg

WING BAR LIST
(ONE WING SHOWN, TWO REQUIRED PER ABUTMENT)

MARK	SIZE	NO.	FORM	LENGTH	LENGTH VARIATION
② SR2	#5	73	STR.	3'–9"	
WH1	#7	2	BNT.	23'–6"	
③ WH2	#7	26	STR.	11'–9" AVG.	5'–9" TO 17'–9"
WH3	#7	16	STR.	21'–4"	
WP1	#4	3	BNT.	9'–4"	
WP2	#4	4	STR.	1'–7"	
WV1	#6	28	STR.	8'–3" AVG.	3'–9" TO 12'–9"
WV2	#4	28	STR.	8'–3" AVG.	3'–9" TO 12'–9"
WV3	#6	5	STR.	3'–7"	
WV4	#4	5	STR.	3'–7"	

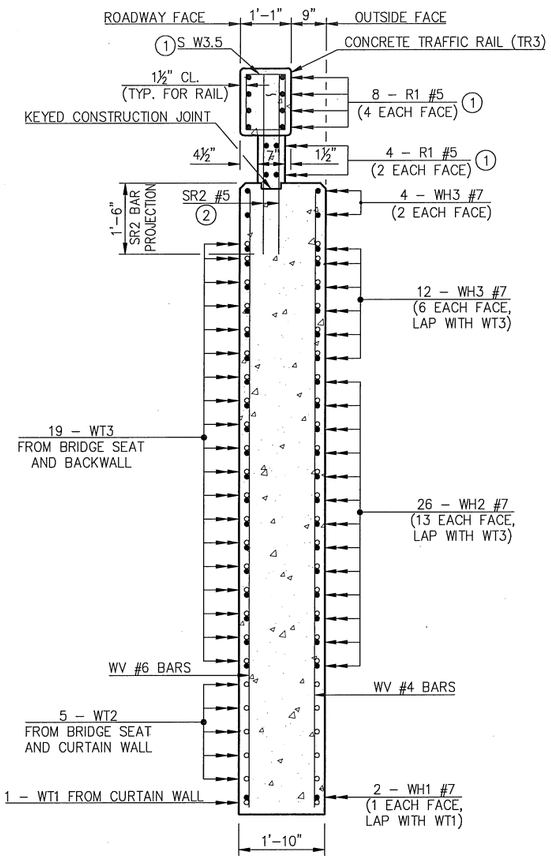
② SUBSTITUTE SR2 BARS SHOWN IN THESE PLANS FOR SR1 BARS SHOWN ON ODOT BRIDGE STANDARD TR3–2.

③ NUMBER INCLUDES 2 SETS OF 13 BARS.



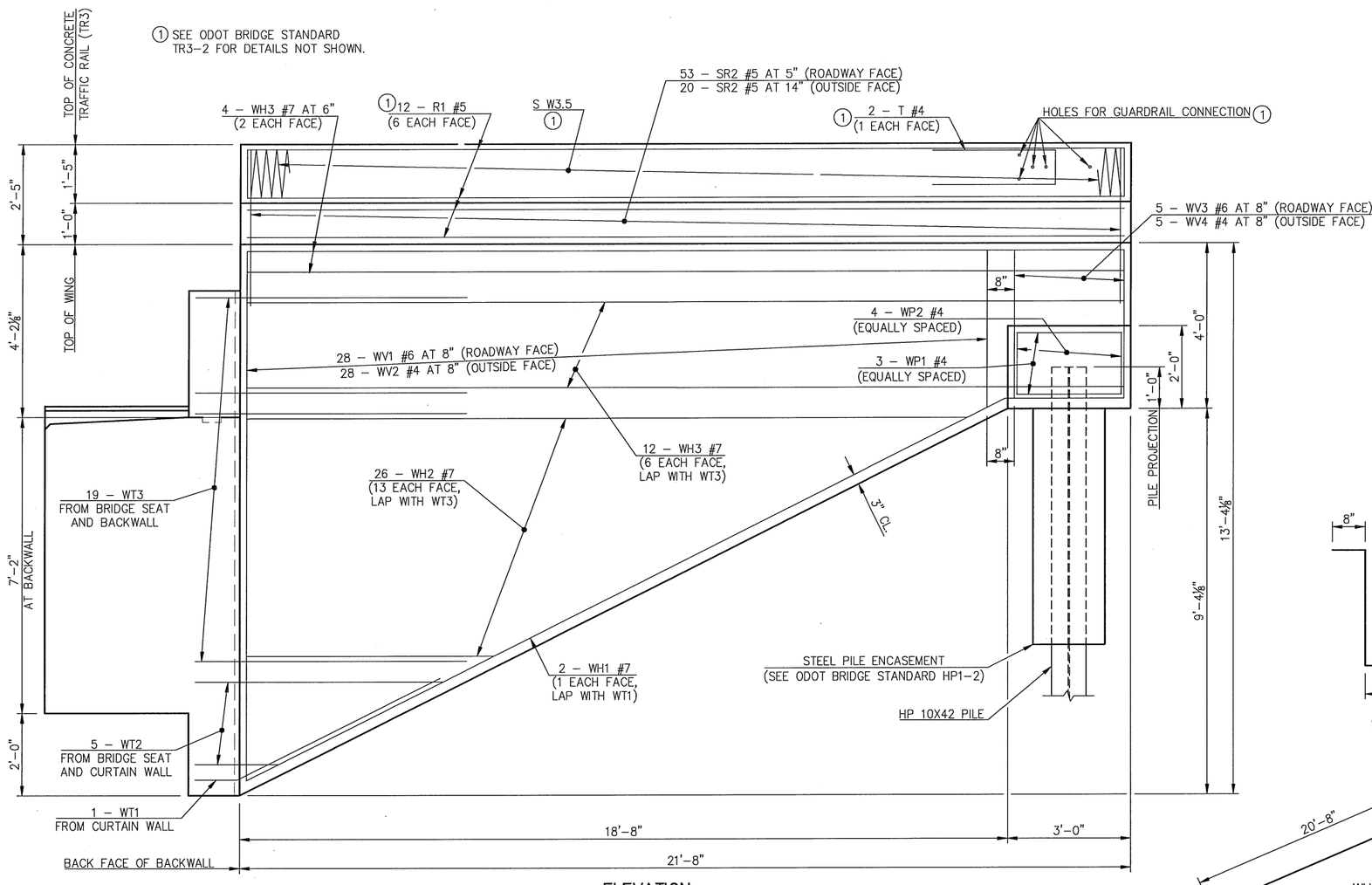
PLAN

CONCRETE TRAFFIC RAIL (TR3) NOT SHOWN FOR CLARITY.

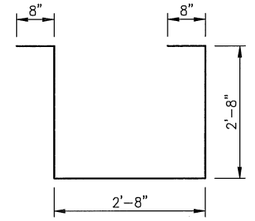


SECTION THROUGH WING AT BACK FACE OF BACKWALL

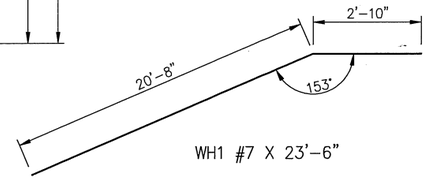
① SEE ODOT BRIDGE STANDARD TR3–2 FOR DETAILS NOT SHOWN.



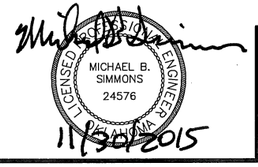
ELEVATION



WP1 #4 X 9'–4"



WH1 #7 X 23'–6"



DESIGN	MBS	11/15
DETAIL	JDD	11/15
CHECK	MBS	11/15
GUY ENGINEERING SERVICES, INC.		

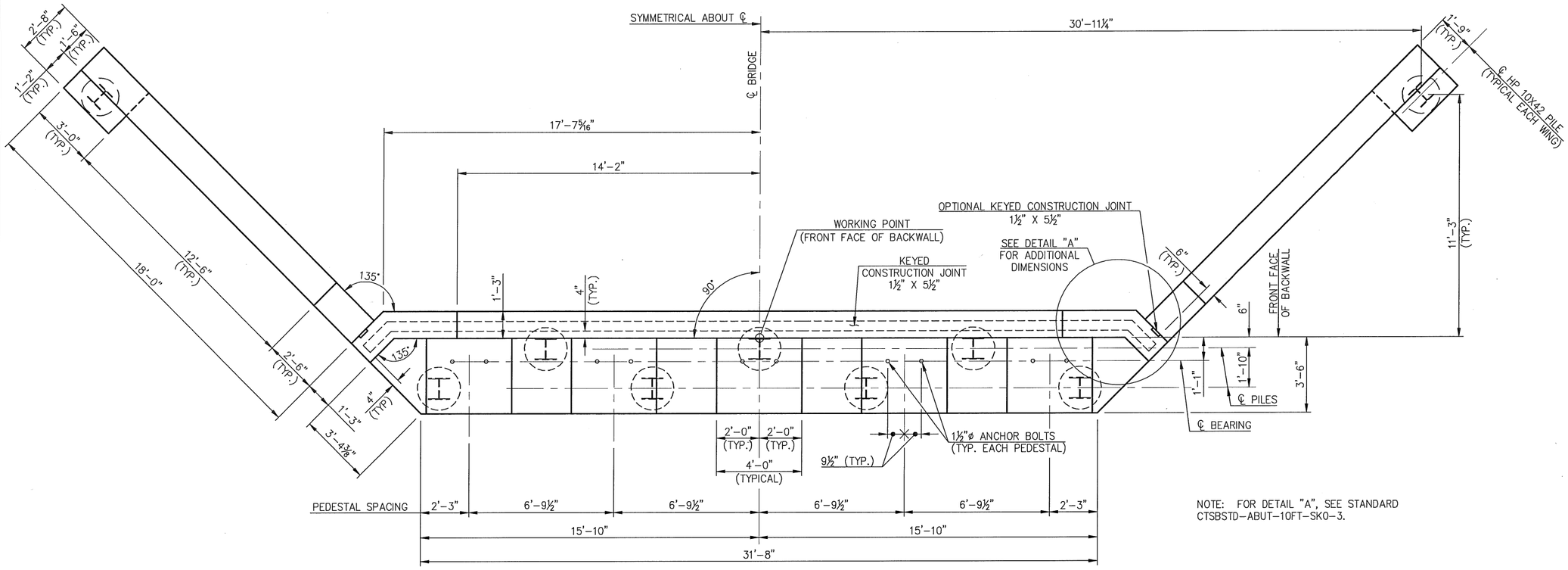
CED1 & CED8 STANDARDS

DETAILS OF WINGS FOR 7' DEEP SEAT ABUTMENT (0° SKEW)

STANDARDS FOR SINGLE SPAN BRIDGES WITH CROSSTOWN STEEL BEAMS, 7' OR 10' DEEP SEAT CONVENTIONAL ABUTMENTS, 26' CLEAR ROADWAY

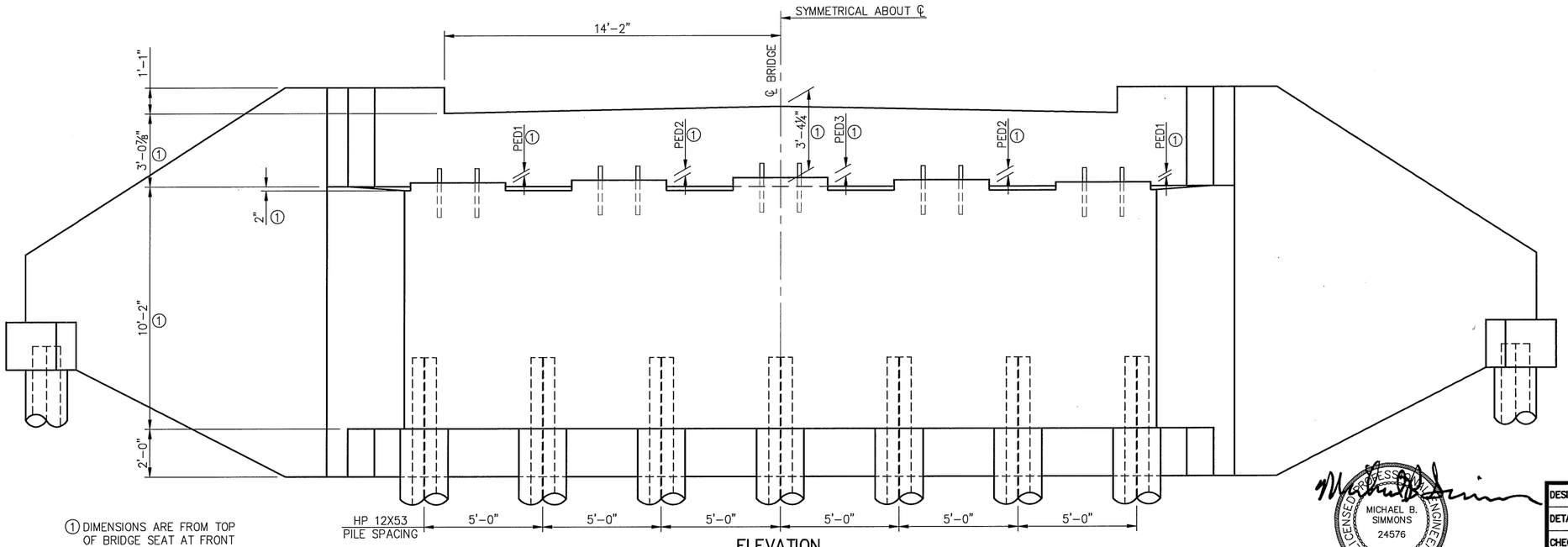
2009 SPECIFICATIONS | CTSBSTD–WING–7FT–SK0 | R0

Monday, November 30, 2015 7:31:02 AM
V:\15-963N Deep Seat Abutments & SS Standards\STRUCTURAL\DWG\CED1-STD-7FT ABUTMENT.dwg



PLAN

NOTE: FOR DETAIL "A", SEE STANDARD CTSBSTD-ABUT-10FT-SK0-3.



ELEVATION

① DIMENSIONS ARE FROM TOP OF BRIDGE SEAT AT FRONT FACE OF BACKWALL.

PILE SCHEDULE	
SPAN	MAXIMUM FACTORED PILE LOAD
40'	65.6 TON
45'	67.8 TON
50'	70.0 TON
55'	72.2 TON
60'	74.4 TON
65'	76.6 TON

PEDESTAL HEIGHT SCHEDULE			
BEAM SIZE	PED1	PED2	PED3
W33 X 130	4¾"	6⅜"	8"
W33 X 141	4⅝"	6¼"	7⅞"
W36 X 135	2⅜"	4"	5⅝"
W36 X 150	2"	3⅝"	5¼"

DESIGN	MBS	7/15
DETAIL	SLP	7/15
CHECK	MBS	7/15
GUY ENGINEERING SERVICES, INC.		

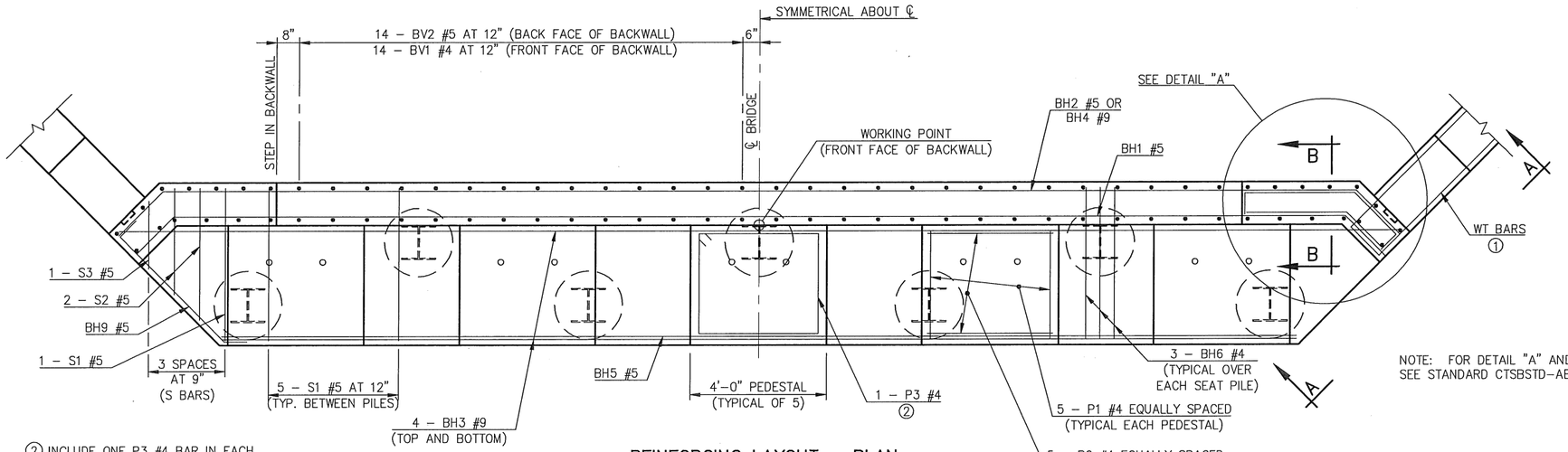
CED1 & CED8 STANDARDS

DETAILS OF 10' DEEP SEAT ABUTMENT (0° SKEW)

(SHEET NO. 1 OF 3)

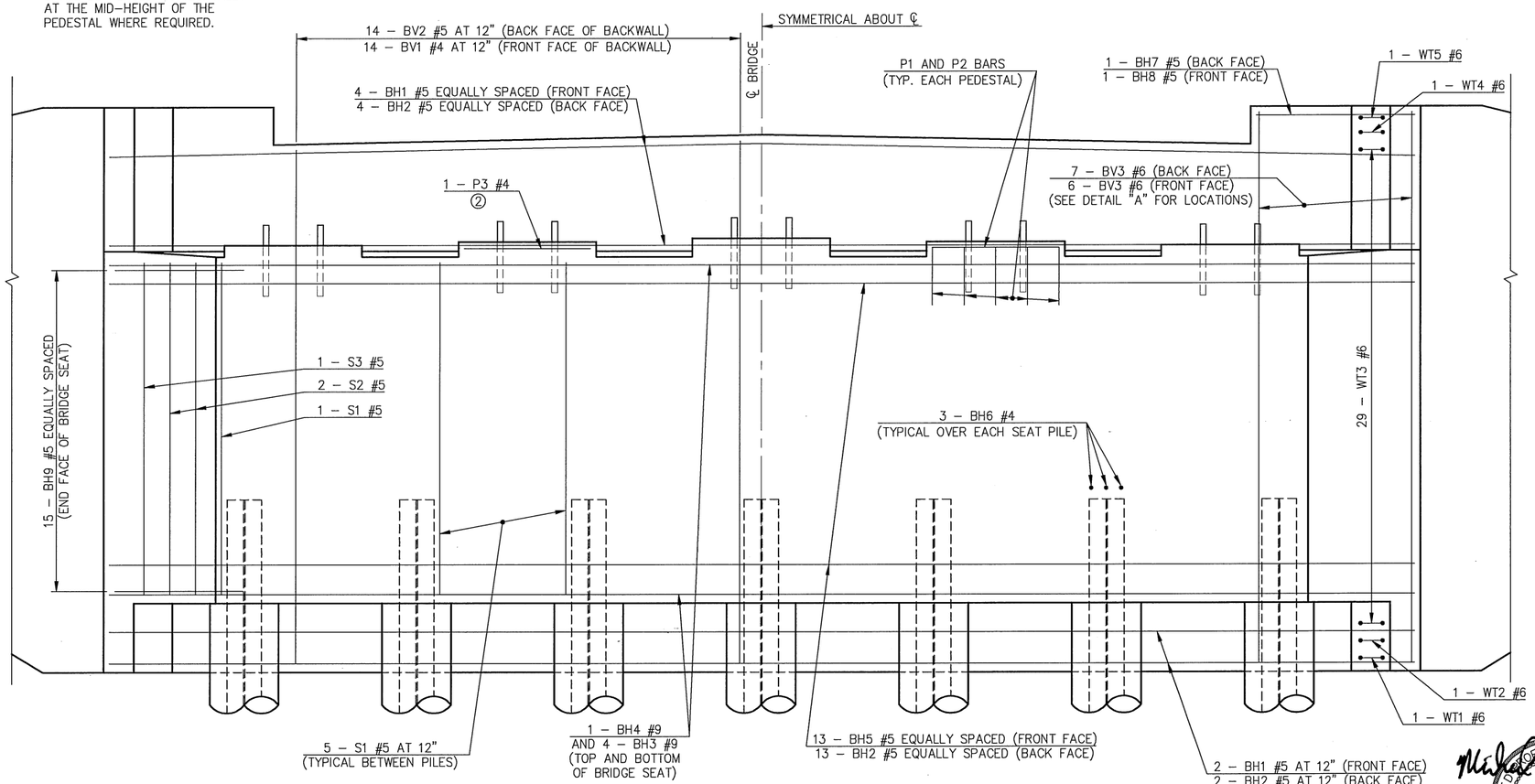
STANDARDS FOR SINGLE SPAN BRIDGES WITH CROSSTOWN STEEL BEAMS, 7' OR 10' DEEP SEAT CONVENTIONAL ABUTMENTS, 26' CLEAR ROADWAY

2009 SPECIFICATIONS | CTSBSTD-ABUT-10FT-SK0-1 | R0



REINFORCING LAYOUT – PLAN

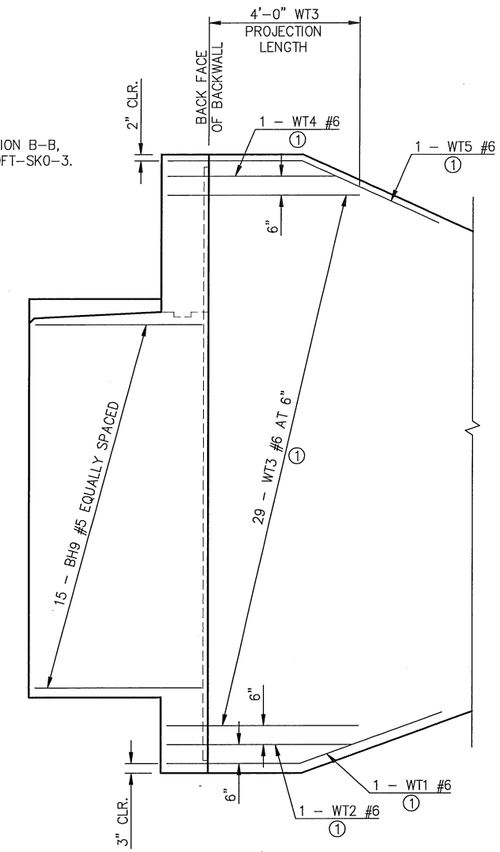
② INCLUDE ONE P3 #4 BAR IN EACH OF THE THREE INTERIOR PEDESTALS ONLY WHEN USING W33X130 AND W33X141 BEAMS. P3 #4 BARS SHALL BE PLACED HORIZONTALLY AT THE MID–HEIGHT OF THE PEDESTAL WHERE REQUIRED.



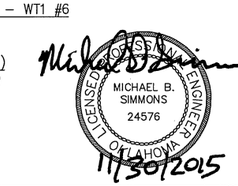
REINFORCING LAYOUT – ELEVATION

① ALL WT WING REINFORCING STEEL TIED TO THE ABUTMENT BRIDGE SEAT, BACKWALL AND CURTAIN WALL REINFORCING STEEL MUST BE IN PLACE PRIOR TO POURING ABUTMENT CONCRETE. FOR ADDITIONAL INFORMATION, SEE "DETAILS OF WINGS (0° SKEW)" STANDARD.

NOTE: FOR DETAIL "A" AND SECTION B–B, SEE STANDARD CTSBSTD–ABUT–10FT–SK0–3.



SECTION A–A
END VIEW REINFORCING LAYOUT
(ONLY WT WING BARS AND END REINFORCING FOR THE BRIDGE SEAT ARE SHOWN FOR CLARITY)



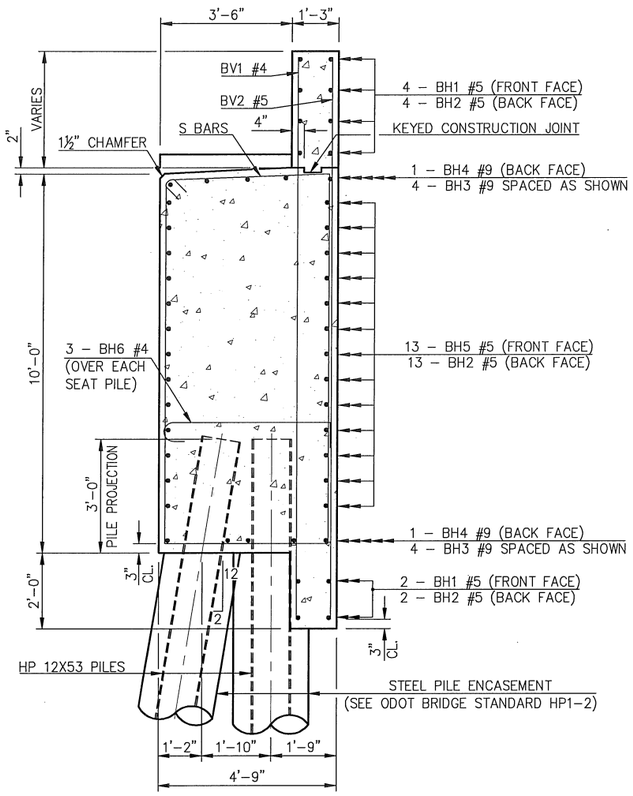
DESIGN	MBS	7/15
DETAIL	SLP	7/15
CHECK	MBS	7/15
GUY ENGINEERING SERVICES, INC.		

CED1 & CED8 STANDARDS

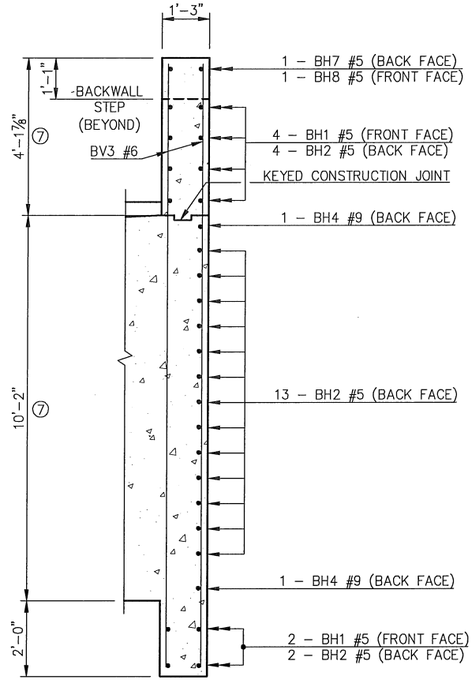
DETAILS OF 10' DEEP SEAT ABUTMENT (0° SKEW) (SHEET NO. 2 OF 3)

STANDARDS FOR SINGLE SPAN BRIDGES WITH CROSSTOWN STEEL BEAMS, 7' OR 10' DEEP SEAT CONVENTIONAL ABUTMENTS, 26' CLEAR ROADWAY

2009 SPECIFICATIONS | CTSBSTD–ABUT–10FT–SK0–2 | R0



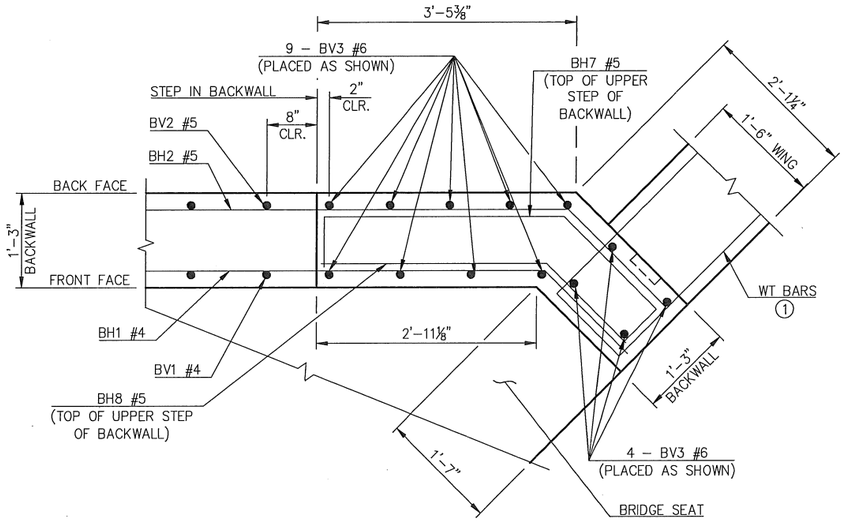
TYPICAL SECTION THRU ABUTMENT



SECTION B–B

(ONLY REINFORCING IN BACKWALL SHOWN FOR CLARITY)

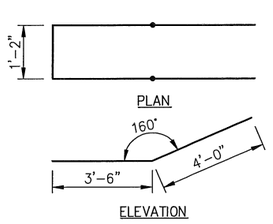
⑦ DIMENSIONS ARE FROM TOP OF BRIDGE SEAT AT FRONT FACE OF BACKWALL.



DETAIL "A"

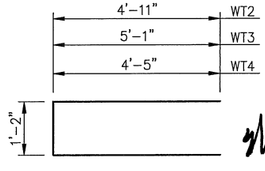
(BRIDGE SEAT BARS NOT SHOWN FOR CLARITY)

① ALL WT WING REINFORCING STEEL TIED TO THE ABUTMENT BRIDGE SEAT, BACKWALL AND CURTAIN WALL REINFORCING STEEL MUST BE IN PLACE PRIOR TO POURING ABUTMENT CONCRETE. FOR ADDITIONAL INFORMATION, SEE STANDARD CTSBSTD–WING–10FT–SKO.



WT1 #6 X 16'–2"

WT5 #6 X 16'–2"

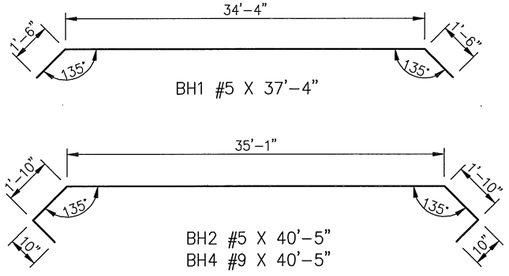


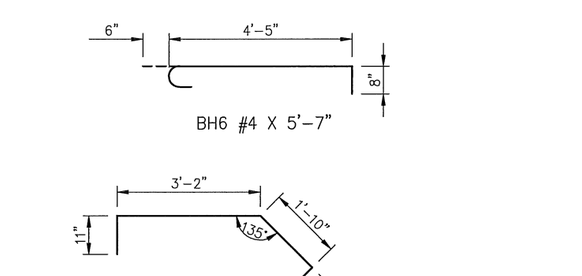
WT2 #6 X 11'–0"
WT3 #6 X 11'–4"
WT4 #6 X 10'–0"

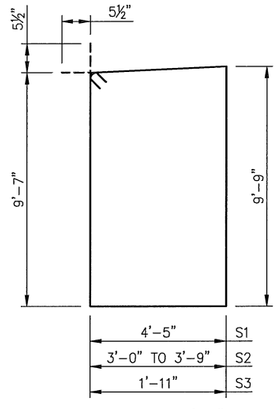
ABUTMENT BAR LIST ⑥
(ONE ABUTMENT SHOWN)

	MARK	SIZE	NO.	FORM	LENGTH	LENGTH VARIATION
	BH1	#5	6	BNT.	37'–4"	
	BH2	#5	19	BNT.	40'–5"	
②	BH3	#9	8	BNT.	37'–1" AVG.	34'–0" TO 40'–2"
	BH4	#9	2	BNT.	40'–5"	
	BH5	#5	13	STR.	31'–6"	
	BH6	#4	21	BNT.	5'–7"	
	BH7	#5	2	BNT.	6'–10"	
	BH8	#5	2	BNT.	4'–4"	
	BH9	#5	30	BNT.	5'–8"	
③	BV1	#4	28	STR.	14'–11½" AVG.	14'–10" TO 15'–1"
③	BV2	#5	28	STR.	14'–11½" AVG.	14'–10" TO 15'–1"
	BV3	#6	26	STR.	15'–11"	
	P1	#4	25	BNT.	6'–10"	
	P2	#4	25	BNT.	7'–4"	
④	P3	#4	3	BNT.	14'–5"	
	S1	#5	32	BNT.	29'–1"	
⑤	S2	#5	4	BNT.	27'–0" AVG.	26'–3" TO 27'–9"
	S3	#5	2	BNT.	24'–1"	
	WT1	#6	2	BNT.	16'–2"	
	WT2	#6	2	BNT.	11'–0"	
	WT3	#6	58	BNT.	11'–4"	
	WT4	#6	2	BNT.	10'–0"	
	WT5	#6	2	BNT.	16'–2"	

② NUMBER INCLUDES TWO SETS OF 4 BARS.
③ NUMBER INCLUDES TWO SETS OF 14 BARS.
④ REQUIRED ONLY WHEN USING W33X130 OR W33X141 BEAMS.
⑤ NUMBER INCLUDES TWO SETS OF 2 BARS.
⑥ EXCLUDES WINGS.







S1 #5 X 29'–1"
S2 #5 X 27'–0" AVG.
S3 #5 X 24'–1"

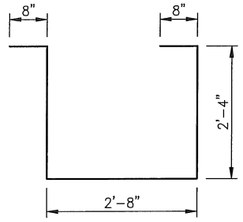
DESIGN	MBS	7/15
DETAIL	SLP	7/15
CHECK	MBS	7/15
GUY ENGINEERING SERVICES, INC.		

CED1 & CED8 STANDARDS

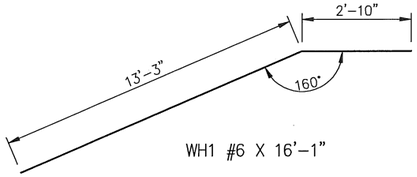
DETAILS OF 10' DEEP SEAT ABUTMENT (0° SKEW) (SHEET NO. 3 OF 3)

STANDARDS FOR SINGLE SPAN BRIDGES WITH CROSSTOWN STEEL BEAMS, 7' OR 10' DEEP SEAT CONVENTIONAL ABUTMENTS, 28' CLEAR ROADWAY

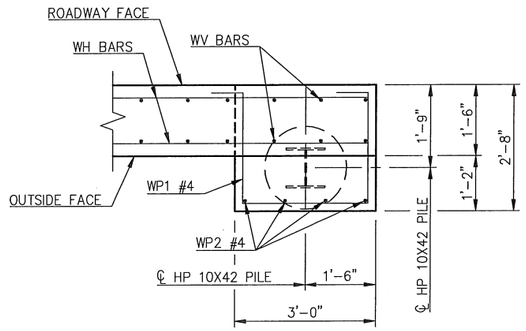
2009 SPECIFICATIONS | CTSBSTD–ABUT–10FT–SKO–3 | RO



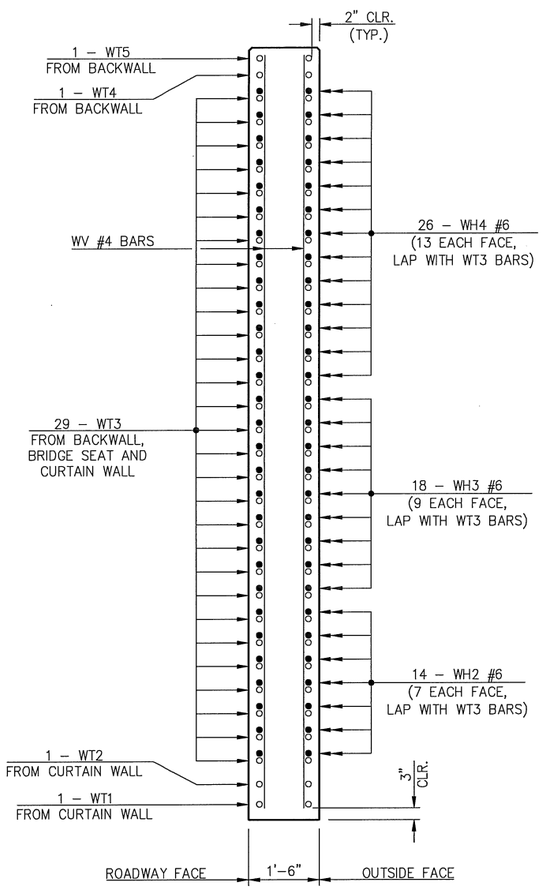
WP1 #4 X 8'-8"



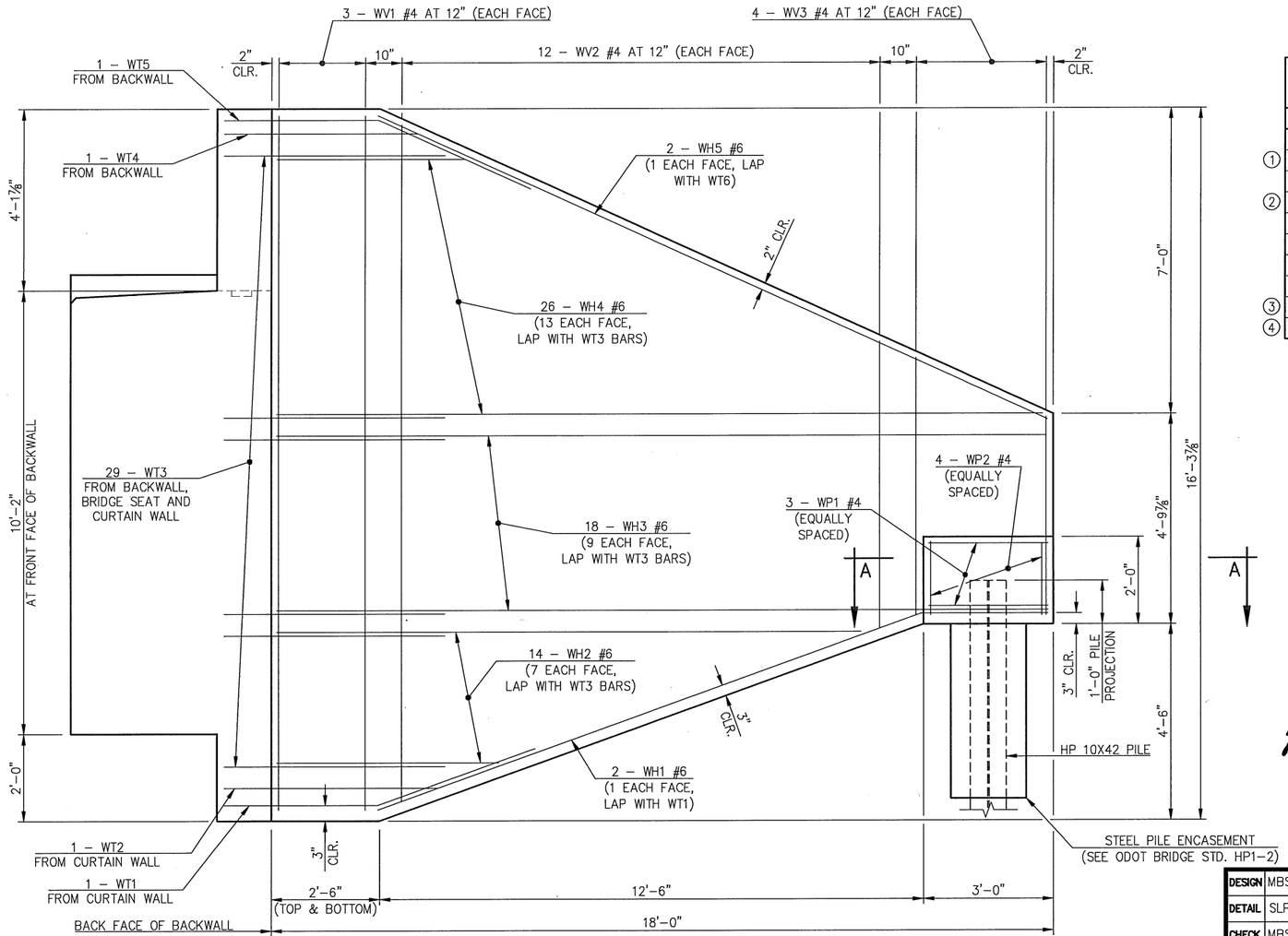
WH1 #6 X 16'-1"



SECTION A-A



SECTION THROUGH WING AT BACK FACE OF BACKWALL



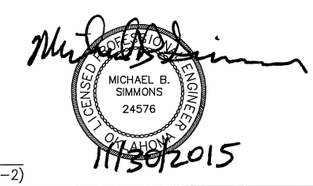
ELEVATION

WING BAR LIST
(ONE WING SHOWN, TWO REQUIRED PER ABUTMENT)

	MARK	SIZE	NO.	FORM	LENGTH	LENGTH VARIATION
	WH1	#6	2	BNT.	16'-1"	
(1)	WH2	#6	14	STR.	9'-3" AVG.	5'-1" TO 13'-5"
	WH3	#6	18	STR.	17'-8"	
(2)	WH4	#6	26	STR.	10'-11" AVG.	4'-3" TO 17'-7"
	WH5	#6	2	STR.	16'-10"	
	WP1	#4	3	BNT.	8'-8"	
	WP2	#4	4	STR.	1'-7"	
	WV1	#4	6	STR.	15'-10"	
(3)	WV2	#4	24	STR.	10'-11½" AVG.	6'-6" TO 15'-5"
(4)	WV3	#4	8	STR.	5'-1½" AVG.	4'-5" TO 5'-10"

(1) NUMBER INCLUDES 2 SETS OF 7 BARS.
(2) NUMBER INCLUDES 2 SETS OF 13 BARS.
(3) NUMBER INCLUDES 2 SETS OF 12 BARS.
(4) NUMBER INCLUDES 2 SETS OF 4 BARS.

NOTE: SEE SECTION A-A ON STANDARD CTSBSTD-ABUT-10FT-SK0-2 FOR LOCATIONS OF WT BARS IN BACKWALL, BRIDGE SEAT AND CURTAIN WALL.



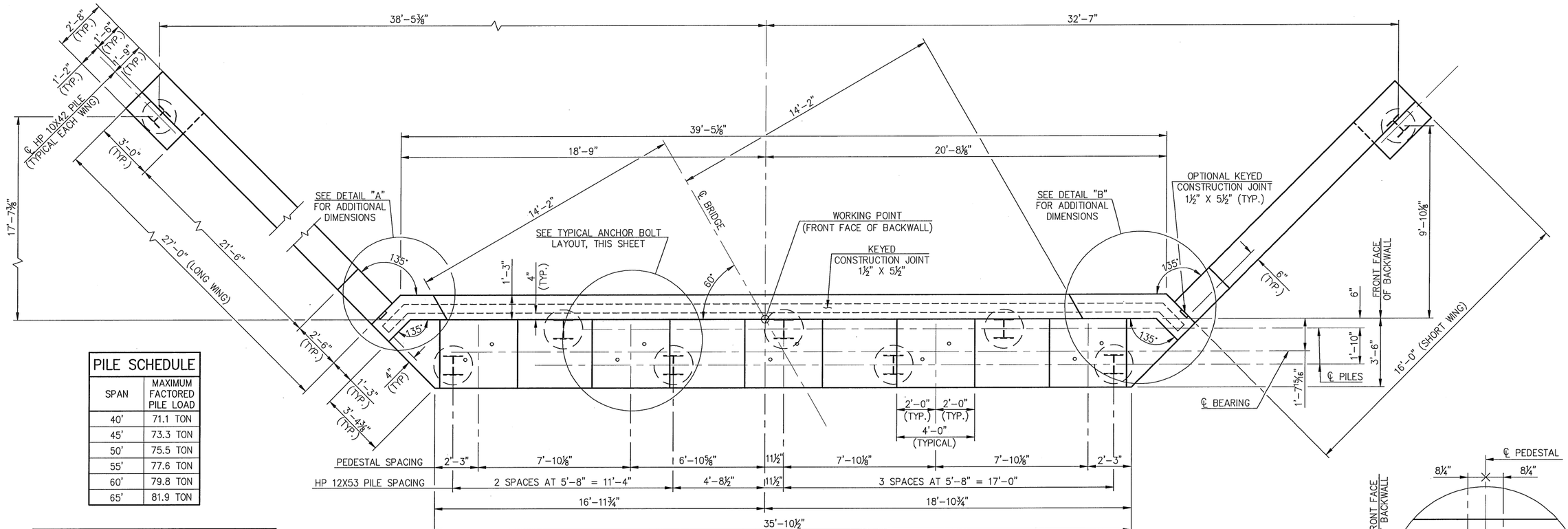
DESIGN	MBS	7/15
DETAIL	SLP	7/15
CHECK	MBS	7/15
GUY ENGINEERING SERVICES, INC.		

CED1 & CED8 STANDARDS

DETAILS OF WINGS FOR 10' DEEP SEAT ABUTMENT (0° SKEW)

STANDARDS FOR SINGLE SPAN BRIDGES WITH CROSSTOWN STEEL BEAMS, 7' OR 10' DEEP SEAT CONVENTIONAL ABUTMENTS, 26' CLEAR ROADWAY

2009 SPECIFICATIONS | CTSBSTD-WING-10FT-SK0 | R0



PLAN

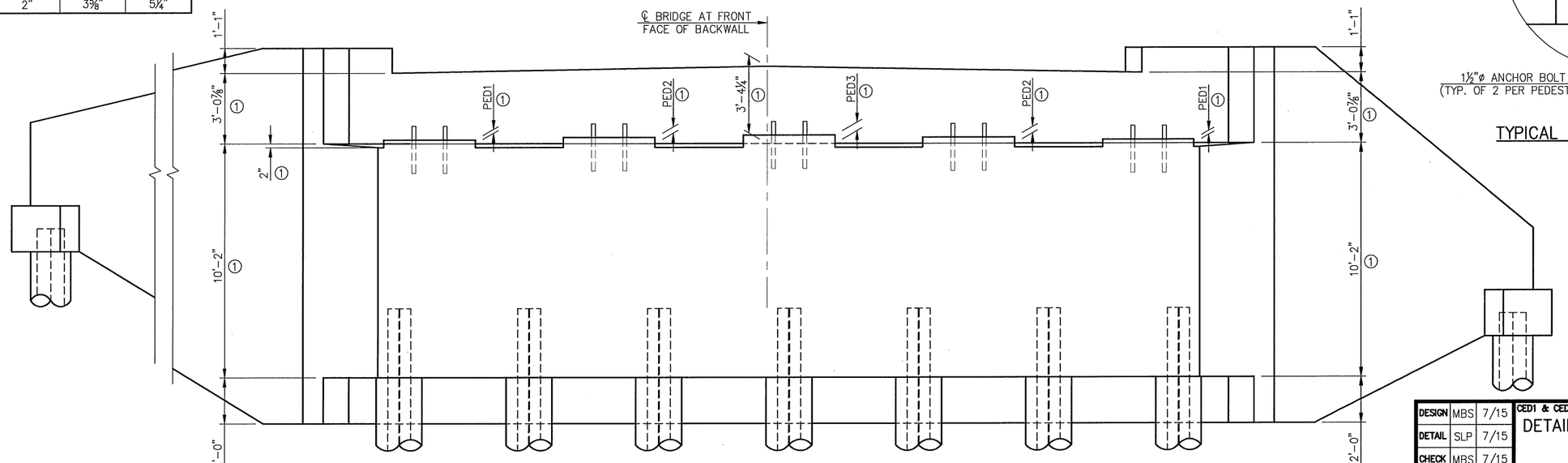
(LEFT FORWARD SKEW SHOWN, RIGHT FORWARD SKEW OPPOSITE HAND)

NOTE: FOR DETAIL "A" AND DETAIL "B", SEE STANDARD CTSBSTD-ABUT-10FT-SK30-3.

① DIMENSIONS ARE FROM TOP OF BRIDGE SEAT AT FRONT FACE OF BACKWALL.

PILE SCHEDULE	
SPAN	MAXIMUM FACTORED PILE LOAD
40'	71.1 TON
45'	73.3 TON
50'	75.5 TON
55'	77.6 TON
60'	79.8 TON
65'	81.9 TON

PEDESTAL HEIGHT SCHEDULE			
BEAM SIZE	P1	P2	P3
W33 X 130	4¾"	6⅜"	8"
W33 X 141	4⅝"	6¼"	7⅞"
W36 X 135	2⅜"	4"	5⅝"
W36 X 150	2"	3⅝"	5¼"



ELEVATION

TYPICAL ANCHOR BOLT LAYOUT

MICHAEL B. SIMMONS 24576 LICENSED PROFESSIONAL ENGINEER WASHINGTON

11/30/2015

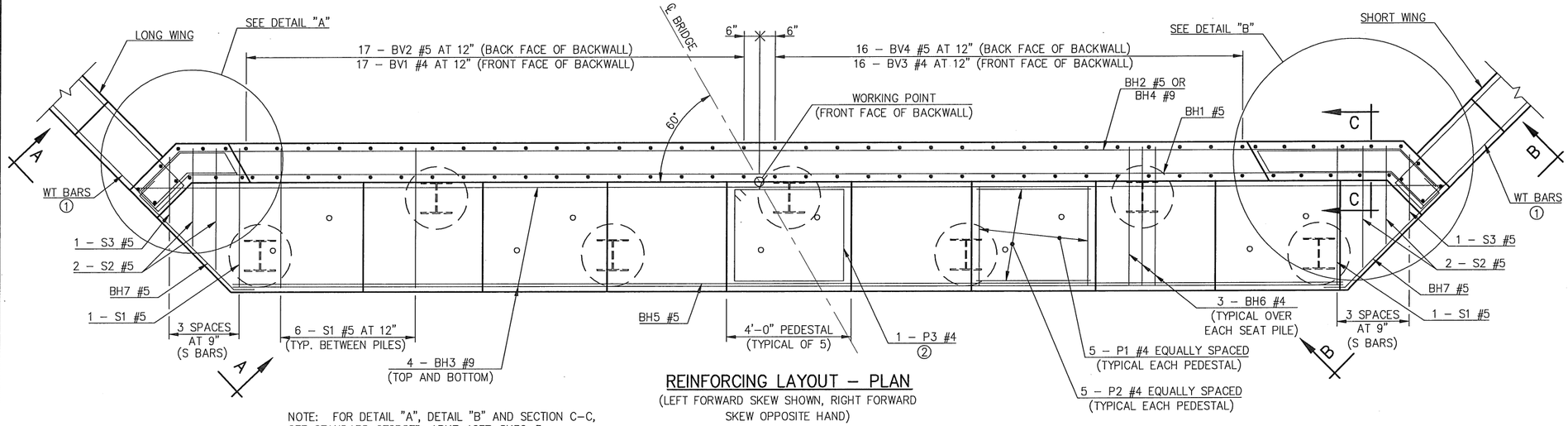
DESIGN	MBS	7/15
DETAIL	SLP	7/15
CHECK	MBS	7/15
GUY ENGINEERING SERVICES, INC.		

CED1 & CED8 STANDARDS

DETAILS OF 10' DEEP SEAT ABUTMENT (30° SKEW) (SHEET NO. 1 OF 3)

STANDARDS FOR SINGLE SPAN BRIDGES WITH CROSSTOWN STEEL BEAMS, 7' OR 10' DEEP SEAT CONVENTIONAL ABUTMENTS, 26' CLEAR ROADWAY

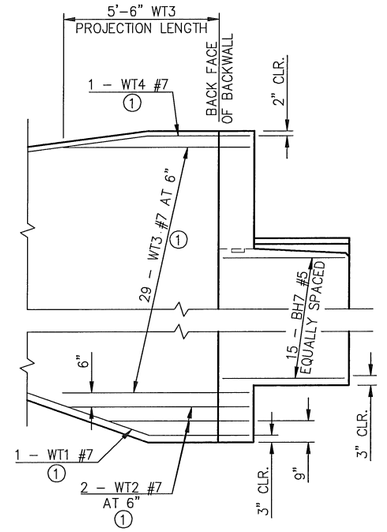
2009 SPECIFICATIONS | CTSBSTD-ABUT-10FT-SK30-1 | R0



REINFORCING LAYOUT – PLAN

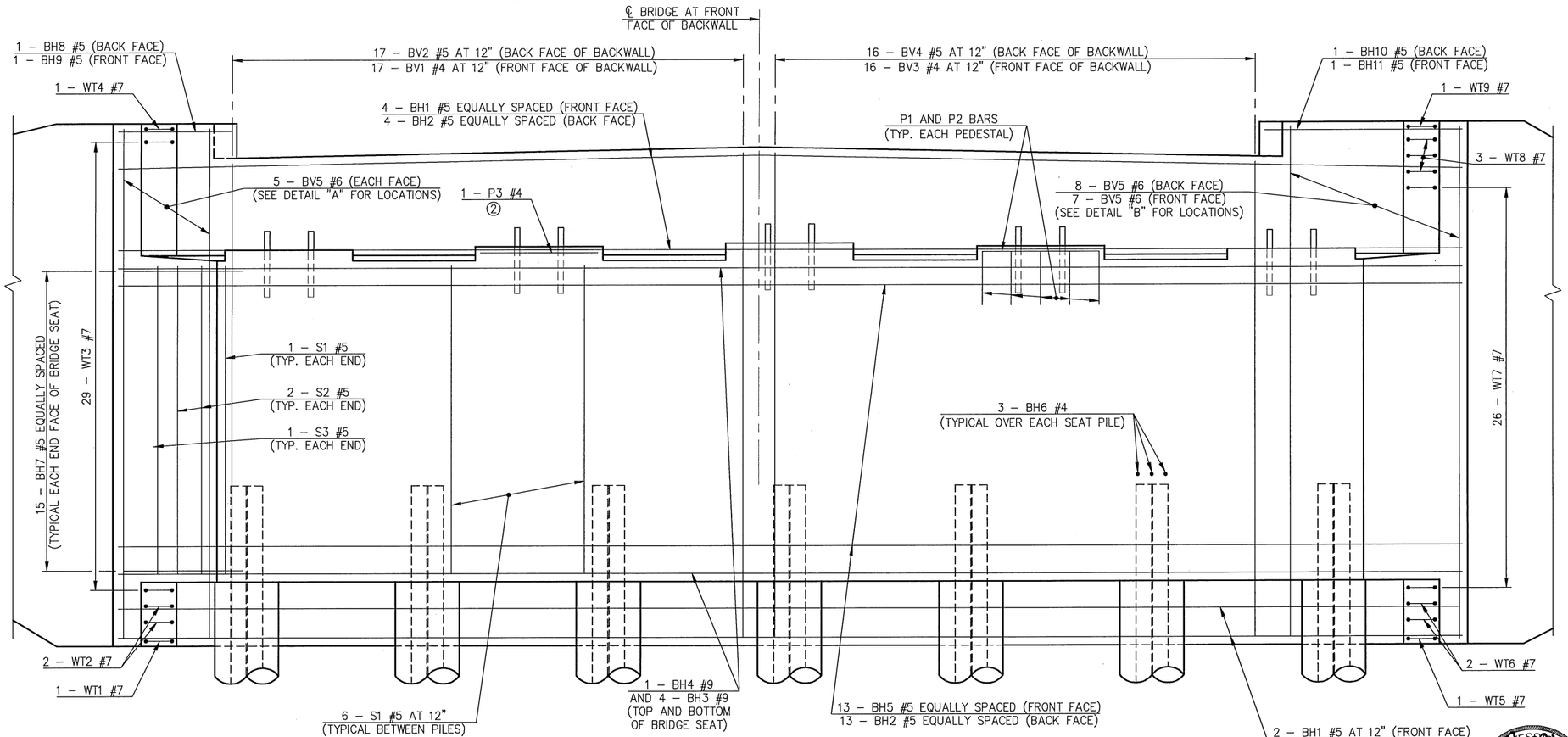
(LEFT FORWARD SKEW SHOWN, RIGHT FORWARD SKEW OPPOSITE HAND)

NOTE: FOR DETAIL "A", DETAIL "B" AND SECTION C–C, SEE STANDARD CTSBSTD–ABUT–10FT–SK30–3.

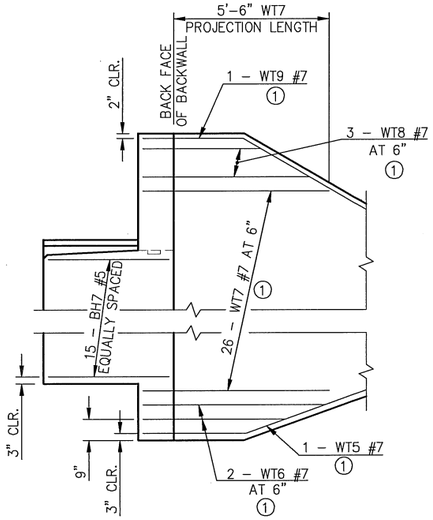


SECTION A–A
END VIEW REINFORCING LAYOUT – LONG WING SIDE

(ONLY WT WING BARS AND END REINFORCING FOR THE BRIDGE SEAT ARE SHOWN FOR CLARITY)



REINFORCING LAYOUT – ELEVATION



SECTION B–B
END VIEW REINFORCING LAYOUT – SHORT WING SIDE

(ONLY WT WING BARS AND END REINFORCING FOR THE BRIDGE SEAT ARE SHOWN FOR CLARITY)

① ALL WT WING REINFORCING STEEL TIED TO THE ABUTMENT BRIDGE SEAT, BACKWALL AND CURTAIN WALL REINFORCING STEEL MUST BE IN PLACE PRIOR TO POURING ABUTMENT CONCRETE. FOR ADDITIONAL INFORMATION, SEE STANDARDS CTSBSTD–LONGWING–10FT–SK30 AND CTSBSTD–SHORTWING–10FT–SK30.

② INCLUDE ONE P3 #4 BAR IN EACH OF THE THREE INTERIOR PEDESTALS ONLY WHEN USING W33X130 AND W33X141 BEAMS. P3 #4 BARS SHALL BE PLACED HORIZONTALLY AT THE MID–HEIGHT OF THE PEDESTAL WHERE REQUIRED.

PROFESSIONAL ENGINEER
MICHAEL B. SIMMONS
24576
OKLAHOMA
11/30/2015

DESIGN	MBS	7/15
DETAIL	SLP	7/15
CHECK	MBS	7/15
GUY ENGINEERING SERVICES, INC.		

CED1 & CED8 STANDARDS

DETAILS OF 10' DEEP SEAT ABUTMENT (30° SKEW)
(SHEET NO. 2 OF 3)

STANDARDS FOR SINGLE SPAN BRIDGES WITH CROSSTOWN STEEL BEAMS, 7' OR 10' DEEP SEAT CONVENTIONAL ABUTMENTS, 26' CLEAR ROADWAY

2009 SPECIFICATIONS | CTSBSTD–ABUT–10FT–SK30–2 | R0

Monday, November 30, 2015 7:33:45 AM
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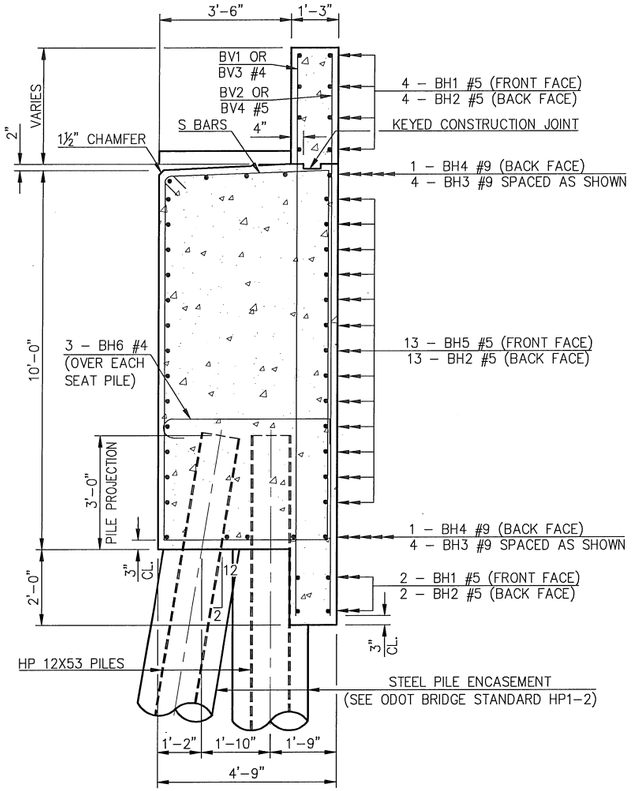
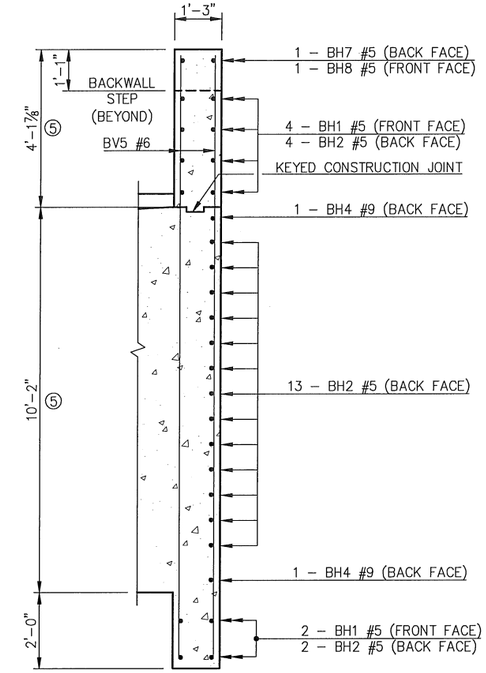


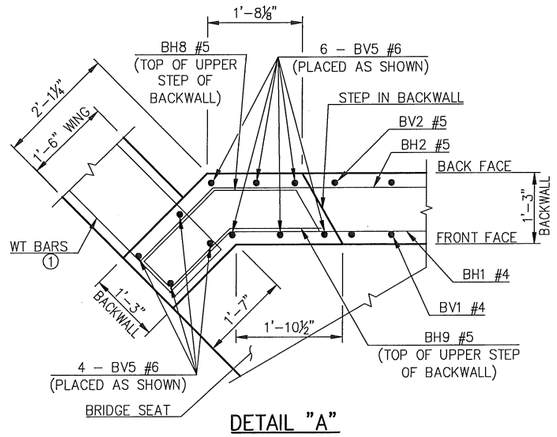
TYPICAL SECTION THRU ABUTMENT



SECTION C–C

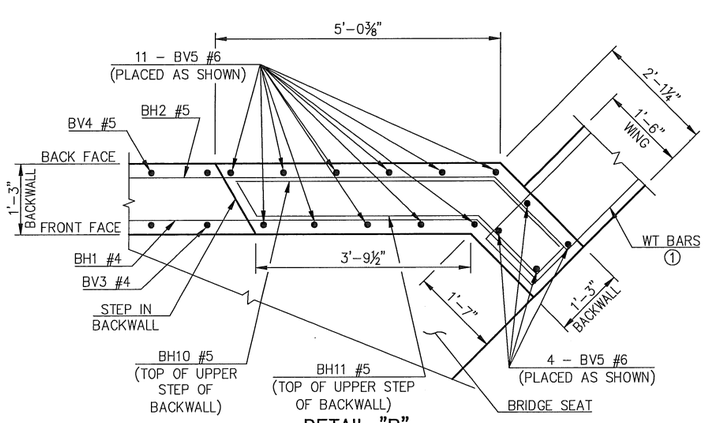
(ONLY REINFORCING IN BACKWALL SHOWN FOR CLARITY)

⑤ DIMENSIONS ARE FROM TOP OF BRIDGE SEAT AT FRONT FACE OF BACKWALL.



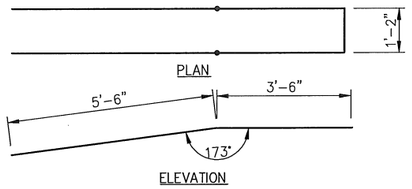
DETAIL "A"

(BRIDGE SEAT BARS NOT SHOWN FOR CLARITY)



DETAIL "B"

(BRIDGE SEAT BARS NOT SHOWN FOR CLARITY)



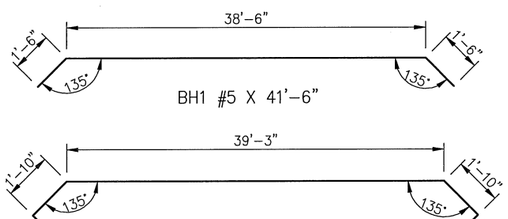
WT4 #7 X 19'-2"

① ALL WT WING REINFORCING STEEL TIED TO THE ABUTMENT BRIDGE SEAT, BACKWALL AND CURTAIN WALL REINFORCING STEEL MUST BE IN PLACE PRIOR TO POURING ABUTMENT CONCRETE. FOR ADDITIONAL INFORMATION, SEE STANDARDS CTSBSTD–LONGWING–10FT–SK30 AND CTSBSTD–SHORTWING–10FT–SK30.

ABUTMENT BAR LIST ④ (ONE ABUTMENT SHOWN)

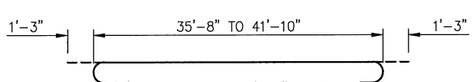
	MARK	SIZE	NO.	FORM	LENGTH	LENGTH VARIATION
	BH1	#5	6	BNT.	41'–6"	
	BH2	#5	19	BNT.	44'–7"	
②	BH3	#9	8	BNT.	41'–3" AVG.	38'–2" TO 44'–4"
	BH4	#9	2	BNT.	44'–7"	
	BH5	#5	13	STR.	35'–8"	
	BH6	#4	21	BNT.	5'–7"	
	BH7	#5	30	BNT.	5'–8"	
	BH8	#5	1	BNT.	5'–4"	
	BH9	#5	1	BNT.	3'–2"	
	BH10	#5	1	BNT.	6'–6"	
	BH11	#5	1	BNT.	7'–3"	
	BV1	#4	17	STR.	14'–11½" AVG.	14'–10" TO 15'–1"
	BV2	#5	17	STR.	14'–11½" AVG.	14'–10" TO 15'–1"
	BV3	#4	16	STR.	14'–11½" AVG.	14'–10" TO 15'–1"
	BV4	#5	16	STR.	14'–11½" AVG.	14'–10" TO 15'–1"
	BV5	#6	25	STR.	15'–11"	
	P1	#4	25	BNT.	6'–10"	
	P2	#4	25	BNT.	7'–4"	
③	P3	#4	3	BNT.	14'–5"	
	S1	#5	38	BNT.	29'–1"	
	S2	#5	4	BNT.	27'–2" AVG.	26'–5" TO 27'–11"
	S3	#5	2	BNT.	24'–5"	
	WT1	#7	1	BNT.	19'–2"	
	WT2	#7	2	BNT.	12'–6" AVG.	11'–0" TO 14'–0"
	WT3	#7	29	BNT.	14'–4"	
	WT4	#7	1	BNT.	19'–2"	
	WT5	#7	1	BNT.	19'–2"	
	WT6	#7	2	BNT.	12'–5" AVG.	11'–0" TO 13'–10"
	WT7	#7	26	BNT.	14'–4"	
	WT8	#7	3	BNT.	11'–4" AVG.	9'–8" TO 13'–0"
	WT9	#7	1	BNT.	19'–2"	

② NUMBER INCLUDES TWO SETS OF 4 BARS.
③ REQUIRED ONLY WHEN USING W33X130 AND W33X141 BEAMS.
④ EXCLUDES WINGS

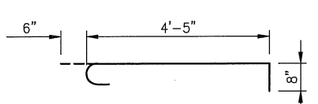


BH1 #5 X 41'–6"

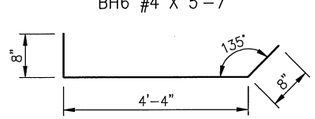
BH2 #5 X 44'–7"
BH4 #9 X 44'–7"



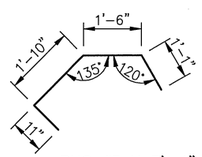
BH3 #9 X 41'–3" AVG.



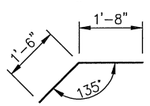
BH6 #4 X 5'–7"



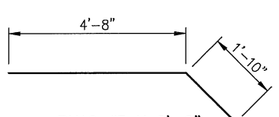
BH7 #5 X 5'–8"



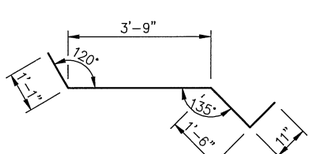
BH8 #5 X 5'–4"



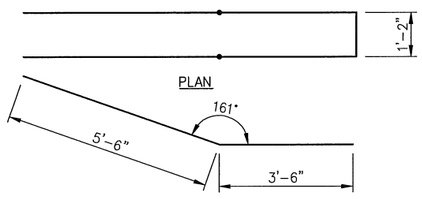
BH9 #5 X 3'–2"



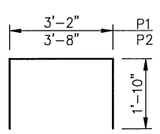
BH10 #5 X 6'–6"



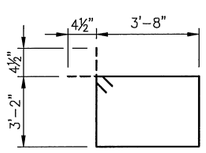
BH11 #5 X 7'–3"



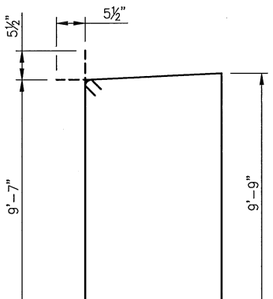
WT1 #7 X 19'–2"



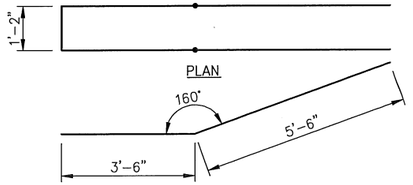
P1 #4 X 6'–10"
P2 #4 X 7'–4"



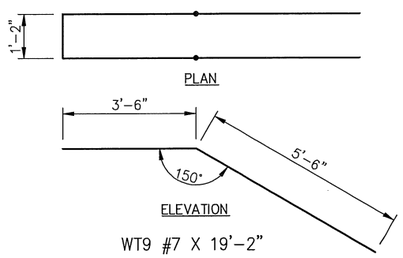
P3 #4 X 14'–5" ③



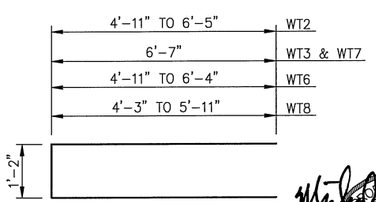
S1 #5 X 29'–1"
S2 #5 X 27'–2" AVG.
S3 #5 X 24'–5"



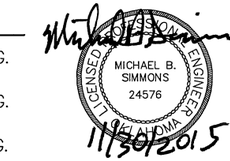
WT5 #7 X 19'–2"



WT9 #7 X 19'–2"



WT2 #7 X 12'–6" AVG.
WT3 #7 X 14'–4"
WT6 #7 X 12'–5" AVG.
WT7 #7 X 14'–4"
WT8 #7 X 11'–4" AVG.



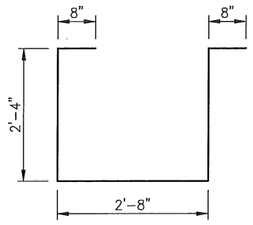
DESIGN	MBS	7/15
DETAIL	SLP	7/15
CHECK	MBS	7/15
GUY ENGINEERING SERVICES, INC.		

CED1 & CED8 STANDARDS

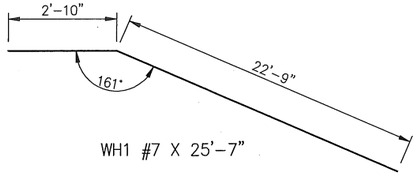
DETAILS OF 10' DEEP SEAT ABUTMENT (30° SKEW) (SHEET NO. 3 OF 3)

STANDARDS FOR SINGLE SPAN BRIDGES WITH CROSSTOWN STEEL BEAMS, 7' OR 10' DEEP SEAT CONVENTIONAL ABUTMENTS, 26' CLEAR ROADWAY

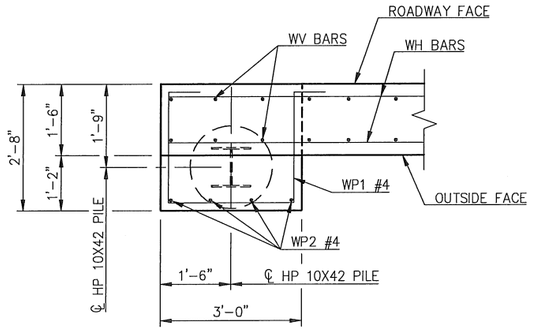
2009 SPECIFICATIONS | CTSBSTD–ABUT–10FT–SK30–3 | R0



WP1 #4 X 8'-8"



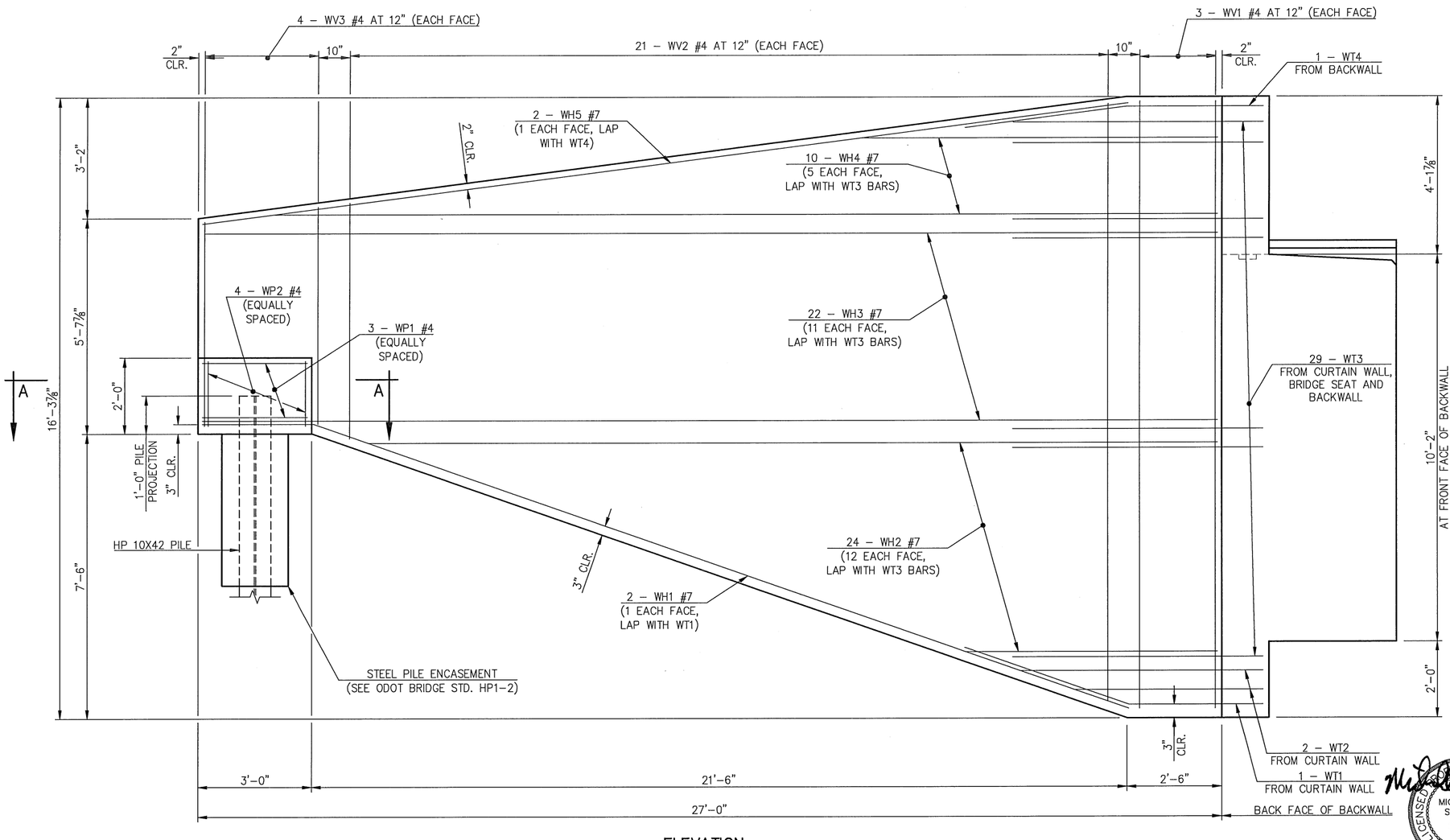
WH1 #7 X 25'-7"



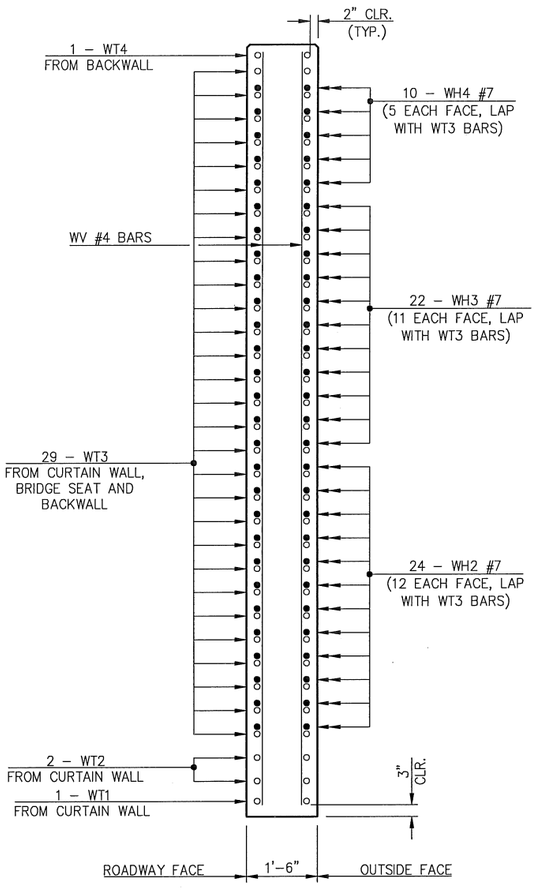
SECTION A-A

LONG WING BAR LIST					
MARK	SIZE	NO.	FORM	LENGTH	LENGTH VARIATION
WH1	#7	2	BNT.	25'-7"	
① WH2	#7	24	STR.	14'-5½" AVG.	6'-7" TO 22'-4"
WH3	#7	22	STR.	26'-8"	
② WH4	#7	10	STR.	17'-0½" AVG.	9'-4" TO 24'-9"
WH5	#7	2	STR.	24'-6"	
WP1	#4	3	BNT.	8'-8"	
WP2	#4	4	STR.	1'-7"	
WV1	#4	6	STR.	15'-11"	
③ WV2	#4	42	STR.	10'-10" AVG.	6'-1" TO 15'-7"
④ WV3	#4	8	STR.	5'-5" AVG.	5'-3" TO 5'-7"

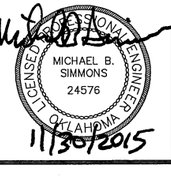
① NUMBER INCLUDES 2 SETS OF 12 BARS.
② NUMBER INCLUDES 2 SETS OF 5 BARS.
③ NUMBER INCLUDES 2 SETS OF 21 BARS.
④ NUMBER INCLUDES 2 SETS OF 4 BARS.



ELEVATION



SECTION THROUGH WING AT BACK FACE OF BACKWALL



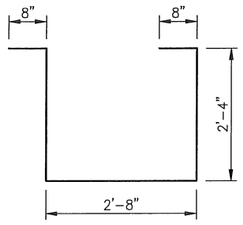
DESIGN	MBS	7/15
DETAIL	SLP	7/15
CHECK	MBS	7/15
GUY ENGINEERING SERVICES, INC.		

CED1 & CED8 STANDARDS

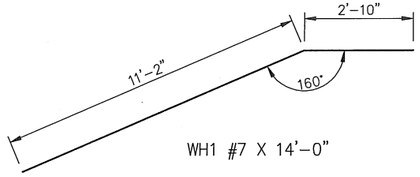
DETAILS OF LONG WING FOR 10' DEEP SEAT ABUTMENT (30° SKEW)

STANDARDS FOR SINGLE SPAN BRIDGES WITH CROSSTOWN STEEL BEAMS, 7' OR 10' DEEP SEAT CONVENTIONAL ABUTMENTS, 26' CLEAR ROADWAY

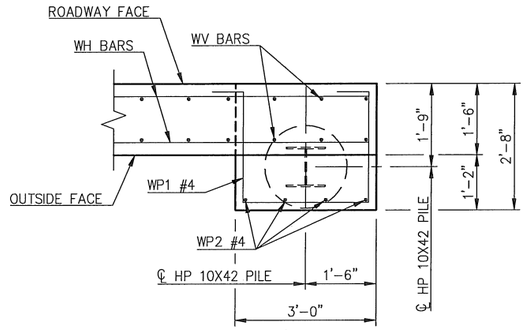
2009 SPECIFICATIONS | CTSBSTD-LONGWING-10FT-SK30 | R0



WP1 #4 X 8'-8"



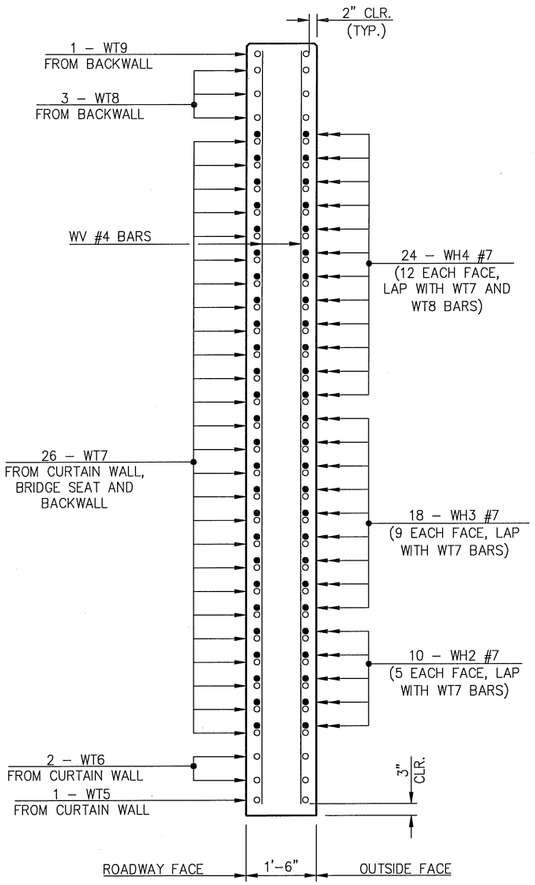
WH1 #7 X 14'-0"



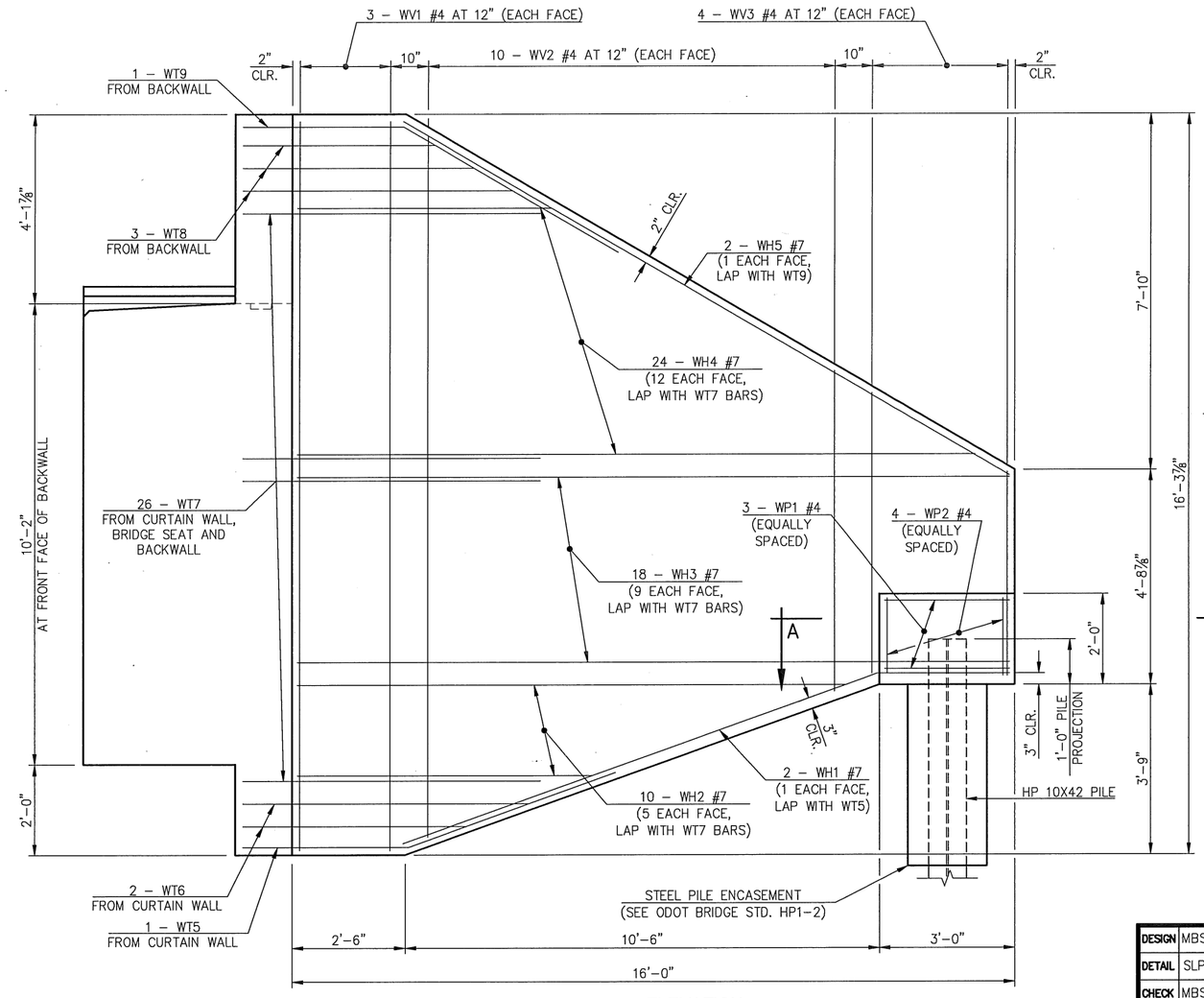
SECTION A-A

SHORT WING BAR LIST					
MARK	SIZE	NO/	FORM	LENGTH	LENGTH VARIATION
WH1	#7	2	BNT.	14'-0"	
① WH2	#7	10	STR.	9'-3½" AVG.	6'-6" TO 12'-1"
WH3	#7	18	STR.	15'-8"	
② WH4	#7	24	STR.	10'-3½" AVG.	5'-7" TO 15'-0"
WH5	#7	2	STR.	15'-5"	
WP1	#4	3	BNT.	8'-8"	
WP2	#4	4	STR.	1'-7"	
WV1	#4	6	STR.	15'-11"	
③ WV2	#4	20	STR.	11'-2" AVG.	6'-11" TO 15'-5"
④ WV3	#4	8	STR.	5'-2½" AVG.	4'-4" TO 6'-1"

① NUMBER INCLUDES 2 SETS OF 5 BARS.
② NUMBER INCLUDES 2 SETS OF 12 BARS.
③ NUMBER INCLUDES 2 SETS OF 10 BARS.
④ NUMBER INCLUDES 2 SETS OF 4 BARS.



SECTION THROUGH WING AT BACK FACE OF BACKWALL



ELEVATION

MICHAEL B. SIMMONS 24576 LICENSED PROFESSIONAL ENGINEER
11/30/2015

DESIGN	MBS	7/15
DETAIL	SLP	7/15
CHECK	MBS	7/15
GUY ENGINEERING SERVICES, INC.		

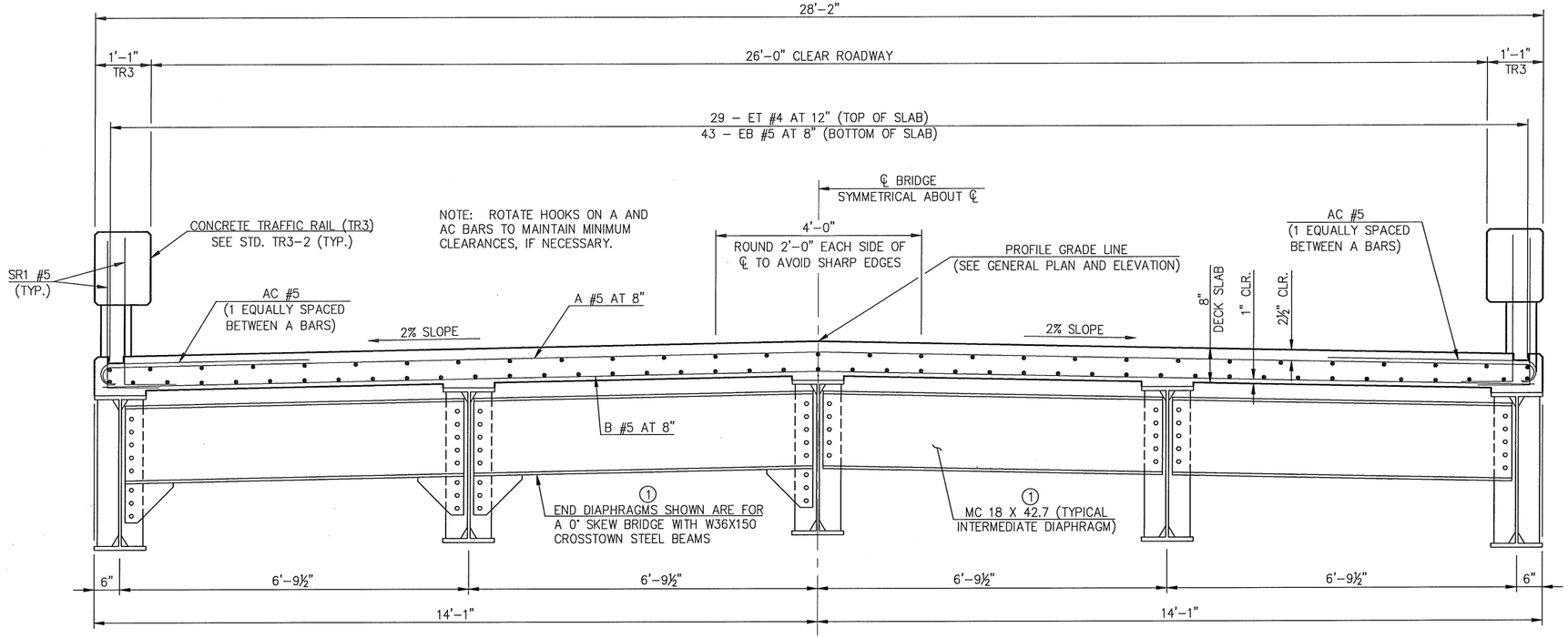
CED1 & CED8 STANDARDS

DETAILS OF SHORT WING FOR 10' DEEP SEAT ABUTMENT (30° SKEW)

STANDARDS FOR SINGLE SPAN BRIDGES WITH CROSSTOWN STEEL BEAMS, 7' OR 10' DEEP SEAT CONVENTIONAL ABUTMENTS, 26' CLEAR ROADWAY

2009 SPECIFICATIONS | CTSBSTD-SHORTWING-10FT-SK30 | R0

Monday, November 30, 2015 7:34:32 AM
V:\15-963N Deep Seat Abutments & SS Standards\STRUCTURAL\DWG\CED1-STD-10FT ABUTMENT.dwg



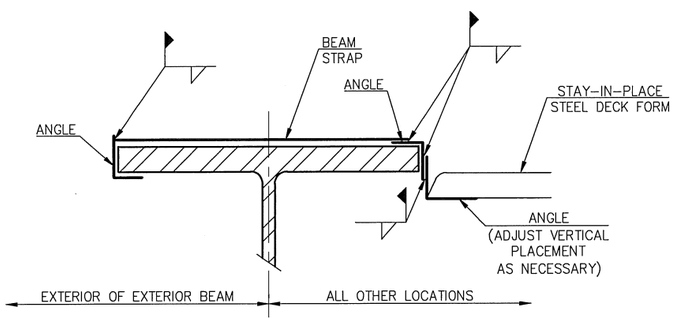
HALF SECTION AT END DIAPHRAGM

HALF SECTION AT INTERMEDIATE DIAPHRAGM

TYPICAL CROSS SECTION

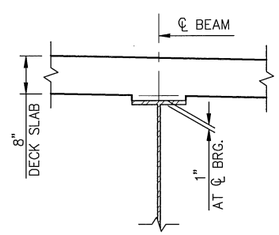
W36X150 CROSSTOWN STEEL BEAMS WITH 0° SKEW SHOWN.

(1) SEE STANDARD CTSBSTD-DIAPH-7FT..10FT-SK0 OR STANDARD CTSBSTD-DIAPH-7FT..10FT-SK30, AS APPROPRIATE, FOR DETAILS OF BEARING STIFFENERS, INTERMEDIEATE DIAPHRAGM STIFFENERS, END DIAPHRAGMS AND INTERMEDIATE DIAPHRAGMS FOR EACH BEAM SIZE.



STAY-IN-PLACE STEEL DECK FORM FLANGE CONNECTION DETAIL

NOTE:
DO NOT WELD TO THE TOP FLANGE OR STUDS. REPORT ANY ARC STRIKE, WELD SPLATTER, OR WELDING ON TOP FLANGE TO BRIDGE ENGINEER IMMEDIATELY.



DETAIL OF HAUNCH

NOTE:
HAUNCH HEIGHT SHOWN IS AT CENTERLINE OF BEARING ONLY, MEASURED FROM BOTTOM OF DECK SLAB TO TOP OF BEAM AND VARIES ACROSS THE SPAN. HAUNCH HEIGHT TO BE DETERMINED AFTER ERECTION OF BEAMS TO PROVIDE FOR DEAD LOAD DEFLECTION AND GRADE ADJUSTMENT.

NOTES:

STAY-IN-PLACE STEEL DECK FORMS MAY BE USED IF THE MINIMUM DECK SLAB THICKNESS OF 8" IS OBTAINED BY MEASURING FROM THE TOP OF THE DECK SLAB TO THE TOP PORTION OF THE STEEL CORRUGATION. NO ADDITIONAL CONCRETE WEIGHT OF THE DECK SLAB IS PERMITTED. ADDITIONAL STEEL WEIGHT OF THE DECK FORMS SHALL NOT EXCEED 5 PSF.

ALL COSTS ASSOCIATED WITH THE USE OF STAY-IN-PLACE FORMS, INCLUDING ALL PROFESSIONAL SERVICES, MATERIAL, LABOR, EQUIPMENT, AND INCIDENTALS SHALL BE AT THE CONTRACTOR'S EXPENSE. FOR ADDITIONAL INFORMATION CONCERNING THE USE OF STAY-IN-PLACE FORMS, SEE SECTION 502 OF THE STANDARD SPECIFICATIONS.

IN THE EVENT OF AN EMERGENCY, POURING OF THE DECK SLAB MAY BE HALTED WITH A CONSTRUCTION JOINT MADE PERPENDICULAR TO THE DIRECTION OF TRAFFIC AS DIRECTED BY THE ENGINEER. ALL LONGITUDINAL REINFORCING STEEL SHALL BE CONTINUOUS THROUGH ALL CONSTRUCTION JOINTS. NO HEAVY EQUIPMENT WILL BE PERMITTED ON THE FINISHED DECK SLAB WITHIN 5'-0" OF ANY CONSTRUCTION JOINT UNTIL THE DECK SLAB IS IN PLACE ON BOTH SIDES OF THE RESPECTIVE JOINT.

DO NOT SAW-CUT GROOVE THE DECK SLAB WITHIN 6" OF ANY CONSTRUCTION JOINT.

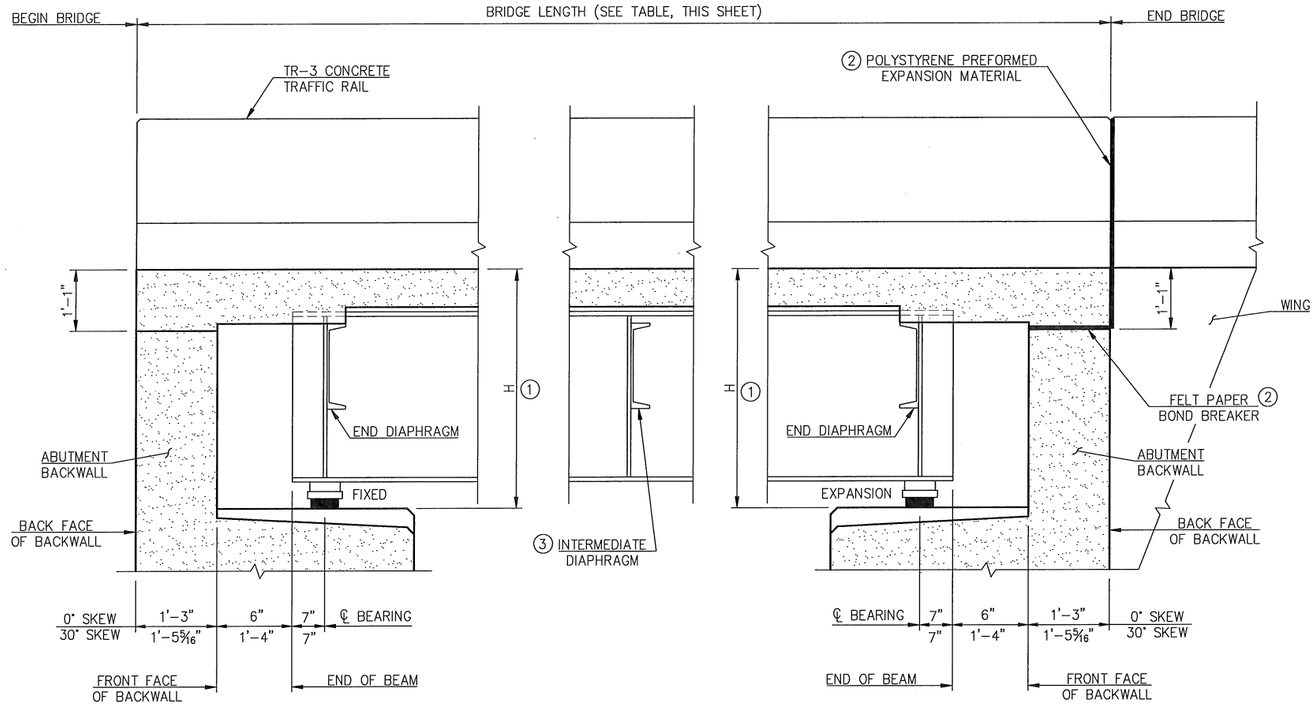
DESIGN	MBS	7/15
DETAIL	SLP	7/15
CHECK	MBS	7/15
GUY ENGINEERING SERVICES, INC.		

CED1 & CED8 STANDARDS

TYPICAL CROSS SECTION

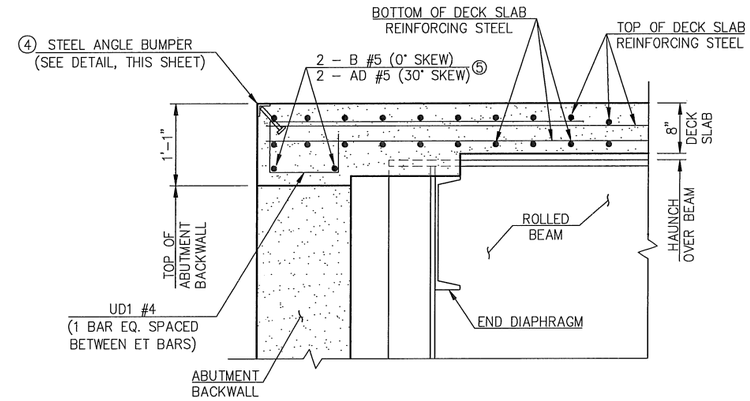
STANDARDS FOR SINGLE SPAN BRIDGES WITH CROSSTOWN STEEL BEAMS, 7' OR 10' DEEP SEAT CONVENTIONAL ABUTMENTS, 26' CLEAR ROADWAY

2009 SPECIFICATIONS | CTSBSTD-TYPSECT-7FT..10FT-SK0..30 | R0



ABUTMENT NO. 1 ABUTMENT NO. 2

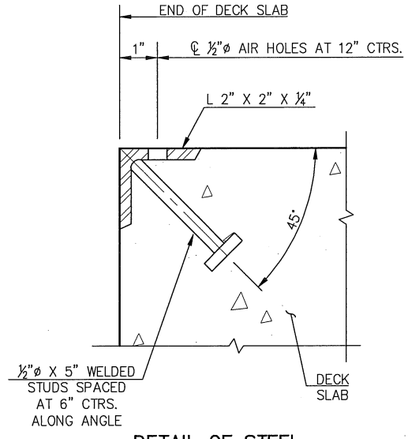
LONGITUDINAL SECTION



TYPICAL SLAB REINFORCING AT ABUTMENT BACKWALL

SCHEDULE FOR DIMENSION H	
BEAM SIZE	H
W33 X 130	3'-9¼"
W33 X 141	3'-9⅜"
W36 X 135	3'-11⅝"
W36 X 150	4'-0"

BRIDGE LENGTH SCHEDULE		
SPAN	BRIDGE LENGTH	
	0° SKEW	30° SKEW
40'	43'-2"	45'-2⅝"
45'	48'-2"	50'-2⅝"
50'	53'-2"	55'-2⅝"
55'	58'-2"	60'-2⅝"
60'	63'-2"	65'-2⅝"
65'	68'-2"	70'-2⅝"



DETAIL OF STEEL ANGLE BUMPER

① DIMENSION IS FROM TOP OF DECK SLAB TO BOTTOM OF BEARING ASSEMBLY AT ℄ BEARING.

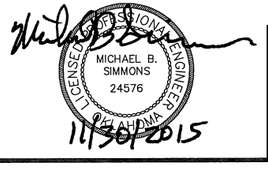
② AT EXPANSION ABUTMENTS, FELT PAPER BOND BREAKER SHALL BE PLACED ON TOP OF THE BACKWALL FOR THE FULL WIDTH OF THE DECK SLAB, AND ¾" THICK POLYSTYRENE PREFORMED EXPANSION MATERIAL SHALL BE PLACED BETWEEN THE END OF THE DECK SLAB AND THE ENDS OF THE WINGS, AND BETWEEN THE ENDS OF THE CONCRETE TRAFFIC RAILS (TR3) ON THE DECK SLAB AND WINGS. ALL COST TO BE INCLUDED IN OTHER ITEMS OF WORK.

③ ONLY ONE INTERMEDIATE DIAPHRAGM SHOWN. SEE STANDARD CTSBSTD-BEAMS-40-50-7FT..10FT-SK0..30 OR STANDARD CTSBSTD-BEAMS-55-65-7FT..10FT-SK0..30 FOR ACTUAL NUMBER OF INTERMEDIATE DIAPHRAGMS.

④ STEEL ANGLE BUMPERS SHALL BE OMITTED FROM ENDS OF DECK SLABS ADJOINING AN APPROACH ROADWAY COMPRISED OF ASPHALT OR P.C. CONCRETE PAVEMENT.

⑤ ADDITIONAL BARS ABOVE THE ABUTMENT BACKWALL. THESE BARS ARE NOT SHOWN IN THE "DECK REINFORCING PLAN" DETAILS ON STANDARDS CTSBSTD-DKSLB-7FT..10FT-SK0 OR CTSBSTD-DKSLB-7FT..10FT-SK30 FOR CLARITY, BUT THE BARS ARE INCLUDED IN THE SUPERSTRUCTURE BAR LISTS ON THOSE STANDARDS.

INSTALL ALL DIAPHRAGMS AND TIGHTEN ALL BOLTS BEFORE PLACING CONCRETE FOR THE DECK SLAB OR APPLYING OTHER MASSIVE LOADS TO THE BEAMS



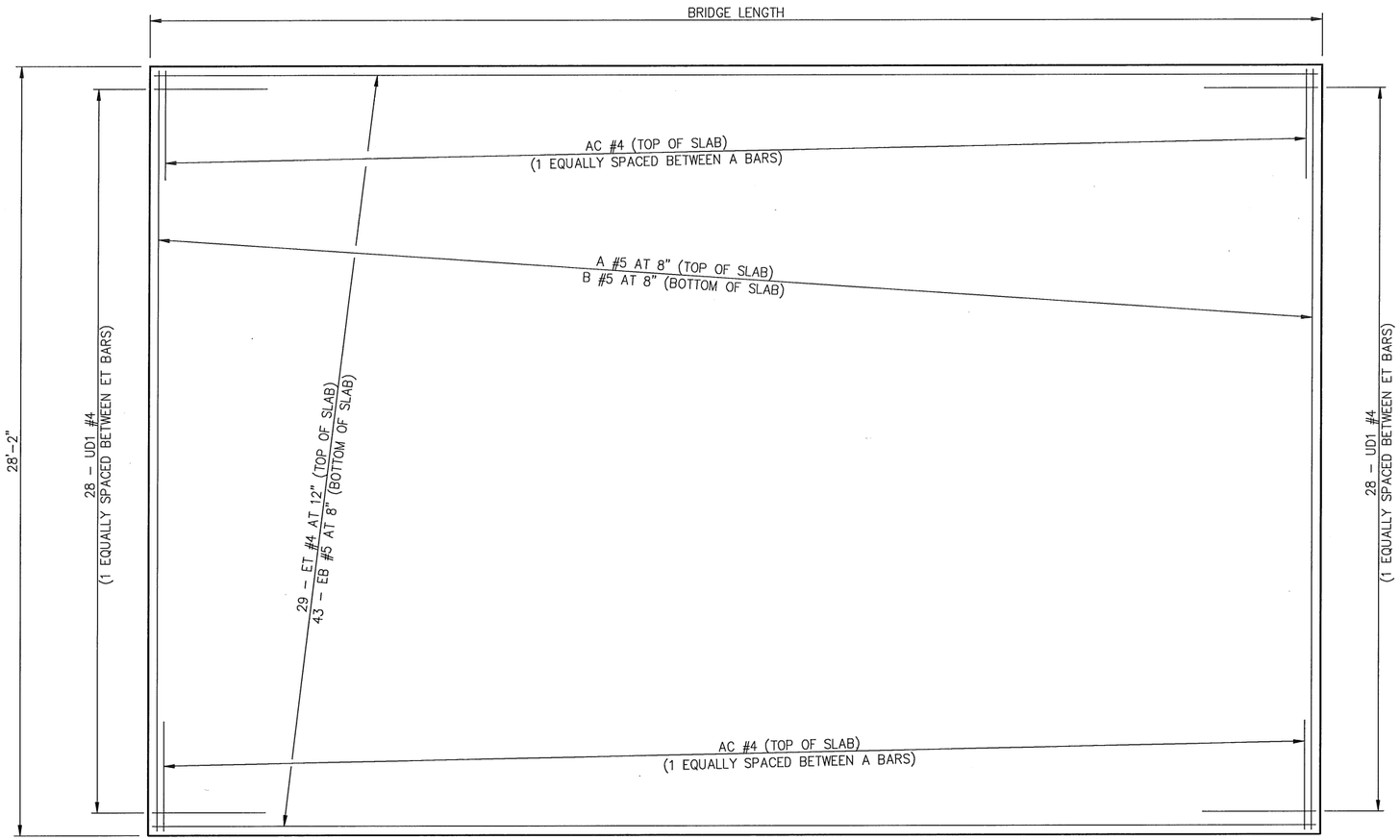
DESIGN	MBS	7/15
DETAIL	SLP	7/15
CHECK	MBS	7/15
GUY ENGINEERING SERVICES, INC.		

CED1 & CED8 STANDARDS

LONGITUDINAL SECTION

STANDARDS FOR SINGLE SPAN BRIDGES WITH CROSSTOWN STEEL BEAMS, 7' OR 10' DEEP SEAT CONVENTIONAL ABUTMENTS, 26' CLEAR ROADWAY

2009 SPECIFICATIONS | CTSBSTD-LONGSECT-7FT..10FT-SK0..30 | R0



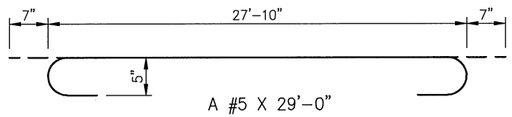
DECK REINFORCING PLAN

NOTES:

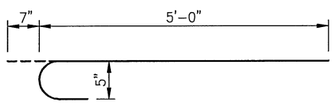
SR1 BARS NOT SHOWN FOR CLARITY. SEE STANDARD CTSBSTD–RAIL–7FT..10FT–SK0..30 AND ODOT STANDARD TR3–2 FOR LOCATIONS OF SR1 BARS.

TWO ADDITIONAL B BARS ARE LOCATED ABOVE THE BACKWALL AT EACH ABUTMENT, AND ARE NOT SHOWN ON THE "DECK REINFORCING PLAN" FOR CLARITY. THESE ADDITIONAL B BARS ARE INCLUDED IN THE SUPERSTRUCTURE BAR LISTS ON THIS SHEET. SEE THE "TYPICAL SLAB REINFORCING AT ABUTMENT BACKWALL" DETAIL ON STANDARD CTSBSTD–LONGSECT–7FT..10FT–SK0..30 FOR LOCATION OF THE ADDITIONAL B BARS.

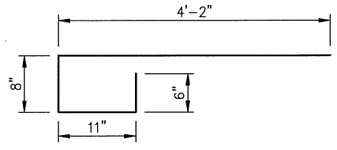
SEE THE "TYPICAL SLAB REINFORCING AT ABUTMENT BACKWALL" DETAIL ON STANDARD CTSBSTD–LONGSECT–7FT..10FT–SK0..30 FOR PLACEMENT OF THE UD1 BARS.



A #5 X 29'–0"



AC #5 X 5'–7"



UD1 #4 X 6'–3"

SUPERSTRUCTURE BAR LIST (40' SPAN)

	MARK	SIZE	NO.	FORM	LENGTH
	A	#5	66	BNT.	29'–0"
	AC	#5	130	BNT.	5'–7"
	B	#5	70	STR.	27'–10"
	EB	#5	43	STR.	42'–10"
	ET	#4	29	STR.	42'–10"
③	SR1	#5	200	BNT.	3'–10"
	UD1	#4	56	BNT.	6'–3"

SUPERSTRUCTURE BAR LIST (45' SPAN)

	MARK	SIZE	NO.	FORM	LENGTH
	A	#5	73	BNT.	29'–0"
	AC	#5	144	BNT.	5'–7"
	B	#5	77	STR.	27'–10"
	EB	#5	43	STR.	47'–10"
	ET	#4	29	STR.	47'–10"
③	SR1	#5	204	BNT.	3'–10"
	UD1	#4	56	BNT.	6'–3"

SUPERSTRUCTURE BAR LIST (50' SPAN)

	MARK	SIZE	NO.	FORM	LENGTH
	A	#5	81	BNT.	29'–0"
	AC	#5	160	BNT.	5'–7"
	B	#5	85	STR.	27'–10"
	EB	#5	43	STR.	52'–10"
	ET	#4	29	STR.	52'–10"
③	SR1	#5	236	BNT.	3'–10"
	UD1	#4	56	BNT.	6'–3"

SUPERSTRUCTURE BAR LIST (55' SPAN)

	MARK	SIZE	NO.	FORM	LENGTH
	A	#5	88	BNT.	29'–0"
	AC	#5	174	BNT.	5'–7"
	B	#5	92	STR.	27'–10"
	EB	#5	43	STR.	57'–10"
	ET	#4	29	STR.	57'–10"
③	SR1	#5	240	BNT.	3'–10"
	UD1	#4	56	BNT.	6'–3"

SUPERSTRUCTURE BAR LIST (60' SPAN)

	MARK	SIZE	NO.	FORM	LENGTH
	A	#5	96	BNT.	29'–0"
	AC	#5	190	BNT.	5'–7"
	B	#5	100	STR.	27'–10"
①	EB	#5	43	STR.	65'–4"
②	ET	#4	29	STR.	64'–10"
③	SR1	#5	272	BNT.	3'–10"
	UD1	#4	56	BNT.	6'–3"

SUPERSTRUCTURE BAR LIST (65' SPAN)

	MARK	SIZE	NO.	FORM	LENGTH
	A	#5	103	BNT.	29'–0"
	AC	#5	204	BNT.	5'–7"
	B	#5	107	STR.	27'–10"
①	EB	#5	43	STR.	70'–4"
②	ET	#4	29	STR.	69'–10"
③	SR1	#5	276	BNT.	3'–10"
	UD1	#4	56	BNT.	6'–3"

①LENGTH INCLUDES ONE 2'–6" LAP. STAGGER LAPS.

②LENGTH INCLUDES ONE 2'–0" LAP. STAGGER LAPS.

③FOR SR1 BAR BEND, SEE ODOT STANDARD TR3–2.

DESIGN	MBS	7/15
DETAIL	SLP	7/15
CHECK	MBS	7/15

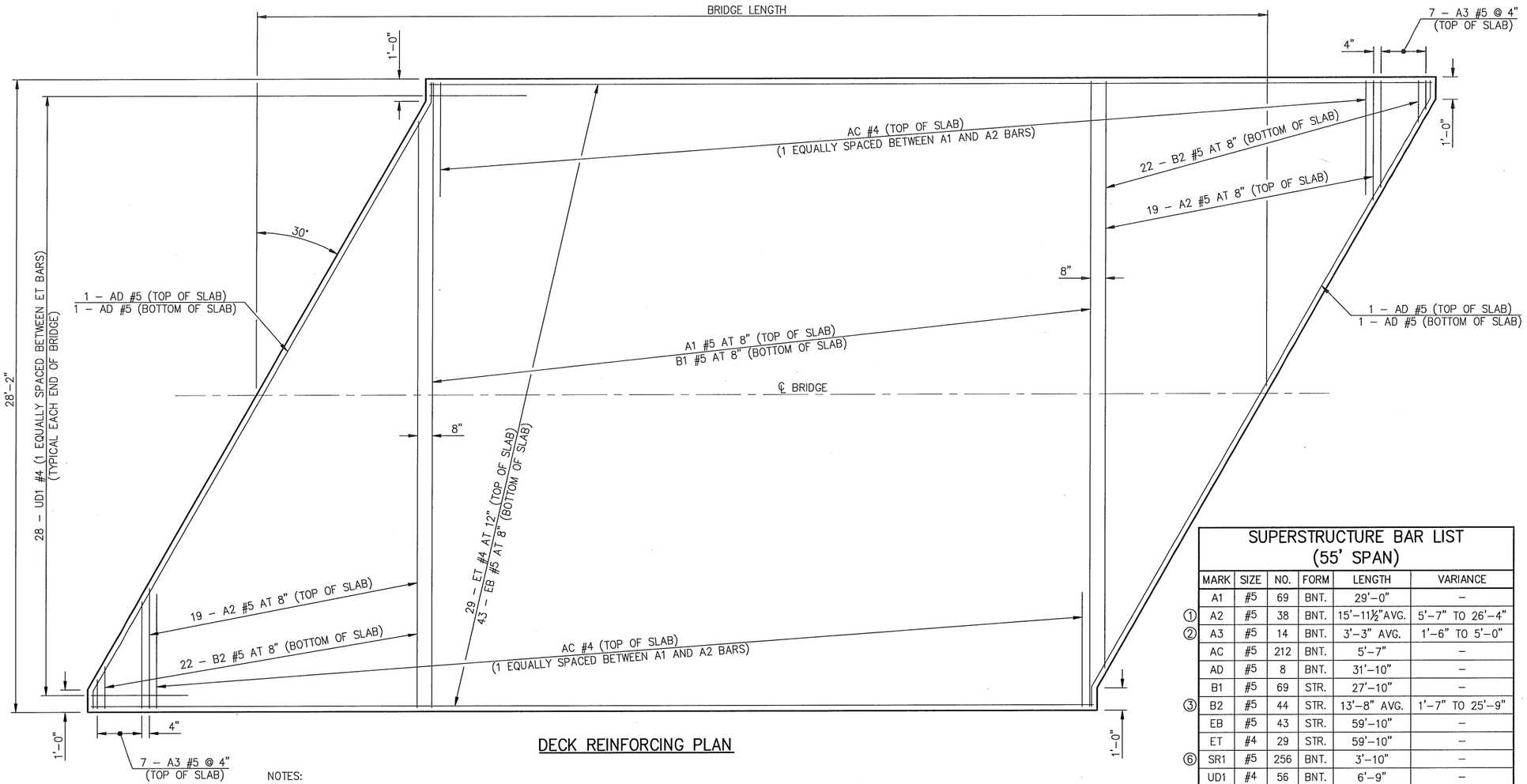
GUY ENGINEERING SERVICES, INC.

CED1 & CED8 STANDARDS

DETAILS OF DECK SLAB (0° SKEW)

STANDARDS FOR SINGLE SPAN BRIDGES WITH CROSSTOWN STEEL BEAMS, 7' OR 10' DEEP SEAT CONVENTIONAL ABUTMENTS, 26' CLEAR ROADWAY

2009 SPECIFICATIONS | CTSBSTD–DKSLB–7FT..10FT–SK0 | R0



DECK REINFORCING PLAN

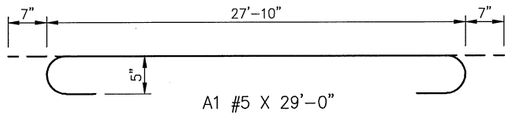
NOTES:

LEFT-FORWARD SKEW SHOWN ABOVE IN "DECK REINFORCING PLAN". RIGHT-FORWARD SKEW OPPOSITE HAND.

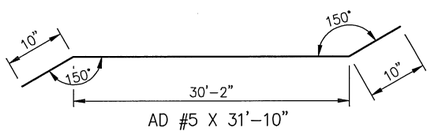
SR1 BARS NOT SHOWN FOR CLARITY. SEE STANDARD CTSBSTD-RAIL-7FT..10FT-SK0..30 AND ODOT STANDARD TR3-2 FOR LOCATIONS OF SR1 BARS.

TWO ADDITIONAL AD BARS ARE LOCATED ABOVE THE BACKWALL AT EACH ABUTMENT, AND ARE NOT SHOWN ON THE "DECK REINFORCING PLAN" FOR CLARITY. THESE ADDITIONAL AD BARS ARE INCLUDED IN THE SUPERSTRUCTURE BAR LISTS ON THIS SHEET. SEE THE "TYPICAL SLAB REINFORCING AT ABUTMENT BACKWALL" DETAIL ON STANDARD CTSBSTD-LONGSECT-7FT..10FT-SK0..30 FOR LOCATION OF THE ADDITIONAL AD BARS.

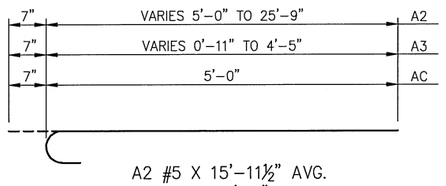
SEE THE "TYPICAL SLAB REINFORCING AT ABUTMENT BACKWALL" DETAIL ON STANDARD CTSBSTD-LONGSECT-7FT..10FT-SK0..30 FOR PLACEMENT OF THE UD1 BARS.



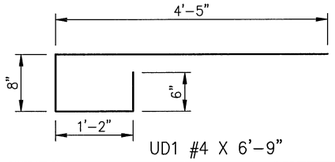
A1 #5 X 29'-0"



AD #5 X 31'-10"



A2 #5 X 15'-11½" AVG.
A3 #5 X 3'-3" AVG.
AC #5 X 5'-7"



UD1 #4 X 6'-9"

SUPERSTRUCTURE BAR LIST (65' SPAN)

	MARK	SIZE	NO.	FORM	LENGTH	VARIANCE
	A1	#5	84	BNT.	29'-0"	–
①	A2	#5	38	BNT.	15'-11½"AVG.	5'-7" TO 26'-4"
②	A3	#5	14	BNT.	3'-3" AVG.	1'-6" TO 5'-0"
	AC	#5	242	BNT.	5'-7"	–
	AD	#5	8	BNT.	31'-10"	–
	B1	#5	84	STR.	27'-10"	–
③	B2	#5	44	STR.	13'-8" AVG.	1'-7" TO 25'-9"
④	EB	#5	43	STR.	72'-4"	–
⑤	ET	#4	29	STR.	71'-10"	–
⑥	SR1	#5	292	BNT.	3'-10"	–
	UD1	#4	56	BNT.	6'-9"	–

SUPERSTRUCTURE BAR LIST (55' SPAN)

	MARK	SIZE	NO.	FORM	LENGTH	VARIANCE
	A1	#5	69	BNT.	29'-0"	–
①	A2	#5	38	BNT.	15'-11½"AVG.	5'-7" TO 26'-4"
②	A3	#5	14	BNT.	3'-3" AVG.	1'-6" TO 5'-0"
	AC	#5	212	BNT.	5'-7"	–
	AD	#5	8	BNT.	31'-10"	–
	B1	#5	69	STR.	27'-10"	–
③	B2	#5	44	STR.	13'-8" AVG.	1'-7" TO 25'-9"
	EB	#5	43	STR.	59'-10"	–
	ET	#4	29	STR.	59'-10"	–
⑥	SR1	#5	256	BNT.	3'-10"	–
	UD1	#4	56	BNT.	6'-9"	–

SUPERSTRUCTURE BAR LIST (60' SPAN)

	MARK	SIZE	NO.	FORM	LENGTH	VARIANCE
	A1	#5	76	BNT.	29'-0"	–
①	A2	#5	38	BNT.	15'-11½"AVG.	5'-7" TO 26'-4"
②	A3	#5	14	BNT.	3'-3" AVG.	1'-6" TO 5'-0"
	AC	#5	226	BNT.	5'-7"	–
	AD	#5	8	BNT.	31'-10"	–
	B1	#5	76	STR.	27'-10"	–
③	B2	#5	44	STR.	13'-8" AVG.	1'-7" TO 25'-9"
④	EB	#5	43	STR.	67'-4"	–
⑤	ET	#4	29	STR.	66'-10"	–
⑥	SR1	#5	260	BNT.	3'-10"	–
	UD1	#4	56	BNT.	6'-9"	–

SUPERSTRUCTURE BAR LIST (40' SPAN)

	MARK	SIZE	NO.	FORM	LENGTH	VARIANCE
	A1	#5	46	BNT.	29'-0"	–
①	A2	#5	38	BNT.	15'-11½"AVG.	5'-7" TO 26'-4"
②	A3	#5	14	BNT.	3'-3" AVG.	1'-6" TO 5'-0"
	AC	#5	166	BNT.	5'-7"	–
	AD	#5	8	BNT.	31'-10"	–
	B1	#5	46	STR.	27'-10"	–
③	B2	#5	44	STR.	13'-8" AVG.	1'-7" TO 25'-9"
	EB	#5	43	STR.	44'-10"	–
	ET	#4	29	STR.	44'-10"	–
⑥	SR1	#5	188	BNT.	3'-10"	–
	UD1	#4	56	BNT.	6'-9"	–

SUPERSTRUCTURE BAR LIST (45' SPAN)

	MARK	SIZE	NO.	FORM	LENGTH	VARIANCE
	A1	#5	54	BNT.	29'-0"	–
①	A2	#5	38	BNT.	15'-11½"AVG.	5'-7" TO 26'-4"
②	A3	#5	14	BNT.	3'-3" AVG.	1'-6" TO 5'-0"
	AC	#5	182	BNT.	5'-7"	–
	AD	#5	8	BNT.	31'-10"	–
	B1	#5	54	STR.	27'-10"	–
③	B2	#5	44	STR.	13'-8" AVG.	1'-7" TO 25'-9"
	EB	#5	43	STR.	49'-10"	–
	ET	#4	29	STR.	49'-10"	–
⑥	SR1	#5	220	BNT.	3'-10"	–
	UD1	#4	56	BNT.	6'-9"	–

SUPERSTRUCTURE BAR LIST (50' SPAN)

	MARK	SIZE	NO.	FORM	LENGTH	VARIANCE
	A1	#5	61	BNT.	29'-0"	–
①	A2	#5	38	BNT.	15'-11½"AVG.	5'-7" TO 26'-4"
②	A3	#5	14	BNT.	3'-3" AVG.	1'-6" TO 5'-0"
	AC	#5	196	BNT.	5'-7"	–
	AD	#5	8	BNT.	31'-10"	–
	B1	#5	61	STR.	27'-10"	–
③	B2	#5	44	STR.	13'-8" AVG.	1'-7" TO 25'-9"
	EB	#5	43	STR.	54'-10"	–
	ET	#4	29	STR.	54'-10"	–
⑥	SR1	#5	224	BNT.	3'-10"	–
	UD1	#4	56	BNT.	6'-9"	–

① 2 SETS OF 19 BARS.
② 2 SETS OF 7 BARS.
③ 2 SETS OF 22 BARS.
④ LENGTH INCLUDES ONE 2'-6" LAP. STAGGER LAPS.
⑤ LENGTH INCLUDES ONE 2'-0" LAP. STAGGER LAPS.
⑥ FOR SR1 BAR BEND, SEE ODOT STANDARD TR3-2.

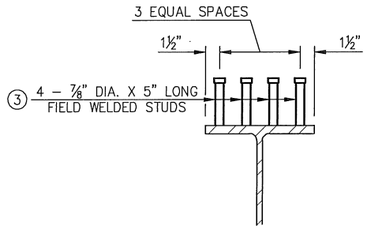
DESIGN	MBS	7/15
DETAIL	SLP	7/15
CHECK	MBS	7/15
GUY ENGINEERING SERVICES, INC.		

CED1 & CED8 STANDARDS

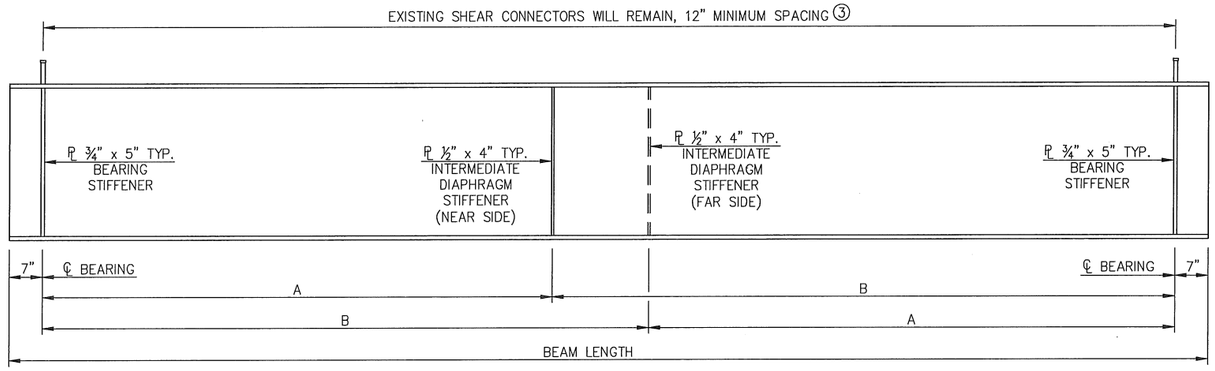
DETAILS OF DECK SLAB (30° SKEW)

STANDARDS FOR SINGLE SPAN BRIDGES WITH CROSSTOWN STEEL BEAMS, 7' OR 10' DEEP SEAT CONVENTIONAL ABUTMENTS, 26' CLEAR ROADWAY

2009 SPECIFICATIONS | CTSBSTD-DKSLB-7FT..10FT-SK30 | R0

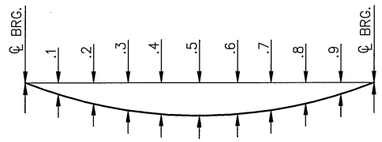


SHEAR CONNECTOR DETAIL



ELEVATION

BRIDGE SKEW 30° LEFT FORWARD IS SHOWN IN DRAWING



DEAD LOAD DEFLECTION DIAGRAM

LFD OPERATING RATING		
BEAM	SPAN	LFD ① OPERATING RATING
W33 X 130	40'	HS 105.8
	45'	HS 85.0
	50'	HS 70.0
W33 X 141	40'	HS 113.6
	45'	HS 91.8
	50'	HS 75.8
W36 X 135	40'	HS 116.0
	45'	HS 93.6
	50'	HS 77.2
W36 X150	40'	HS 128.2
	45'	HS 104.4
	50'	HS 86.4

BEAM SCHEDULE – W33 X 130, W33 X 141, W36 X 135 OR W36 X 150							
SPAN	BEAM LENGTH	BRIDGE SKEW					
		0°		30° LEFT FORWARD		30° RIGHT FORWARD	
		A	B	A	B	A	B
40'	39'–8"	19'–3"	19'–3"	17'–3½"	21'–2½"	21'–2½"	17'–3½"
45'	44'–8"	21'–9"	21'–9"	19'–9½"	23'–8½"	23'–8½"	19'–9½"
50'	49'–8"	24'–3"	24'–3"	22'–3½"	26'–2½"	26'–2½"	22'–3½"

DEFLECTION SCHEDULE W33 X 130 ② DUE TO STEEL SIP FORMS, DECK SLAB, HAUNCH, AND CONCRETE TRAFFIC RAIL (TR3)						
SPAN	INTERIOR BEAMS					
	℄ BEARING	.1 AND .9	.2 AND .8	.3 AND .7	.4 AND .6	.5
40'	0.00"	0.06"	0.12"	0.16"	0.19"	0.20"
45'	0.00"	0.10"	0.19"	0.26"	0.31"	0.32"
50'	0.00"	0.16"	0.30"	0.41"	0.48"	0.50"
SPAN	EXTERIOR BEAMS					
	℄ BEARING	.1 AND .9	.2 AND .8	.3 AND .7	.4 AND .6	.5
40'	0.00"	0.04"	0.08"	0.10"	0.12"	0.13"
45'	0.00"	0.07"	0.12"	0.17"	0.20"	0.21"
50'	0.00"	0.10"	0.19"	0.26"	0.31"	0.32"

DEFLECTION SCHEDULE W33 X 141 ② DUE TO STEEL SIP FORMS, DECK SLAB, HAUNCH, AND CONCRETE TRAFFIC RAIL (TR3)						
SPAN	INTERIOR BEAMS					
	℄ BEARING	.1 AND .9	.2 AND .8	.3 AND .7	.4 AND .6	.5
40'	0.00"	0.06"	0.11"	0.15"	0.17"	0.18"
45'	0.00"	0.09"	0.17"	0.24"	0.28"	0.29"
50'	0.00"	0.14"	0.27"	0.37"	0.43"	0.45"
SPAN	EXTERIOR BEAMS					
	℄ BEARING	.1 AND .9	.2 AND .8	.3 AND .7	.4 AND .6	.5
40'	0.00"	0.04"	0.07"	0.09"	0.11"	0.12"
45'	0.00"	0.06"	0.11"	0.15"	0.18"	0.19"
50'	0.00"	0.09"	0.17"	0.24"	0.28"	0.29"

DEFLECTION SCHEDULE W36 X 135 ② DUE TO STEEL SIP FORMS, DECK SLAB, HAUNCH, AND CONCRETE TRAFFIC RAIL (TR3)						
SPAN	INTERIOR BEAMS					
	℄ BEARING	.1 AND .9	.2 AND .8	.3 AND .7	.4 AND .6	.5
40'	0.00"	0.05"	0.10"	0.14"	0.16"	0.17"
45'	0.00"	0.09"	0.17"	0.23"	0.27"	0.28"
50'	0.00"	0.14"	0.26"	0.35"	0.41"	0.43"
SPAN	EXTERIOR BEAMS					
	℄ BEARING	.1 AND .9	.2 AND .8	.3 AND .7	.4 AND .6	.5
40'	0.00"	0.04"	0.07"	0.09"	0.11"	0.11
45'	0.00"	0.06"	0.11"	0.15"	0.17"	0.18"
50'	0.00"	0.09"	0.17"	0.23"	0.27"	0.28"

DEFLECTION SCHEDULE W36 X 150 ② DUE TO STEEL SIP FORMS, DECK SLAB, HAUNCH, AND CONCRETE TRAFFIC RAIL (TR3)						
SPAN	INTERIOR BEAMS					
	℄ BEARING	.1 AND .9	.2 AND .8	.3 AND .7	.4 AND .6	.5
40'	0.00"	0.05"	0.09"	0.12"	0.14"	0.15"
45'	0.00"	0.08"	0.14"	0.20"	0.23"	0.24"
50'	0.00"	0.12"	0.22"	0.30"	0.36"	0.37"
SPAN	EXTERIOR BEAMS					
	℄ BEARING	.1 AND .9	.2 AND .8	.3 AND .7	.4 AND .6	.5
40'	0.00"	0.03"	0.06"	0.08"	0.09"	0.10"
45'	0.00"	0.05"	0.09"	0.13"	0.15"	0.16"
50'	0.00"	0.08"	0.14"	0.20"	0.23"	0.24"

NOTES:

STRUCTURAL STEEL FOR EXISTING CROSSTOWN ROLLED BEAMS IS ASTM A–36, GRADE 36.

NEW STIFFENER PLATES SHALL CONFORM TO AASHTO M 270 (ASTM A 709), GRADE 36 MINIMUM. ADDITIONALLY, THE STRUCTURAL STEEL FOR NEW STIFFENER PLATES SHALL SATISFY THE CHARPY V–NOTCH INPACT TEST REQUIREMENTS OF AASHTO M 270 FOR ZONE 2 (NON–FRACTURE CRITICAL).

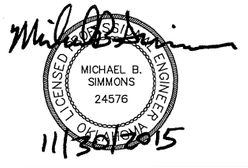
NEW SHEAR CONNECTORS SHALL CONFORM TO AASHTO M 169 (ASTM A 108), COLD DRAWN BARS, GRADES 1015, 1018 OR 1020, SEMI–KILLED OR FULLY KILLED DEOXIDATION.

FOR DETAILS OF BEARING STIFFENER AND INTERMEDIATE STIFFENER PLATES, SEE STANDARD CTSBSTD–DIAPH–7FT..10FT–SK0 OR STANDARD CTSBSTD–DIAPH–7FT..10FT–SK30, AS APPROPRIATE.

① THE LFD OPERATING RATINGS SHOWN APPLY ONLY TO THE ROLLED BEAMS OF A BRIDGE CONSTRUCTED IN STRICT CONFORMANCE TO THESE STANDARDS AND THE 2009 ODOT STANDARD SPECIFICATIONS.

② DEAD LOAD DEFLECTIONS SHOWN AT THE TENTH POINTS ARE THE THEORETICAL BEAM DEFLECTIONS DUE TO A 5 PSF SIP FORMS ALLOWANCE, DECK SLAB, HAUNCH AND CONCRETE TRAFFIC RAIL (TR–3). THE DEAD LOAD DEFLECTIONS SHALL BE ACCOUNTED FOR IN THE HAUNCH DEPTH CALCULATIONS.

③ EXISTING SHEAR CONNECTORS SHALL REMAIN ON THE BEAMS. PROVIDE ADDITIONAL ROWS OF SHEAR CONNECTORS AS SHOWN TO INSURE THE MAXIMUM DISTANCE BETWEEN ADJACENT ROWS IS NO MORE THAN 12". ADDITIONAL SHEAR CONNECTORS SHALL NOT BE MEASURED FOR PAYMENT AND SHALL BE INCLUDED IN OTHER ITEMS OF WORK.



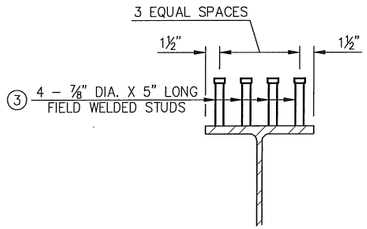
DESIGN	MBS	7/15
DETAIL	SLP	7/15
CHECK	MBS	7/15
GUY ENGINEERING SERVICES, INC.		

CED1 & CED8 STANDARDS

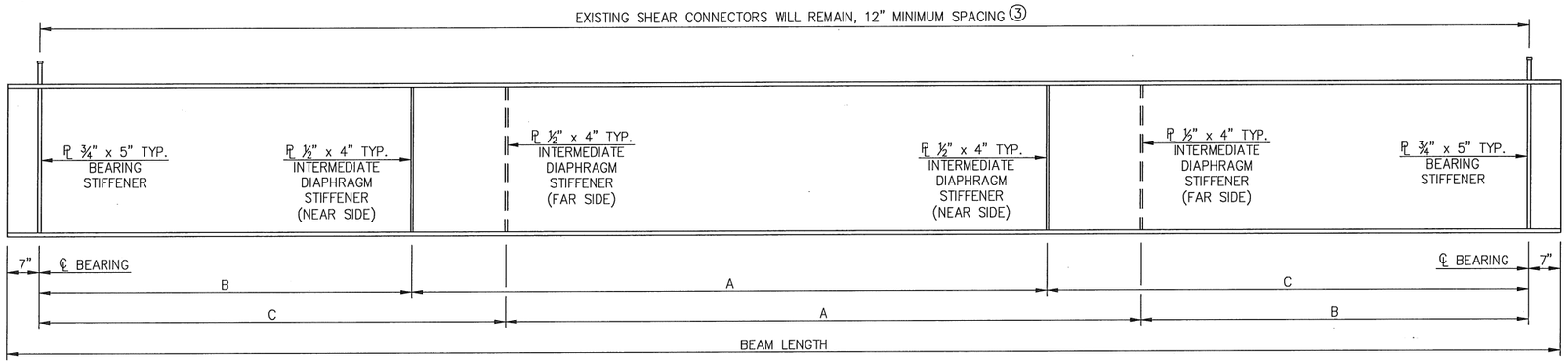
DETAILS OF BEAMS (40', 45' AND 50' SPANS)

STANDARDS FOR SINGLE SPAN BRIDGES WITH CROSSTOWN STEEL BEAMS, 7' OR 10' DEEP SEAT CONVENTIONAL ABUTMENTS, 26' CLEAR ROADWAY

2009 SPECIFICATIONS | CTSBSTD–BEAMS–40–50–7FT..10FT–SK0..30 | R0



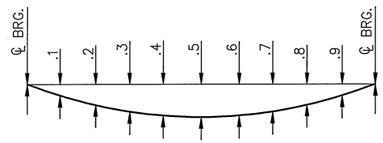
SHEAR CONNECTOR DETAIL



ELEVATION

BRIDGE SKEW 30° LEFT FORWARD IS SHOWN IN DRAWING

LFD OPERATING RATING		
BEAM	SPAN	LFD ① OPERATING RATING
W33 X 130	55'	HS 58.4
	60'	HS 49.4
	65'	N/A ④
W33 X 141	55'	HS 63.6
	60'	HS 53.8
	65'	HS 46.0
W36 X 135	55'	HS 64.8
	60'	HS 55.2
	65'	HS 47.2
W36 X150	55'	HS 72.8
	60'	HS 62.0
	65'	HS 53.4



DEAD LOAD DEFLECTION DIAGRAM

BEAM SCHEDULE – W33 X 130, W33 X 141, W36 X 135 OR W36 X 150								
SPAN	BEAM LENGTH	A	BRIDGE SKEW					
			0°		30° LEFT FORWARD		30° RIGHT FORWARD	
			B	C	B	C	B	C
55'	54'–8"	17'–10"	17'–10"	17'–10"	15'–10½"	19'–9½"	19'–9½"	15'–10½"
60'	59'–8"	19'–6"	19'–6"	19'–6"	17'–6½"	21'–5½"	21'–5½"	17'–6½"
④ 65'	64'–8"	21'–2"	21'–2"	21'–2"	19'–2½"	23'–1½"	23'–1½"	19'–2½"

DEFLECTION SCHEDULE W33 X 130 ② DUE TO STEEL SIP FORMS, DECK SLAB, HAUNCH, AND CONCRETE TRAFFIC RAIL (TR3)						
SPAN	INTERIOR BEAMS					
	℄ BEARING	.1 AND .9	.2 AND .8	.3 AND .7	.4 AND .6	.5
55'	0.00"	0.23"	0.44"	0.60"	0.70"	0.74"
60'	0.00"	0.33"	0.63"	0.86"	1.01"	1.06"
SPAN	EXTERIOR BEAMS					
	℄ BEARING	.1 AND .9	.2 AND .8	.3 AND .7	.4 AND .6	.5
55'	0.00"	0.15"	0.28"	0.39"	0.46"	0.48"
60'	0.00"	0.21"	0.41"	0.56"	0.65"	0.68"

DEFLECTION SCHEDULE W33 X 141 ② DUE TO STEEL SIP FORMS, DECK SLAB, HAUNCH, AND CONCRETE TRAFFIC RAIL (TR3)						
SPAN	INTERIOR BEAMS					
	℄ BEARING	.1 AND .9	.2 AND .8	.3 AND .7	.4 AND .6	.5
55'	0.00"	0.21"	0.40"	0.54"	0.64"	0.67"
60'	0.00"	0.30"	0.57"	0.78"	0.91"	0.95"
65'	0.00"	0.42"	0.79"	1.08"	1.26"	1.32"
SPAN	EXTERIOR BEAMS					
	℄ BEARING	.1 AND .9	.2 AND .8	.3 AND .7	.4 AND .6	.5
55'	0.00"	0.14"	0.26"	0.35"	0.41"	0.43"
60'	0.00"	0.19"	0.37"	0.50"	0.59"	0.62"
65'	0.00"	0.27"	0.51"	0.70"	0.82"	0.86"

DEFLECTION SCHEDULE W36 X 135 ② DUE TO STEEL SIP FORMS, DECK SLAB, HAUNCH, AND CONCRETE TRAFFIC RAIL (TR3)						
SPAN	INTERIOR BEAMS					
	℄ BEARING	.1 AND .9	.2 AND .8	.3 AND .7	.4 AND .6	.5
55'	0.00"	0.20"	0.38"	0.52"	0.61"	0.64"
60'	0.00"	0.29"	0.54"	0.74"	0.87"	0.91"
65'	0.00"	0.40"	0.75"	1.03"	1.20"	1.26"
SPAN	EXTERIOR BEAMS					
	℄ BEARING	.1 AND .9	.2 AND .8	.3 AND .7	.4 AND .6	.5
55'	0.00"	0.13"	0.24"	0.34"	0.39"	0.41"
60'	0.00"	0.19"	0.35"	0.48"	0.56"	0.59"
65'	0.00"	0.26"	0.49"	0.67"	0.78"	0.82"

DEFLECTION SCHEDULE W36 X 150 ② DUE TO STEEL SIP FORMS, DECK SLAB, HAUNCH, AND CONCRETE TRAFFIC RAIL (TR3)						
SPAN	INTERIOR BEAMS					
	℄ BEARING	.1 AND .9	.2 AND .8	.3 AND .7	.4 AND .6	.5
55'	0.00"	0.17"	0.33"	0.45"	0.53"	0.55"
60'	0.00"	0.25"	0.47"	0.64"	0.75"	0.79"
65'	0.00"	0.34"	0.65"	0.89"	1.04"	1.09"
SPAN	EXTERIOR BEAMS					
	℄ BEARING	.1 AND .9	.2 AND .8	.3 AND .7	.4 AND .6	.5
55'	0.00"	0.11"	0.21"	0.29"	0.34"	0.36"
60'	0.00"	0.16"	0.30"	0.42"	0.49"	0.51"
65'	0.00"	0.22"	0.42"	0.58"	0.68"	0.71"

NOTES:

STRUCTURAL STEEL FOR EXISTING CROSSTOWN ROLLED BEAMS IS ASTM A–36, GRADE 36.

NEW STIFFENER PLATES SHALL CONFORM TO AASHTO M 270 (ASTM A 709), GRADE 36 MINIMUM. ADDITIONALLY, THE STRUCTURAL STEEL FOR NEW STIFFENER PLATES SHALL SATISFY THE CHARPY V–NOTCH INPACT TEST REQUIREMENTS OF AASHTO M 270 FOR ZONE 2 (NON–FRACTURE CRITICAL).

NEW SHEAR CONNECTORS SHALL CONFORM TO AASHTO M 169 (ASTM A 108), COLD DRAWN BARS, GRADES 1015, 1018 OR 1020, SEMI–KILLED OR FULLY KILLED DEOXIDATION.

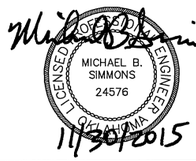
FOR DETAILS OF BEARING STIFFENER AND INTERMEDIATE STIFFENER PLATES, SEE STANDARD CTSBSTD–DIAPH–7FT..10FT–SKO OR STANDARD CTSBSTD–DIAPH–7FT..10FT–SK30, AS APPROPRIATE.

① THE LFD OPERATING RATINGS SHOWN APPLY ONLY TO THE ROLLED BEAMS OF A BRIDGE CONSTRUCTED IN STRICT CONFORMANCE TO THESE STANDARDS AND THE 2009 ODOT STANDARD SPECIFICATIONS.

② DEAD LOAD DEFLECTIONS SHOWN AT THE TENTH POINTS ARE THE THEORETICAL BEAM DEFLECTIONS DUE TO A 5 PSF SIP FORMS ALLOWANCE, DECK SLAB, HAUNCH AND CONCRETE TRAFFIC RAIL (TR–3). THE DEAD LOAD DEFLECTIONS SHALL BE ACCOUNTED FOR IN THE HAUNCH DEPTH CALCULATIONS.

③ EXISTING SHEAR CONNECTORS SHALL REMAIN ON THE BEAMS. PROVIDE ADDITIONAL ROWS OF SHEAR CONNECTORS AS SHOWN TO INSURE THE MAXIMUM DISTANCE BETWEEN ADJACENT ROWS IS NO MORE THAN 12". ADDITIONAL SHEAR CONNECTORS SHALL NOT BE MEASURED FOR PAYMENT AND SHALL BE INCLUDED IN OTHER ITEMS OF WORK.

④ THE W33 X 130 BEAMS SHALL NOT BE USED FOR 65' SPANS.



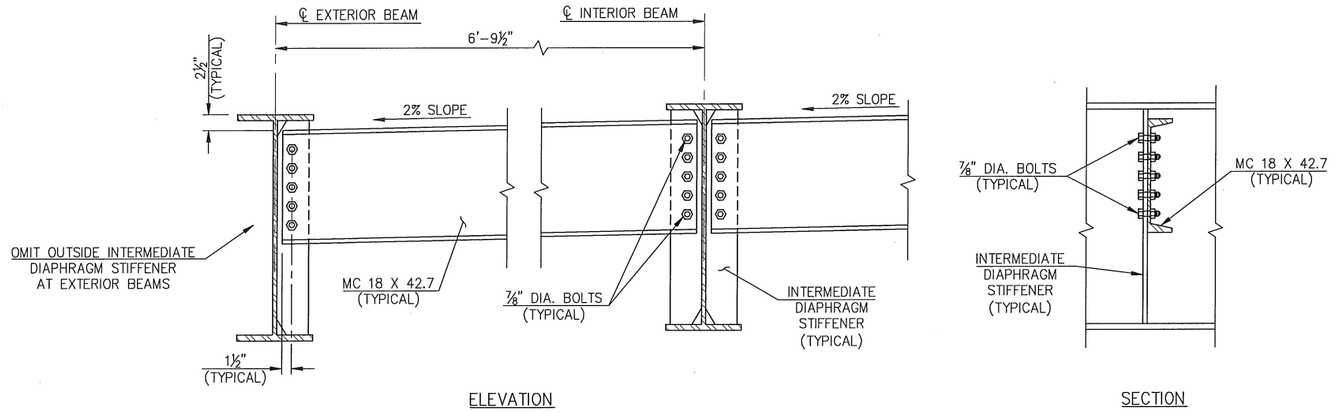
DESIGN	MBS	7/15
DETAIL	SLP	7/15
CHECK	MBS	7/15
GUY ENGINEERING SERVICES, INC.		

CED1 & CEDB STANDARDS

DETAILS OF BEAMS (55', 60' AND 65' SPANS)

STANDARDS FOR SINGLE SPAN BRIDGES WITH CROSSTOWN STEEL BEAMS, 7' OR 10' DEEP SEAT CONVENTIONAL ABUTMENTS, 26' CLEAR ROADWAY

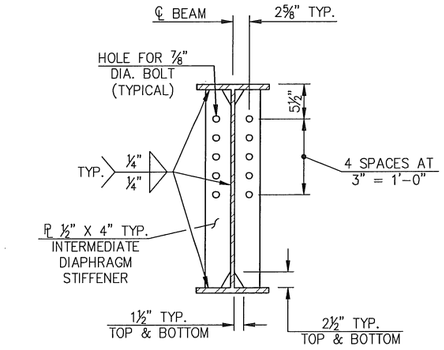
2009 SPECIFICATIONS	CTSBSTD–BEAMS–55–65–7FT..10FT–SKO..30	R0



ELEVATION

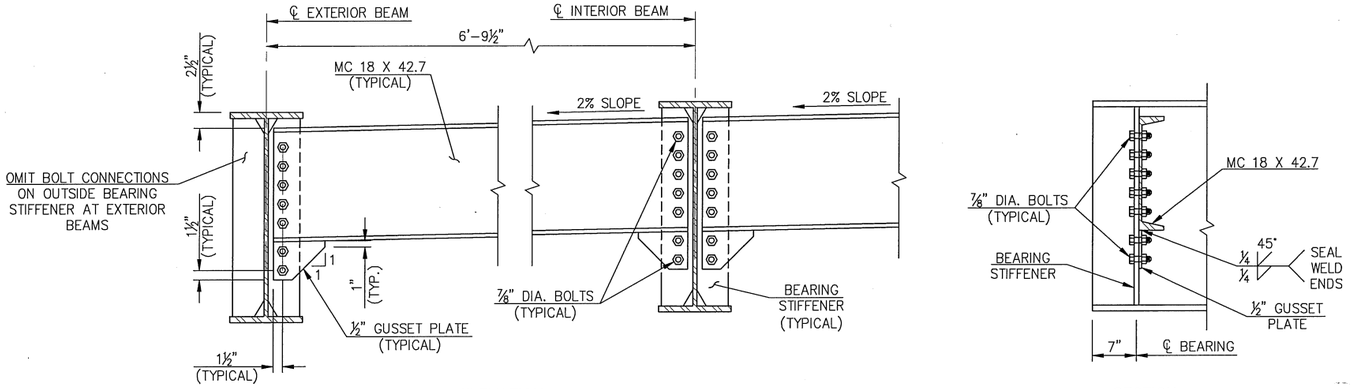
SECTION

INTERMEDIATE DIAPHRAGM ELEVATION FOR W33 AND W36 BEAMS



INTERMEDIATE DIAPHRAGM STIFFENER DETAIL – W33 AND W36

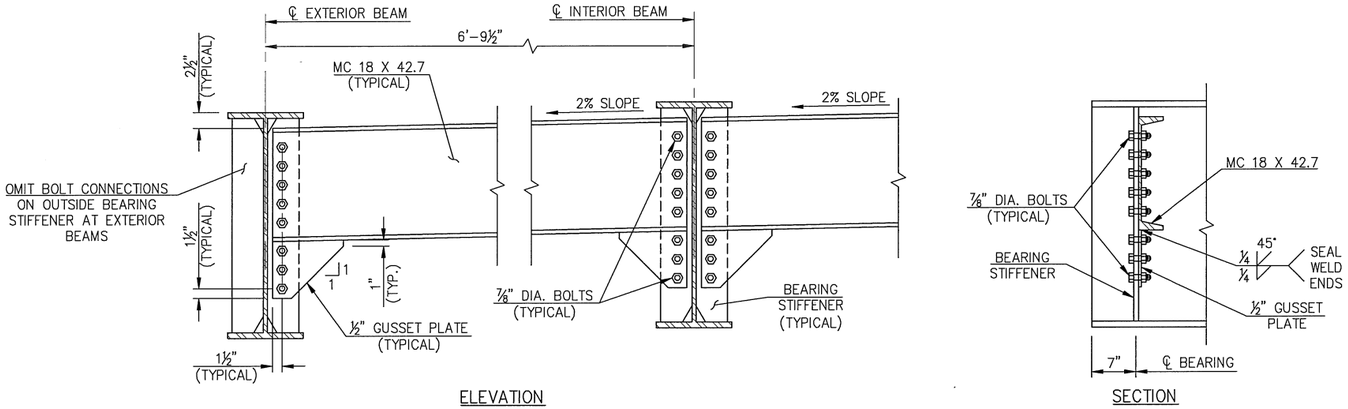
DETAIL SHOWN AT INTERIOR BEAM. OMIT INTERMEDIATE DIAPHRAGM STIFFENERS AT OUTSIDE FACE OF EXTERIOR BEAMS.



ELEVATION

SECTION

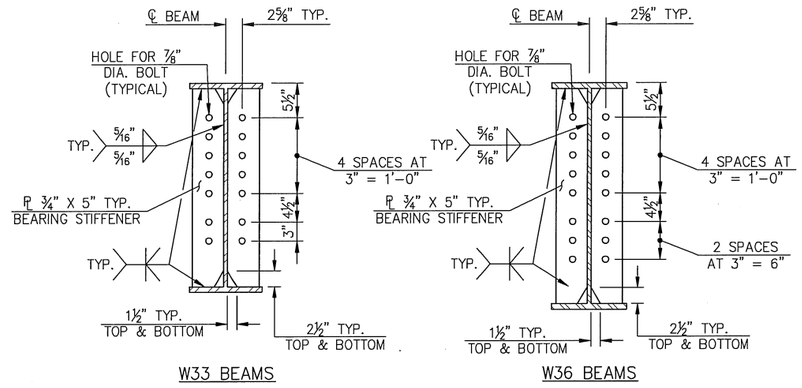
END DIAPHRAGM DETAILS FOR W33 BEAMS



ELEVATION

SECTION

END DIAPHRAGM DETAILS FOR W36 BEAMS



W33 BEAMS

W36 BEAMS

BEARING STIFFENER DETAILS

DETAILS SHOWN AT INTERIOR BEAM. OMIT BOLT HOLES ONLY IN BEARING STIFFENERS AT OUTSIDE FACE OF EXTERIOR BEAMS.

NOTES:

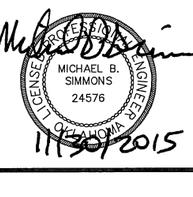
STRUCTURAL STEEL FOR EXISTING CROSSTOWN ROLLED BEAMS IS ASTM A–36, GRADE 36.

STRUCTURAL STEEL FOR NEW BEARING STIFFENER PLATES AND INTERMEDIATE STIFFENER PLATES SHALL CONFORM TO AASHTO M 270 (ASTM A 709), GRADE 36 MINIMUM. ADDITIONALLY, THE STRUCTURAL STEEL FOR NEW STIFFENER PLATES SHALL SATISFY THE CHARPY V–NOTCH INPACT TEST REQUIREMENTS OF AASHTO M 270 FOR ZONE 2 (NON–FRACTURE CRITICAL).

STRUCTURAL STEEL FOR NEW CHANNEL DIAPHRAGMS AND GUSSET PLATES SHALL CONFORM TO AASHTO M 270 (ASTM A 709), GRADE 36 MINIMUM (CHARPY V–NOTCH TESTING NOT REQUIRED).

BOLTS SHALL CONFORM TO AASHTO M 164 (ASTM A 325), TYPE 3. HEX NUTS SHALL CONFORM TO AASHTO M 291 (ASTM A 563), PROPERTY CLASS 8S3 OR 10S3. WASHERS SHALL CONFORM TO AASHTO M 293 (ASTM F 436), TYPE 3.

CONTRACTOR MAY ELECT TO FABRICATE A BENT PLATE DIAPHRAGM IN LIEU OF CHANNEL AND GUSSET PLATES. BENT PLATE SHALL BE ½" MINIMUM THICKNESS AND FORMED IN THE SHAPE OF CHANNEL WITH MINIMUM 4" FLANGES. DEPTH OF BENT PLATE DIAPHRAGM SHALL BE EQUAL TO OR GREATER THAN THAT SHOWN FOR COMBINED CHANNEL AND GUSSET PLATE. COST TO CONSTRUCT BENT PLATE DIAPHRAGM SHALL BE AT THE CONTRACTOR'S EXPENSE.



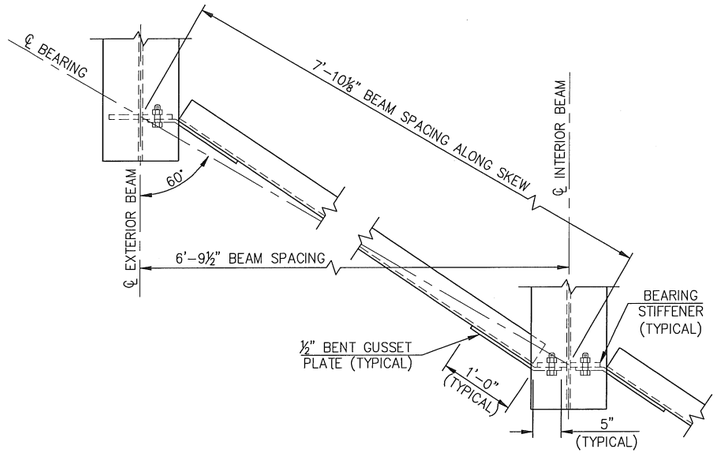
DESIGN	MBS	7/15
DETAIL	SLP	7/15
CHECK	MBS	7/15
GUY ENGINEERING SERVICES, INC.		

CED1 & CED8 STANDARDS

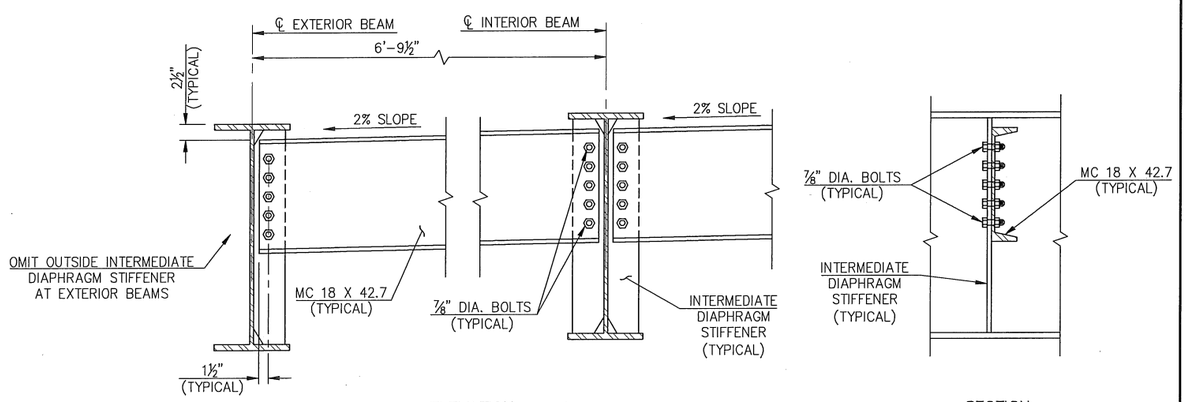
DETAILS OF DIAPHRAGMS (0° SKEW)

STANDARDS FOR SINGLE SPAN BRIDGES WITH CROSSTOWN STEEL BEAMS, 7' OR 10' DEEP SEAT CONVENTIONAL ABUTMENTS, 26' CLEAR ROADWAY

2009 SPECIFICATIONS | CTSBSTD–DIAPH–7FT..10FT–SKO | R0

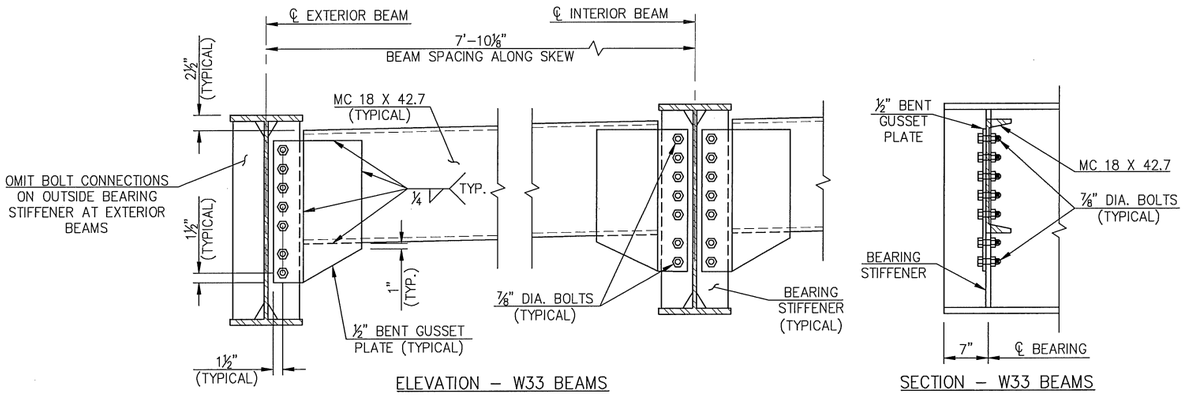


PLAN – W33 AND W36 BEAMS



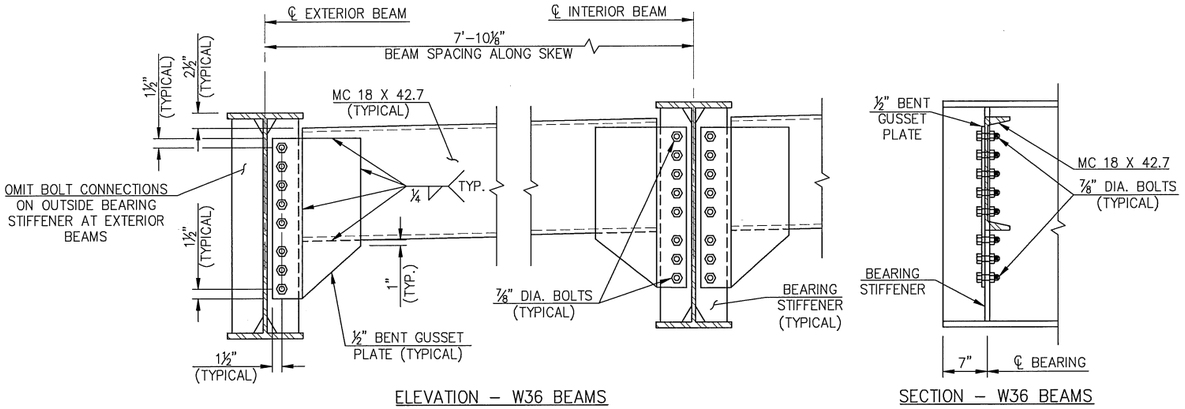
ELEVATION SECTION

INTERMEDIATE DIAPHRAGM ELEVATION FOR W33 AND W36 BEAMS



ELEVATION – W33 BEAMS

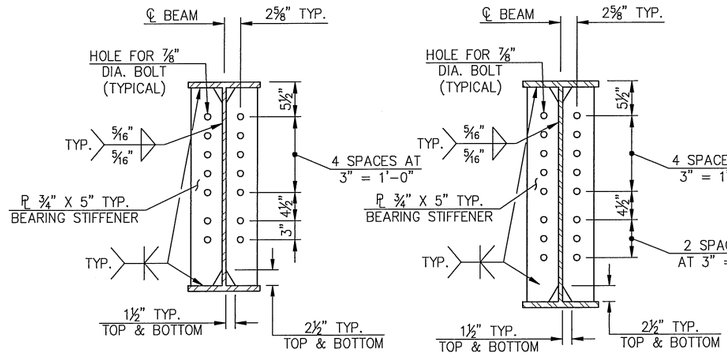
SECTION – W33 BEAMS



ELEVATION – W36 BEAMS

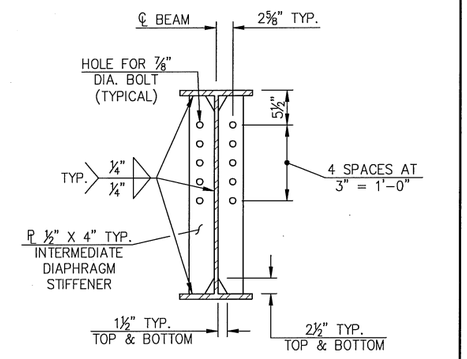
SECTION – W36 BEAMS

END DIAPHRAGM DETAILS



BEARING STIFFENER DETAILS

DETAILS SHOWN AT INTERIOR BEAM. OMIT BOLT HOLES ONLY IN BEARING STIFFENERS AT OUTSIDE FACE OF EXTERIOR BEAMS.



INTERMEDIATE DIAPHRAGM STIFFENER DETAIL – W33 AND W36

DETAIL SHOWN AT INTERIOR BEAM. OMIT INTERMEDIATE DIAPHRAGM STIFFENERS AT OUTSIDE FACE OF EXTERIOR BEAMS.

NOTES:

STRUCTURAL STEEL FOR EXISTING CROSSTOWN ROLLED BEAMS IS ASTM A–36, GRADE 36.

STRUCTURAL STEEL FOR NEW BEARING STIFFENER PLATES AND INTERMEDIATE STIFFENER PLATES SHALL CONFORM TO AASHTO M 270 (ASTM A 709), GRADE 36 MINIMUM. ADDITIONALLY, THE STRUCTURAL STEEL FOR NEW STIFFENER PLATES SHALL SATISFY THE CHARPY V–NOTCH INPACT TEST REQUIREMENTS OF AASHTO M 270 FOR ZONE 2 (NON–FRACTURE CRITICAL).

STRUCTURAL STEEL FOR NEW CHANNEL DIAPHRAGMS AND BENT GUSSET PLATES SHALL CONFORM TO AASHTO M 270 (ASTM A 709), GRADE 36 MINIMUM (CHARPY V–NOTCH TESTING NOT REQUIRED).

BOLTS SHALL CONFORM TO AASHTO M 164 (ASTM A 325), TYPE 3. HEX NUTS SHALL CONFORM TO AASHTO M 291 (ASTM A 563), PROPERTY CLASS 8S3 OR 10S3. WASHERS SHALL CONFORM TO AASHTO M 293 (ASTM F 436), TYPE 3.

CONTRACTOR MAY ELECT TO FABRICATE A BENT PLATE DIAPHRAGM IN LIEU OF CHANNEL AND GUSSET PLATES. BENT PLATE SHALL BE ½" MINIMUM THICKNESS AND FORMED IN THE SHAPE OF CHANNEL WITH MINIMUM 4" FLANGES. DEPTH OF BENT PLATE DIAPHRAGM SHALL BE EQUAL TO OR GREATER THAN THAT SHOWN FOR COMBINED CHANNEL AND GUSSET PLATE. COST TO CONSTRUCT BENT PLATE DIAPHRAGM SHALL BE AT THE CONTRACTOR'S EXPENSE.

LICENSED PROFESSIONAL ENGINEER
MICHAEL B. SIMMONS
24576
OKLAHOMA
11/30/2015

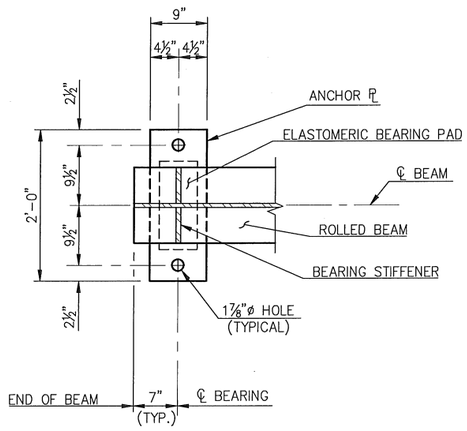
DESIGN	MBS	7/15
DETAIL	SLP	7/15
CHECK	MBS	7/15
GUY ENGINEERING SERVICES, INC.		

CED1 & CED8 STANDARDS

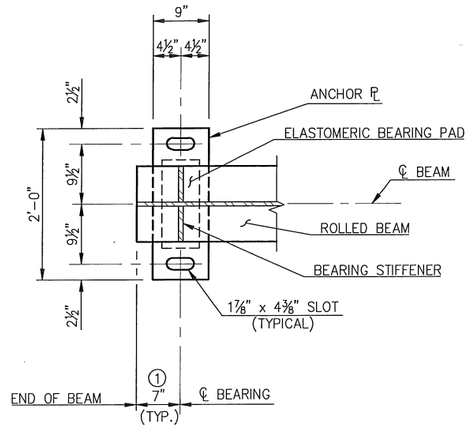
DETAILS OF DIAPHRAGMS (30° SKEW)

STANDARDS FOR SINGLE SPAN BRIDGES WITH CROSSTOWN STEEL BEAMS, 7' OR 10' DEEP SEAT CONVENTIONAL ABUTMENTS, 26' CLEAR ROADWAY

2009 SPECIFICATIONS | CTSBSTD–DIAPH–7FT..10FT–SK30 | R0

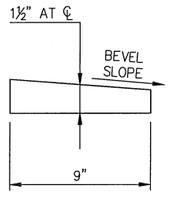


FIXED BEARING PLAN
ANCHOR BOLT ASSEMBLIES NOT SHOWN



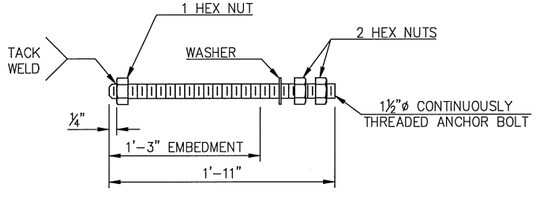
EXPANSION BEARING PLAN
ANCHOR BOLT ASSEMBLIES NOT SHOWN

① ANCHOR BOLTS SHALL BE CENTERED IN SLOTS DURING SETTING OF BEAMS. DIMENSION MAY VARY AT EXPANSION BEARING DEPENDING ON TEMPERATURE AT THE TIME OF BEAM SETTING.

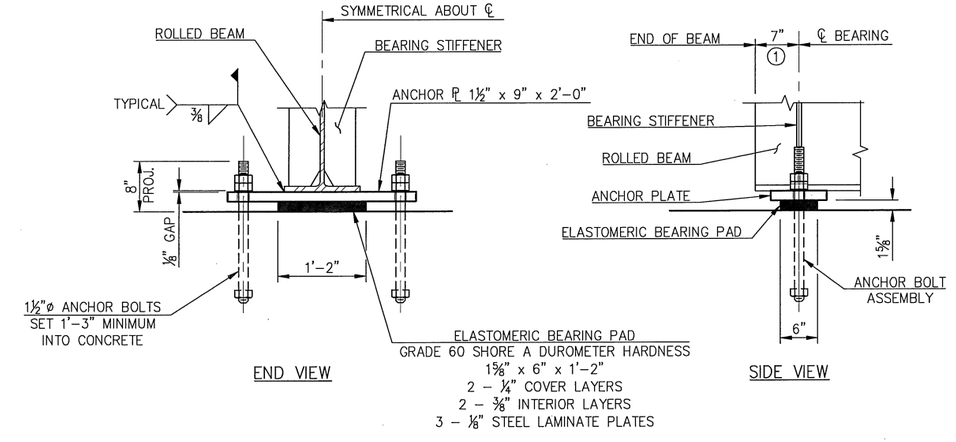


BEVELED ANCHOR PLATE DETAIL

BEVELED ANCHOR PLATE IS REQUIRED WHEN ANGLE BETWEEN UNDERSIDE OF BEAM AND HORIZONTAL EXCEEDS 1.0%. BEVEL SLOPE TO MATCH ANGLE BETWEEN BEAM AND HORIZONTAL. PAINT THICKER EDGE RED.



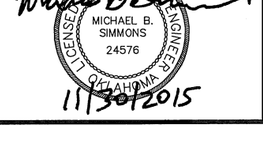
ANCHOR BOLT DETAIL



BEARING DETAILS

THE BEARINGS SHOWN ON THIS SHEET SHALL APPLY TO ALL BRIDGES BUILT IN STRICT CONFORMANCE TO THESE STANDARDS AND THE 2009 ODOT STANDARD SPECIFICATIONS REGARDLESS OF BEAM SIZE, SPAN, OR SKEW.

STRUCTURAL STEEL FOR ANCHOR PLATES AND CONTINUOUSLY THREADED ANCHOR BOLTS SHALL CONFORM TO AASHTO M 270 (ASTM A 709), GRADE 50 (CHARPY V-NOTCH TESTING NOT REQUIRED). HEX NUTS SHALL CONFORM TO AASHTO M291 (ASTM A 563). WASHERS SHALL CONFORM TO AASHTO M 293 (ASTM F 436), TYPE 3. ANCHOR BOLT ASSEMBLIES SHALL BE GALVANIZED, AND ALL OTHER STEEL PARTS COMPRISING THE BEARING ASSEMBLIES SHALL BE PAINTED WITH THE IZ-E-U PAINT SYSTEM.



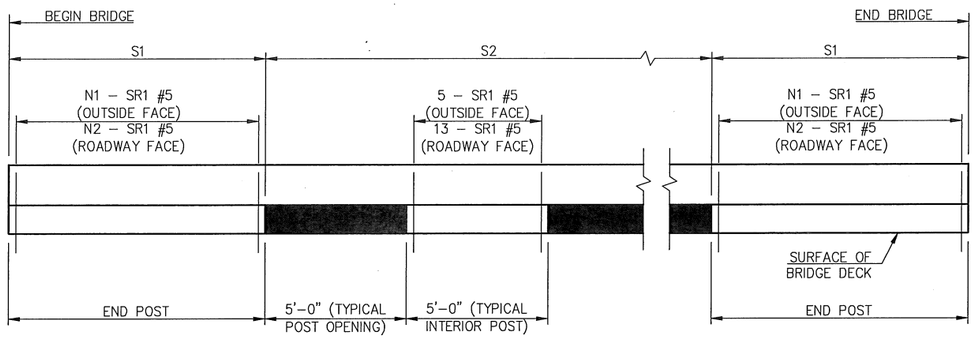
DESIGN	MBS	7/15
DETAIL	SLP	7/15
CHECK	MBS	7/15
GUY ENGINEERING SERVICES, INC.		

CED1 & CED8 STANDARDS

DETAILS OF BEARINGS

STANDARDS FOR SINGLE SPAN BRIDGES WITH CROSSTOWN STEEL BEAMS, 7' OR 10' DEEP SEAT CONVENTIONAL ABUTMENTS, 26' CLEAR ROADWAY

2009 SPECIFICATIONS | CTSBSTD-BRG-7FT..10FT-SK0..30 | R0



CONCRETE TRAFFIC RAIL ELEVATION

CONCRETE TRAFFIC RAIL WITH OPENINGS SCHEDULE (0° SKEW BRIDGE)				
SPAN	ABUTMENT TO ABUTMENT			
	S1	S2	N1	N2
40'	9'–1"	5 SPACES AT 5'–0" = 25'–0"	9	23
45'	6'–7"	7 SPACES AT 5'–0" = 35'–0"	7	17
50'	9'–1"	7 SPACES AT 5'–0" = 35'–0"	9	23
55'	6'–7"	9 SPACES AT 5'–0" = 45'–0"	7	17
60'	9'–1"	9 SPACES AT 5'–0" = 45'–0"	9	23
65'	6'–7"	11 SPACES AT 5'–0" = 55'–0"	7	17

CONCRETE TRAFFIC RAIL WITH OPENINGS SCHEDULE (30° SKEW BRIDGE)				
SPAN	ABUTMENT TO ABUTMENT			
	S1	S2	N1	N2
40'	5'–1 5/16"	7 SPACES AT 5'–0" = 35'–0"	6	14
45'	7'–7 5/16"	7 SPACES AT 5'–0" = 35'–0"	8	20
50'	5'–1 5/16"	9 SPACES AT 5'–0" = 45'–0"	6	14
55'	7'–7 5/16"	9 SPACES AT 5'–0" = 45'–0"	8	20
60'	5'–1 5/16"	11 SPACES AT 5'–0" = 55'–0"	6	14
65'	7'–7 5/16"	11 SPACES AT 5'–0" = 55'–0"	8	20

NOTE:
FOR ALL OTHER DETAILS OF TR–3 CONCRETE TRAFFIC RAIL NOT SHOWN INCLUDING SPACING OF THE SR1 BARS, SEE ODOT STANDARD TR3–2.

LICENSED PROFESSIONAL ENGINEER
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11/30/2015

DESIGN	MBS	7/15
DETAIL	SLP	7/15
CHECK	MBS	7/15
GUY ENGINEERING SERVICES, INC.		

CED1 & CED8 STANDARDS

TR–3 CONCRETE TRAFFIC RAIL LAYOUT

STANDARDS FOR SINGLE SPAN BRIDGES WITH CROSSTOWN STEEL BEAMS, 7' OR 10' DEEP SEAT CONVENTIONAL ABUTMENTS, 26' CLEAR ROADWAY

2009 SPECIFICATIONS | CTSBSTD–RAIL–7FT..10FT–SK0..30 | R0

Monday, November 30, 2015 7:24:44 AM
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